

FACTORS ASSOCIATED WITH PEER VIOLENCE AMONG ELEMENTARY,
MIDDLE AND HIGH SCHOOL STUDENTS

by

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ABSTRACT OF THE DISSERTATION

Factors Associated with Peer Violence

Among Elementary, Middle and High School Students

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The purpose of this study was to examine the relationships among perceived school climate, self-reported psychosomatic symptoms, visits to the school nurse for reported psychosomatic symptoms and reports of bullying behaviors among students' grades 3-12. In the study self-reported bullying behaviors were proposed to predict psychosomatic complaints at the school health office. Negatively perceived school climate was proposed to predict bullying behaviors. Lastly, the combination of bullying and negative school climate were proposed to predict psychosomatic complaints.

The final convenience sample of 222 students, ages 8-18 years, was obtained from one elementary school, one middle school and one high school in a suburban community in central New Jersey. Participants completed the demographic sheet and three questionnaires measuring the study variables during health or physical education classes.

Reports of bullying behaviors were found to significantly predict reports of psychosomatic complaints in school age children ($\beta = .35, t = 5.5, p < .001$). Bullying behaviors significantly predicted visits to the school health office for psychosomatic symptoms ($\beta = .24, t = 3.7, p < .001$). Negatively perceived school climate significantly predicted reports of bullying behaviors ($\beta = .16, t = 2.3, p < .02$). Negative perceived school climate significantly predicts reports of psychosomatic symptoms related to

bullying ($\beta = .35, t = 5.5, p < .001$). Results indicated there were significant differences between boys' ($\bar{x} = -32.9$) and girls' ($\bar{x} = -26.6$) perceptions of school climate ($p < .001$). There are no differences between boys' ($\bar{x} = 8.34$) and girls' ($\bar{x} = 7.78$) perceived bullying behaviors ($p < .06$). There are differences between boys' ($\bar{x} = 8.48$) and girls' ($\bar{x} = 8.04$) visits to the school health office with psychosomatic complaints ($p < .02$).

These findings have many implications for school nurses. School nurses can monitor the visits of students to the school health office for bullying related symptoms and advise administrative officials accordingly. School nurses are in a position to identify children who they suspect are victims of bullying and counsel them. The school nurse can collaborate with teachers, guidance counselors and law enforcement officials to combat bullying.

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Dedication

This dissertation is dedicated to my two beautiful children, Caitlin and Alex. You were truly my inspiration

Table of Contents

Notice of Copyright	
Title page	
Abstract	ii
Acknowledgements	v
Dedication	vi
Table of Contents	vii
List of Tables	vii
List of Illustrations	ix
Chapter 1. Introduction: The Problem	1
Chapter 2. Review of the Literature	9
Chapter 3. Methodology	28
Chapter 4. Analysis of the Data	38
Chapter 5. Discussion of the Findings	49
Chapter 6. Summary, Limitations, Conclusions, Implications, and Recommendations	60
References/Bibliography	71
Appendix A: Literature Review Table	85
Appendix B: Invitation Letter	109
Appendix C: Consent Form	110
Appendix D: Demographic and Psychosomatic Symptoms Questionnaire	114
Appendix E: School Community Survey	115
Appendix F: Peer Relations Questionnaire	117
Curriculum Vitae	119

List of Tables

Table 1: Demographics	40
Table 2: Regression Analysis- Bullying Behaviors and Reports of Psychosomatic Symptoms	44
Table 3: Regression Analysis-Visits to the School Health Office for Psychosomatic Complaints	44
Table 4: Regression Analysis-Reports of Bullying Behaviors	45
Table 5: Regression Analysis-Reports of Psychosomatic Symptoms	46
Table 6: Differences Between Boys' and Girls' Perceptions of School Climate	47
Table 7: Differences Between Boys' and Girls' Self-Reported Bullying Behaviors	47
Table 8: Differences Between Boys' and Girls' Visits to the School Health Office.	48

List of Illustrations

Diagram of Bronfenbrenner’s Ecological Systems Theory	27
Diagram of Bronfenbrenner’s Ecological Systems Theory and Bullying	28
Appendix B: Invitation Letter	109
Appendix C: Consent Form	110
Appendix D: Demographic/Psychosomatic Symptoms Questionnaire	1114
Appendix E: School Community Survey	115
Appendix F: Peer Relations Questionnaire	117

Chapter I

Introduction: The Problem

In this introduction, a brief overview of the problem of bullying as it relates to perceived school climate and visits to a healthcare professional with psychosomatic symptoms will be presented. Bullying has become a worldwide concern drawing the attention of researchers, healthcare providers, legislatures, news media, educators and law enforcement. The effects of bullying on the victims can have tragic consequences. According to the National Institute of Child Health and Development, (NICHD) three million students are absent from school each month because they feel unsafe at school, 280,000 students are physically attacked in secondary schools, every 7 minutes, a child is bullied on the playground (Ericson, 2007). According to the study, it was estimated that in 2007, 13 million children were bullied at school, on the Internet, on the bus, in their neighborhoods, at home and on their cell phones making this the most common form of violence young people face in this country (Ericson, 2007).

In recent years, healthcare professionals, including school nurses, have become increasingly aware of the adverse effects of bullying in primary and secondary school settings (Gini & Pozzoli, 2009; Juvonen, Graham, & Schuster, 2003; Meland et al., 2010; Rigby, 2003; van de Wal et al, 2003). Victims of bullying exhibit both physical and psychological symptoms and report significantly more unexplained psychosomatic symptoms than those who are not bullied (Dake, Price, & Telljohann, 2003; Fekkes, et al., 2004; Lien et al., 2009). Research has demonstrated that children are more likely to report being bullied in schools with poorly perceived school climate than in schools with positively perceived school climate (Craig, Pepler & Atlas, 2000; Espelage & Swearer,

2004; Greene, 2006; Khoury-Kassabri et al., 2004; Wolke et al., 2001). Therefore, nurses in schools with a perceived negative school climate may be significantly more likely to encounter students with unexplained psychosomatic symptoms. Bullying is no longer considered a childhood “rite of passage”, but instead has become an increasingly serious form of societal violence that can have deadly consequences (Rigby, 2001). Children who are victims of bullying need adult guidance, counseling and a place to seek refuge.

School nurses are well equipped to provide the physical care and emotional support needed to assist these children. The school climate is the environment in which children learn each day. In order for school nurses to help combat bullying and assist the victims they must be able to recognize the symptoms a bullied victim may exhibit. An awareness of the characteristics of a specific school climate will enable the nurse to take a proactive stance against bullying. Lastly, an understanding of what actions constitute bullying will equip the nurse with the knowledge needed to intervene or direct the student to the appropriate adult within the school system for help.

The concept of bullying, also known as peer victimization, is not a new phenomenon. Cases of bullying have been cited in the literature as far back as the 1800’s (Rigby, 2001). Charles Vaughn conducted one of the first research studies related to bullying in 1941. Vaughn studied two groups of boys from the Wayne County Training School in Northville, Michigan. The results of this study indicated that boys with poor reading scores were more aggressive, more hyperactive, had more temper tantrums, bullied more and were more defiant towards authority figures than boys, who had higher reading scores (Vaughn, 1941).

It was not until the 1970's that researchers conducted in depth research to explicate the concept of bullying. In a three year, longitudinal study of bullying Olweus (1978) studied 1000 boys aged 12-16 years in schools in the greater Stockholm area Olweus investigated the biological, psychological, and social variables associated with being a bully and a victim. Olweus looked at the physical abnormalities, physical strength, and psychological characteristics of the victims and the bullies, as well as variables such as classroom size and teacher attitudes towards bullying. Olweus found that bullies tended to have a history of aggressive behaviors and had poorer relationships with their parents, while victims were more timid and insecure. These results were published in a landmark book, *Aggression in the Schools: Bullies and Whipping Boys* (Olweus, 1978). In the 1990's, Olweus founded a national anti-bullying campaign and developed the renowned Olweus Bullying Prevention Program. This program was in response to the triple suicide of three young boys, in Norway, who had been bullied. Olweus' work contributed greatly to our modern understanding of bullies and their victims.

Researchers have identified a relationship between bullying and various personality disorders (Coolidge, DenBoer, & Segal, 2004; Vaughn et. al., 2010). According to Coolidge, DenBoer & Segal, children who participate in bullying behaviors often exhibited personality disorders. Coolidge, DenBoer & Segal used the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV) to define the personality disorders associated with the bullying behaviors. The research showed that children who bullied exhibited behaviors that are consistent with many of the diagnostic criteria for Narcissistic Personality Disorder and Antisocial Personality Disorder (Cavaiola, 2000). Bullies who exhibited behaviors consistent with Narcissistic

Personality Disorder were characterized as self-important, arrogant and lacked empathy (Cavaiola, 2000; Coolidge, DenBoer and Segal, 2004). Children who bullied believed that they were superior to their peers and exaggerated their own accomplishments while diminishing the accomplishments of their peers (Cavaiola, 2000; Coolidge, DenBoer & Segal, 2004). These children had difficulty recognizing the needs and feelings of others, were oblivious to the hurtfulness of their behavior and showed an emotional coldness (Cavaiola, 2000; Coolidge, DenBoer & Segal, 2004). Children with Antisocial Personality Disorder behavior were characterized by lack of remorse, lack of guilt and lack of conscience (Cavaiola, 2000; Coolidge, DenBoer & Segal, 2004). These children failed to conform to social norms, were deceitful, impulsive, had no regard for others safety and rationalized their behavior when hurting someone (Cavaiola, 2000; Coolidge, DenBoer & Segal, 2004). The researchers found that the bullies did not perceive any of their behaviors as problematic, which is consistent with a bully's lack of insight into their own behavior and the effect their behavior has on others (Cavaiola, 2000; Coolidge, DenBoer & Segal, 2004).

Research shows that children who were bullies in school are more likely to grow up and have criminal records and/or substance abuse problems than those children who were not bullies (Ericson, 2001; Olweus & Limber, 1999). The study by The National Institute of Child Health and Human Development (NICHD) found that children who bullied were at risk for lack of success in school, experienced difficulty making friends and loneliness and became involved in problem behaviors such as smoking and drinking (Ericson, 2001). Olweus & Limber (1999), reported that 60% of males who bullied in grades 6-9 were convicted of at least one crime as adults as compared to 23% of males who did not

bully. In addition, 40% of those who were former bullies had three or more criminal convictions by age 24, as compared with 10% of those males who did not bully. Oliver, Hoover & Hazer (1994) found that those who had participated in bullying in school maintained their behavior into adulthood, which negatively affected their ability to maintain healthy positive relationships.

Bullying is conceptually defined as repeated acts of aggression against an individual in which the perpetrator intentionally and repeatedly harms another weaker individual (Baldry, 1998; Bonds & Stoker, 2000; Nancel et al., 2001; Olweus, 1993). The perpetrator's intent is to cause distress to their victims over time; this distress can be verbal, physically or both (Baldry, 1998; Bonds, 2000; Nancel et al., 2001; Olweus, 1993). Bullying involves repeated physical, verbal or psychological attacks or intimidation directed against a victim who cannot defend him or herself because of size or strength, or because the victim is outnumbered or less psychologically resilient (Baldry, 1998; Bonds, 2000; Nancel et al., 2001; Olweus, 1993). There are three major criteria that are common to all definitions of bullying: 1) aggressive behavior that involves unwanted negative actions 2) a pattern of behavior repeated over time and 3) an imbalance of power and strength. For this study, perceptions of bullying behaviors were operationalized by the Peer Relations Questionnaire (PRQ).

Researchers have demonstrated a relationship between bullying and perceived school climate (Bandyopadhyay, Cornell & Konold, 2009; Khoury-Kassabri, Benbenishty & Astor, 2005; Meyer-Adams & Conner, 2008; Wilson, 2004). Kassen et al., (2004) found that perceived school climate was significantly and negatively related to bullying. Kassen et al., (2004) reported that the less chaotic and the more academically focused the

school, the lower the prevalence of bullying. Researchers have reported that in environments where there is perceived poor social support from adults, there is an increase in bullying and victimization (Demaray & Malecki, 2003; Kassen et al., 2004; Unnever & Cornell, 2003). In such a climate, students are less likely to intervene when fellow classmates are bullied because the adults do not intercede (Kassen et al., 2004; Unnever & Cornell, 2003). In non-supportive school climates, bystanders are frequently fearful of retaliation from the bully if they intervene (Kassen et al., 2004; Unnever & Cornell, 2003).

Perceived school climate can be conceptually defined as the quality and character of school life. This definition takes into account the physical environment of the school (including classrooms, playgrounds, and non-academic areas), as well as the organizational structure, teaching and learning practices, interpersonal relationships, rules, norms and goals (Bandyopadhyay, Cornell & Konold, 2009; Khoury-Kassabri, Benbenishty & Astor, 2005; Langdon & Preble, 2008; Meyer-Adams & Conner, 2008; Wilson, 2004;).

In this study, the School Community Survey (2004) operationalized school climate.

Indicators for school climate in the SCS are:

1. Friendliness and belonging (This includes how inclusive, cooperative, welcoming and friendly students are with one another).
2. Student approval (How much students like or dislike the school).
3. Student perceptions of utility of learning (How useful students find what they learn in school).

Being bullied is a risk factor for children's health and psychological well-being (Fekkes, et al., 2009; Natvig, Albrektsen, & Qvarnstrom, 2001; Rigby 2003). Researchers discovered that victims of bullying exhibit multiple psychosomatic symptoms (Fekkes, et al., 2009; Natvig, Albrektsen, & Qvarnstrom, 2001; Rigby 2003). In several studies, researchers found a positive correlation with victimization and reports of headache, stomachache, backache, body aches, sleep disturbances, tiredness, dizziness and poor general health (Forero, McLellan, Rissel & Bauman, 1999; Gini, 2008; Wolke, Woods, & Karstadt, 2001).

For the purpose of this study, psychosomatic symptoms are defined as symptoms the individual exhibits that cannot be clearly attributed to a specific medical condition. Victims psychosomatic complaints may include headaches, neck pain, shoulder pain, low back pain, stomach ache, feeling tense, feeling nervous, complaining of fatigue, difficulty sleeping, dizziness, irritability, increased frequency of illness or other stress related symptoms (Fekkes, et al., 2009; Natvig, Albrektsen, & Qvarnstrom, 2001; Rigby 2003). For the purpose of this study, psychosomatic symptoms were operationalized with the Health Behaviors in School-age Children Questionnaire (HBSC).

Statement of the Problem

What are the relationships among perceived school climate, self-reported psychosomatic symptoms, visits to a healthcare provider for psychosomatic symptoms and reported bullying behaviors among children in grades 3rd through 12th?

Delimitations

Children in grades 3-12 in three Monmouth County, New Jersey schools (one elementary, one middle school and one high school) were invited to participate in the study. This study did not include children in grades lower than third or children with special needs who would not be able to read or answer the questions independently.

Significance

This study will provide additional insights into the factors associated with peer violence in schools. School nurses are in a unique position to help identify the perpetrators and victims. School nurses can play a major role in identifying, counseling and protecting the victims of bullying (Borup & Holstein, 2007; van de Wal et al, 2003). Research can provide the school nurses with valuable information like, the knowledge that children who are victims of bullying may not report it. In addition, children who are bullied frequently exhibit psychosomatic symptoms, and seek refuge in the school nurses office. This important information can afford the nurses the ability to identify the victims, provide guidance and notify the administration if necessary. School nurses can monitor the visits of students to the school health office for bullying related symptoms and advise administrative officials accordingly. School nurses are in a position to identify children whom they suspect are victims of bullying, counsel them and inform administration as necessary. The school nurse can collaborate with teachers, guidance counselors, school appointed mental health professionals and law enforcement to combat bullying.

Knowledge of the specific school climate can also help the school nurse combat bullying. The school nurse can initiate prevention efforts, contribute to the school wide

or district wide anti-bullying safety team, train faculty and staff on identification of bullying behaviors and intervention strategies. They can also educate faculty and staff regarding the long-term impact of bullying on the emotional health of the victim and work with individual students and their families.

Chapter 2

Review of the Literature

The purpose of this research study was to examine the relationships among perceived school climate, self-reported psychosomatic symptoms, visits to a healthcare provider for reported psychosomatic symptoms and self-reported perceptions of bullying behaviors among students' in grades 3-12. This chapter will provide a theoretical framework and empirical review of the literature as it pertains to types of bullying, attributes of bullying victims, perceived school climate and reports of psychosomatic symptoms documented in visits to the school nurse and other healthcare professionals. Lastly, the formulated hypotheses are listed.

Theoretical Framework

The theoretical framework for this study is derived from Bronfenbrenner's Ecological-Systems Theory (Bronfenbrenner, 1997; Espelage & Swearer, 2004; Lee, 2011; Meyer-Adams & Conner, 2008). The Ecological-Systems Theory states that children are part of an interconnected system in which the child is at the center and all of the systems that affect the child concentrically surround the child (Bronfenbrenner, 1997; Espelage & Swearer, 2004; Lee, 2011; Meyer-Adams & Conner, 2008). According to Bronfenbrenner, the child is part of the social network that is made up of four interconnected systems: microsystem, mesosystem, exosystem, and macrosystem. The

child is actively involved, both directly and indirectly with all the systems (Espelage & Swearer, 2004; Meyer-Adams & Conner, 2008; Lee, 2011). (See Figure 1)

The microsystem is defined as the relationship between the child and the environment where the child is located, such as in the home, church or school (Barboza et al., 2009; Bronfenbrenner, 1977; Lee, 2011). The microsystem is the layer that is closest to the child. The child has a direct relationship with the variables within the microsystem (Barboza et al., 2009; Espelage & Swearer, 2004; Lee, 2011; Meyer-Adams & Conner, 2008). The three most significant components of this setting are activities, interpersonal relationships, and roles (Lee, 2011). The influence of the environment on the child's behavior is best understood by the child's perceptions and interpretations of what takes place in that setting. Bronfenbrenner (1977) believes that the child actively affects his or her environment, meaning that their response to an environmental condition, will in turn affect their environment. It is at the microsystem level; that researchers can obtain an effective understanding of a child's behavior by examining the manner in which the child interacts with others and participates in activities (Bronfenbrenner, 1977). The greatest impact on the child occurs at the microsystem level. For example, the child's school is a microsystem, it is here that the child forms social relationships, participates in activities that will build his or her cognitive and physical skills and where the child experiences personal successes or failures. For the purpose of this study variables in the microsystem include the relationship between the child and school, the child and peers and the child and the school nurse.

The mesosystem is the layer that describes how the different elements of a child's microsystem work together (Bronfenbrenner, 1977). This system is the layer where the

child connects with the setting at various developmental stages in the child's life (Barboza et al., 2009; Espelage & Swearer, 2004; Meyer-Adams & Conner, 2008). For example, the child's parents may participate in a parent teacher conference at the child's school, thus causing the two variables school and family to interact. The interaction of the two variables, will directly affect the child's development.

The third layer, the exosystem includes variables that have an indirect effect on the child's development. Examples of variables in the exosystem are the parents' workplaces, the presence of extended family members, and the neighborhood (Bronfenbrenner, 1977). These variables may include factors associated with the parent's job such as work schedules, travel, amount of pay, and job stress. These factors affect family life, which in turn affects the child (Barboza et al., 2009; Espelage & Swearer, 2004; Lee, 2011). For the purposes of this research study the structures and variables within the exosystem will include, other individuals or institutions that have a significant effect on the child such as, extended family members, neighborhoods, school boards and school administration. For example, although the child may not be directly involved in the changes made to the school bullying policy by the school administration or the school board, the impact of these changes could have a direct effect on the child.

The macrosystem is considered the outer most level of the child's environment and it includes cultural values, customs and laws (Barboza et al., 2009; Espelage & Swearer, 2004; Lee, 2011; Meyer-Adams & Conner, 2008). According to Bronfenbrenner (1977), the macrosystem is where the general model of the culture and subcultures are set (Bronfenbrenner, 1977). The cultural norms are the agreed-upon expectations and rules by which a culture guides the behavior of its members in any given situation

(Bronfenbrenner, 1997). Bronfenbrenner (1997) states that in the macrosystem level there are both explicit norms, such as laws, rules and regulations, as well as those informal or implicit rules that are carried out in the minds of the society members as the “norms”. The macrosystem indirectly influences the child’s development. In this study, the macrosystem, the outermost level of the child’s environment includes, school customs, school rules and school cultural norms. For example, if a child doesn’t participate in the school customs or cultural norms he or she may be a target for bullying because the child stand out as different. (See Figure 2)

These fundamental components of the Ecological Systems Theory take into account the child’s physical climate and its relationship to the child at the individual, school and community levels. This arrangement allows the different variables of the theory to directly or indirectly interact with one another. Bronfenbrenner’s Ecological Theory informs our understanding of the environmental influences on children’s lives. The environment directly and indirectly influences children’s perceptions and interpretations of their experiences. Therefore, from an Ecological perspective, certain individual characteristics, or the child’s relationships with peers, teachers and parents could influence whether they are bullied or not. Family, community factors and school characteristics including physical setting, school grounds and school policies may all work together to influence the prevalence of bullying behaviors.

Empirical Review of Literature

Methods

Numerous databases were used to search for literature related to types of bullying, perceived school climate, self-reported psychosomatic symptoms and visits to a healthcare provider with psychosomatic complaints. Databases included MEDLINE, PsychINFO, Academic Search Premier, PubMed, ScienceDirect, SpringerLink, ERIC, The Cochrane Library, Your Journals@Ovid, PsychiatryOnline and CINAHL data bases (Jan 1960- February 2012). The following key search words and phrases were used: bully, bullying, victims of bullying, symptoms related to bullying, school nursing, school climate, bully victims, peer victimization and school environment. The search yielded a total of 18,239 citations. Articles were reviewed for relevance and included if they were published in a peer-reviewed data based journal, published after 2005, (unless the article was pertaining to seminal research), written in English. There were 23 articles that met the inclusion criteria. (See Appendix A)

Results

Bullying

The types of aggressive behaviors bullied children experience vary according to the length and extent of the abuse (Rigby, 2003). There are four types of bullying; 1) direct bullying, 2) indirect bullying, 3) bully by proxy and 4) cyber bullying. Direct bullying is perhaps the most well-known form of bullying and includes physical acts such as hitting, punching, kicking, tripping, stealing or damaging belongings or embarrassing peers (Archer & Coyne, 2005; Juvonen, Graham, & Schuster, 2003; Lamb, Pepler, & Craig, 2009; Selekman & Vessey, 2004). However, direct bullying may involve verbal acts

which are often more subtle and include insults, name calling, and verbal threats. The second type of bullying most commonly encountered is known as indirect bullying. Indirect bullying may include spreading rumors, shunning or excluding the victim, gesturing, making facial expressions and pitting one child against another (Archer & Coyne, 2005; Lamb, Pepler, & Craig, 2009; Merrel et al., 2008; Selekman & Vessey, 2004). A third type, defined as “bullying by proxy” (Thompson et al., 2002) involves convincing others to harass the victim on behalf of the bully. Lastly, cyber bullying has become another popular form of harassment. In this method, a bully uses the Internet or other forms of digital communication (such as text messaging) to insult or threaten his or her victim (Juvonen & Gross, 2008; Lamb et al., 2009; Selekman & Vessey, 2004).

Attributes and Consequences of a Victim of Bullying

Researchers have identified a number of characteristics common to individuals who are victims of bullying (Frisen, Jonsson, & Persson, 2007; 2008; Vessey et al., 2003; Vreeman & Carroll, 2007). Children who are victimized tended to be smaller and weaker and may have a unique physical appearance (Merrell et al., 2008; Rigby 1999; Rigby & Slee, 1991; Vessey et al., 2003; Vreeman & Carroll, 2007). For example, the child may be overweight, wear glasses, have braces, or have an unusual hair color. The results of Frisen, Jonsson & Persson’s study (N = 46) 40% of the children responded to the question “Why do you think children are bullied”, with “victims appearance”, Suggesting that children were most commonly bullied because of the way they looked. Other victim characteristics identified in the literature include children who have academic difficulties

and those who are uncoordinated or have odd mannerisms (Merrell et al., 2008; Vessey et al., 2003).

Some researchers report victims of bullying are more likely to come from harsh home environments, have experienced child abuse or have parents who are either overprotective or who have an authoritarian style (Brown, Birch, & Kanchela, 2005; Veenstra et al., 2005; Nansel et al., 2001). In a study by Nansel et al., victims whose parents were heavily involved in school activities such as parent teacher association, or worked as teacher's assistants or school volunteers were 1.5 times more likely to be victims than children whose parents were not involved in school organizations (OR 1.19, CI 0.90-1.58). In a similar study, Veenstra et al. found significance ($p = .02$) in children who were victims of bullying ($n = 164$) when parents were overprotective or overinvolved at school. In a meta-analysis, Carney & Merrell (2001) found that bully victims are more likely to bring weapons to school for self-protection. Similarly in a study by Barboza, Schiamberg, Oehmke, Korzeniewski, Post and Heraux (2009) the researchers reported that children who were bullied were 46% more likely to carry a weapon to school ($Z = 8.50, p = .00$). According to the United States Secret Service, three fourths of these cases found student shooters used weapons in response to being bullied by fellow students (Vossekuil, Fein, Reddy, Borum & Modzeleski, 2004). Thus, identification of individuals who have been bullied or are at risk for victimization is essential to reduce or prevent the harmful psychological responses associated with bullying.

Children who are bullied by their peers may exhibit numerous medical disorders associated with physical and psychosomatic symptoms (Dake, Price, & Telljohn, 2003;

Due et al., 2006; Lien et al., 2009; Rigby, 2003). These symptoms include frequent headaches, stomach pains, musculoskeletal tenderness, dizziness, enuresis, sleep disturbances, an increased incidence of communicable diseases such as upper respiratory infections and poor general physical health (Dake, Price, & Telljohn, 2003; Due et al., 2006; Lamb, Pepler, & Craig, 2009; Lien et al., 2009; Rigby, 2003). Due et al (2007) reported that 48.1% of boys (n= 2581) and 43.1% of girls (n=2624) who were victims of bullying were more likely to use medications for pains and psychological problems when compared to non-bullied children. Due et al. also found 48.9 % of the children's use of medications (N = 5,205) was for headaches. Victims of bullying also suffer from psychological problems such as, poor self-esteem, anxiety, suicidal ideations, and depression (Craig & Pepler, 2007; Due et al., 2007; Fekkes et al., 2004; Lamb, Pepler, & Craig, 2009; Lein et al., 2009; Merrell et al., 2009; Vreeman & Carroll, 2007). Fekkes et al. reported that victims of bullying (n = 390) have significantly higher chances of developing depression and psychosomatic complaints than children who were not bullied. In fact, 48.6% of the children who stated they were bullied reported a moderate indication for depression (Fekkes et al., 2004). In a study of adolescents (N = 4721) by Van der Wal, de Wit & Hirasing (2003), the researchers reported that depression and suicidal ideations were common outcomes of being bullied for both boys and girls. Van de Wal, de Wit & Hirasing found that boys (13.4%) and girls (24.8%) who were frequently bullied experienced suicidal ideations. However, these associations were stronger for those directly bullied when compared to indirect bullying (Van der Wal, de Wit & Hirasing, 2009). Children who have been bullied also tend to have difficulty with peer relationships (Gini, 2008). In a study by Gini, the researcher reported that victims of

bullying (n = 40) had an increased difficult time with peers (OR = 4.40) compared to those who were not victims of bullying. Many victims of bullying have poor social skills and describe themselves as lonely (Correia & Dalbert, 2008; Engstrom et al., 2005; Juvonen, Graham, & Schuster, 2003; Lien et al., 2009; Veenstra et al., 2005; Nansel et al., 2001; Rigby, 2003; Selekman & Vessey, 2004; van der Wal, de Wit, & Hirasing, 2003). . Ironically these issues are also seen in individuals who are perpetrators of bullying (Dake, Price, & Telljohn, 2003; Frey et al., 2009, Gini, 2008).

Perceived School Climate

Since school climate refers to the “feel” of the school, a positively perceived school climate is characterized by a physical environment that is felt to be welcoming and conducive to learning (Barboza et al, 2009; Meyer-Adams & Conner, 2008; Sebring, Allenworth, Luppescu & Easton, 2010). In a positively perceived school climate; students feel safe everywhere on school property, the school building contains an optimal number of students, classrooms and school grounds are well maintained and clean, noise levels are low, classrooms are inviting and teachers have adequate materials and text books (Sebring, Allenworth, Luppescu & Easton, 2010). Another factor that influences positively perceived school climate is a social environment that promotes effective communication and interactions among students and faculty (Sebring, Allenworth, Luppescu & Easton, 2010). In this climate; teachers and students actively communicate with one another, students have opportunities to participate in the decision-making, teachers are collegial and students and teachers are instructed on how to prevent and resolve conflicts (Barboza et al., 2009; Sebring, Allenworth, Luppescu & Easton, 2010). An effective environment promotes self-esteem and belonging influences positively

perceived school climate (Barboza et al., 2009; Sebring, Allenworth, Luppescu & Easton, 2010; Wilson, 2004). Examples of an affective environment include 1) positive interactions between students, teachers and staff where individuals interact in a supportive, caring and respectful manner; 2) Teachers and staff are friendly; 3) There is a sense of community; 4) Students, teachers and staff feel respected and valued and 5) The parents perceive the school as warm, caring and inviting (Barboza et al., 2009; Sebring, Allenworth, Luppescu & Easton, 2010; Wilson, 2004). The presence of an academic environment that promotes learning is another factor in the perception of a positive school climate (Sebring, Allenworth, Luppescu & Easton, 2010).

School is one of the primary settings where bullying and victimization occur (Espelage & Swearer, 2004). Positively perceived school climate is a crucial factor in children's academic, social, behavioral, and moral development (Espelage & Swearer, 2004; Khoury-Kassabri et al., 2004; Greene, 2008; Meyer-Adams & Conner, 2008). There is a strong body of research that supports the relationship between school climate and bullying (Khoury-Kassabri et al., 2004; Nansel, 2001; Meyer-Adams & Conner, 2008). Barboza et al. (2009) reported that in a sample of 11-14 year old adolescents (N=9,816) there was a direct relationship between poorly perceived school climate and bullying ($Z = 3.38, p = .001$). In a similar study, Nansel et al. (2001) reported that children in grades 6-10 (N = 15,686) who poorly perceived school climate were more likely to report experiencing bullying behaviors (41.1%) and victimization (99, OR (.90 - 1.09), $p < .001$). In that study, ninety-seven percent of students who were bullied reported a poorly perceived of school climate (Nansel et al., 2001). Khour-Kassabri et al. (2004) identified that students who rated the school climate as poor had a 20% greater chance of

experiencing serious physical harm, a 32% greater chance of being physically or verbally threatened, a 25% greater chance of experiencing moderate physical harm and a 22% greater chance of being subjected to verbal/social bullying than those who rated the school climate more favorably (Khour-Kassabri et al, 2004). Khour-Kassabri et al. (N = 10,400) looked at the type of victimization a child may encounter as well as perceptions of school climate and reported that children who endured, serious physical bullying (11%), threats (10%), moderate physical bullying (7%) and verbal-social bullying (6%) also perceived the school climate as negative. The data consistently supports the hypothesis that institutions where the school climate is poorly perceived school climate have a significantly higher incidence of bullying than those with a positively perceived school climate (Espelage & Swearer, 2004; Greene, 2008; Khoury-Kassabri et al., 2004; Wolke et al., 2001).

It is apparent that schools with a poorly perceived school climate are more likely to have environmental conditions that are conducive to bullying behaviors (Espelage & Swearer, 2004; Khoury-Kassabri et al., 2004; Wilson, 2004). There are several explanations why poorly perceived school climate may impede learning and foster bullying behaviors. Factors such as overcrowded and disorganized classrooms, lack of supplies, hostile or limited interactions between students and teachers and administrators or teachers unwillingness to interact with parents may directly or indirectly promote bullying and impede learning (Espelage & Swearer, 2004; Khoury-Kassabri et al., 2004; Wilson, 2004). These schools may foster an environment where conflict resolution skills are not addressed and incidences of bullying are ignored (Espelage & Swearer, 2003; Khoury-Kassabri et al., 2004). Children who attend schools with poorly perceived school

climates are frequently victims of bullying (Gini 2008; Khoury-Kassabri et al 2004; Wilson, 2004).

Researchers have identified specific characteristics of perceived school climates that are conducive to bullying (Espelage & Swearer, 2003; Espelage & Swearer, 2004; Greene, 2008; Khoury-Kassabri et al., 2004). When children who bully perceive there are no repercussions for their actions they are more likely to torment others (Espelage & Swearer, 2004). Interestingly, students who perceive their school climate poorly tend to have lower academic performance (Espelage & Swearer, 2004). Meyer-Adams and Conner (2008) stated that if a student's perception of the school climate is negative they may respond with aggressive behavior ($p < .001$) or may avoid attending school altogether ($p < .001$) [$S - B\chi^2 (387, n = 2,675) = 1,834, RCFI = 0.91, RMSEA = 0.04$]. Schools with positive school climate and less bullying are characterized by positive disciplinary actions, strong parental involvement, high academic standards and the presence of adults who serve as positive role models within the school (Espelage & Swearer, 2004; Greene, 2008; Meyer-Adams & Conner, 2008). Thus, it is apparent the values and attitudes of a particular school climate can discourage bullying behavior and support positive social behavior.

Psychosomatic Complaints

In recent years, medical practitioners, school psychologists, and school nurses have become increasingly more aware of the adverse effects of bullying in primary school children (Gini & Pozzoli, 2009; Juvonen, Graham, & Schuster, 2003; Meland et al., 2010; Rigby, 2003; van de Wal et al, 2003). Several studies have examined the harmful

effects of being bullied (Gini & Pozzoli, 2009; Juvonen, Graham & Shuster, 2003; Meland et al., 2010; Rigby, 2003; van de Wal et al., 2003; Borup & Holstein, 2007). Children who are victims of bullying frequently suffer from a variety of psychosomatic complaints (Borup & Holstein, 2007; Gini & Pozzoli, 2009; Juvonen, Graham & Shuster, 2003; Meland et al., 2010; Rigby, 2003; van de Wal et al., 2003). Bullying affects the whole person and has enormous physical effects, including exhaustion due to lack of sleep, weight loss, fatigue and physical pains (Gini & Pozzoli, 2009; Juvonen, Graham & Shuster, 2003; Meland et al., 2010; Rigby, 2003; van de Wal et al., 2003). Physical symptoms may include; neck and shoulder pain, headaches, low back pain, stomach aches, feeling tense or nervous, fatigue, difficulty sleeping, dizziness, and increased frequency of illness related to chronic stress (Dake, Price & Telljohann, 2009; Fekkes et al., 2009; Gini, 2008; Lien et al., 2009; Natvig, Albrektsen & Qvarnstrom, 2001; Rigby, 2003; Selekman & Vessey, 2004). Psychosomatic symptoms can have an effect on a person's mental and physical health (Hansen et al., 2006). Researchers have reported that there is a significant relationship between bullying, stress and psychosomatic symptoms (Gini, 2008; Lien et al., 2009; Hansen et al., 2006).

Researchers reported significant negative correlations between psychosomatic complaints and bullying (Fekkes, Pijpers, & Verloove-Vanhorick, 2006; Gini & Pozzoli, 2009; Rigby, 2003; Williams et al., 1996). Fekkes et al., (2006) found that victims of bullying ($n = 2761$) had a higher risk for psychosomatic symptoms than those who were not victims of bullying ($p < .001$). Similarly, Gini (2008) reported in a study of children ($N = 178$) those who experienced bullying (22% of the sample) were shown to have a variety of health problems with sleeping ($p < .001$), feeling tense ($p < .001$), feeling tired

($p < .001$) and dizziness ($p < .001$). Interestingly of the 178 children sampled, children who were bullied ($n = 40$) report significantly more psychosomatic symptoms ($p < .001$) than those who were not bullied ($n = 138$) (Gini, 2008). These findings support the belief that children who are bullied have increased incidences of psychosomatic complaints.

The School Nurse and Bullying

School nursing is a specialty area of professional nursing. School nurses focus on disease prevention, health maintenance and health promotion (Whitehead, 2006; Wilson, 2004). School nurses deal with problems such as violence, substance abuse, sexually transmitted diseases, and depression on a daily basis. The nurse's role on any given day is ever changing from a triage nurse, case manager, surrogate parent, mental health provider, public health nurse, to an administrator. School nurses have the expertise to examine and solve problems in a holistic manner (Whitehead, 2006; Wilson, 2004). School nurses must be organized independent thinkers who can plan and deliver care utilizing clinical expertise. Therefore, school nurses can contribute to the perceptions of a healthy school climate.

School nurses play a major role in identifying, counseling and protecting the victims of bullying (Borup & Holstein, 2007; van de Wal et al, 2003). The school nurse is often seen by students as a confidant, someone who is outside the academic system and is in a position to help and give guidance (Borup & Holstein, 2007). School nurses have the ability to communicate with children on their own terms and are often more aware of the cultural and behavioral norms of the institution than teachers and administrators (Few,

Hicken & Butterworth, 1996). There are very few studies exploring the relationship between school nursing and bullying (Borup & Holsten, 2007).

Borup & Holsten conducted a study to examine the relationship between victimization of bullying and the perceived effects of dialogues with school nurses. Borup & Holsten (2007), surveyed a sample (N=5,205) of children about their experiences with bullying. The authors reported that those children who were bullied (43 % of boys and 41 % of girls) often found refuge with the school nurse (OR = 1.812, 95% CI 1.310-2.506). School nurses have the expertise to assist students with problem solving techniques, coping strategies, anger management strategies, conflict resolution skills and self-image issues (Whitehead, 2006; Wilson, 2004). It has been reported that victims of bullying visited the nurse more regularly and followed the recommendations/advice of the nurse more often than advice/recommendations given by other adults (Borup & Holsten, 2007; Selekman & Vessey, 2004).

School nurses have the expertise and ability to collaborate with school, family, community, and law enforcement officials to develop, foster and implement programs that will proactively change behaviors, thus leading to the creation of positive, healthy and safe school environments.

This literature review highlighted the growing problem with bullying and how bullying affects a student's health. However, as evident by this review of the literature there is a lack of focused research on the relationship among students, bullying behaviors, psychosomatic symptoms and visits to a healthcare provider, such as a school nurse. Therefore, the purpose of this research study is to examine the relationships among

perceived school climate, self-reported psychosomatic symptoms, visits to a healthcare provider for psychosomatic symptoms, and self-reported bullying behaviors among students in grades 3-12.

Hypothesis and Research Questions

According to Ecological Systems Theory, there is a direct relationship between the child, the school environment, and the child's peers (Barboza et al., 2009; Karvonen, Vikat, & Rimpela, 2004). Therefore, there can be a direct link between the school environment and the child's physical and psychological well-being. Negative perceptions of school climate have been shown to lead to poor general health and poor school climate has been shown to foster an environment for bullying behaviors (Barboza et al., 2009; Borup & Holsten, 2007; Espelage & Swearer, 2004; Greene, 2008; Khoury-Kassabri et al., 2004; Meyer-Adams & Conner, 2008; Selekman & Vessey, 2004).

This study will test the association of psychosomatic symptoms with self-reported bullying behaviors and poor perceived school climate in school age children. The following hypotheses are proposed:

H1: Perceived bullying behaviors significantly predict reports of psychosomatic complaints in school age children.

H2: Perceived bullying behaviors significantly predict visits to the school health office for psychosomatic symptoms.

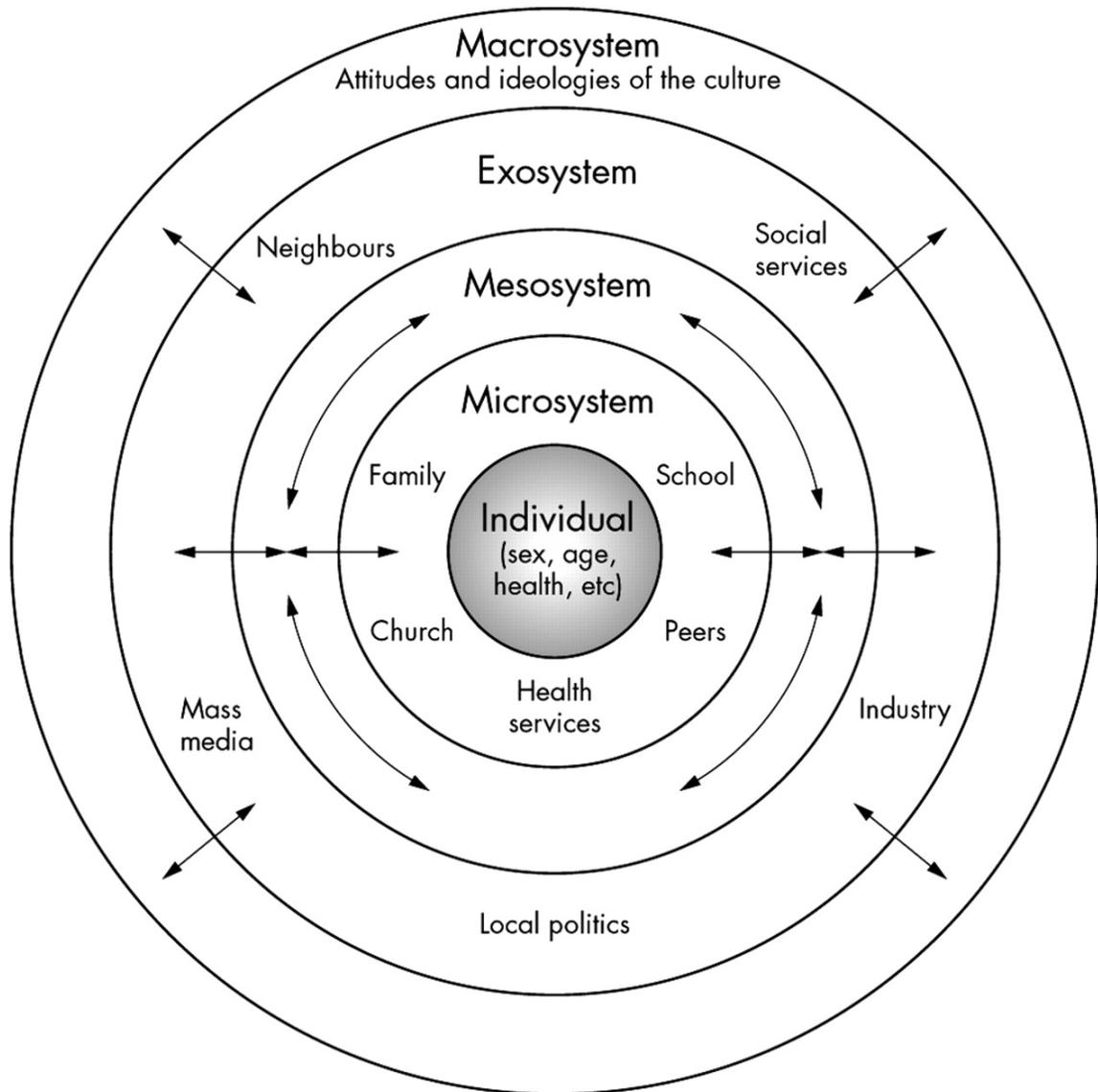
H3: Schools with a perceived negative school climate significantly predict reports of bullying behaviors.

H4: Reports of psychosomatic symptoms related to bullying significantly predict negative perceived school climate.

The following research questions were asked:

1. Are there differences between boys' and girls' perceptions of school climate?
2. Are there differences between boys' and girls' self-reported bullying behaviors?
3. Are there differences between boys' and girls' visits to the school health office with psychosomatic complaints?

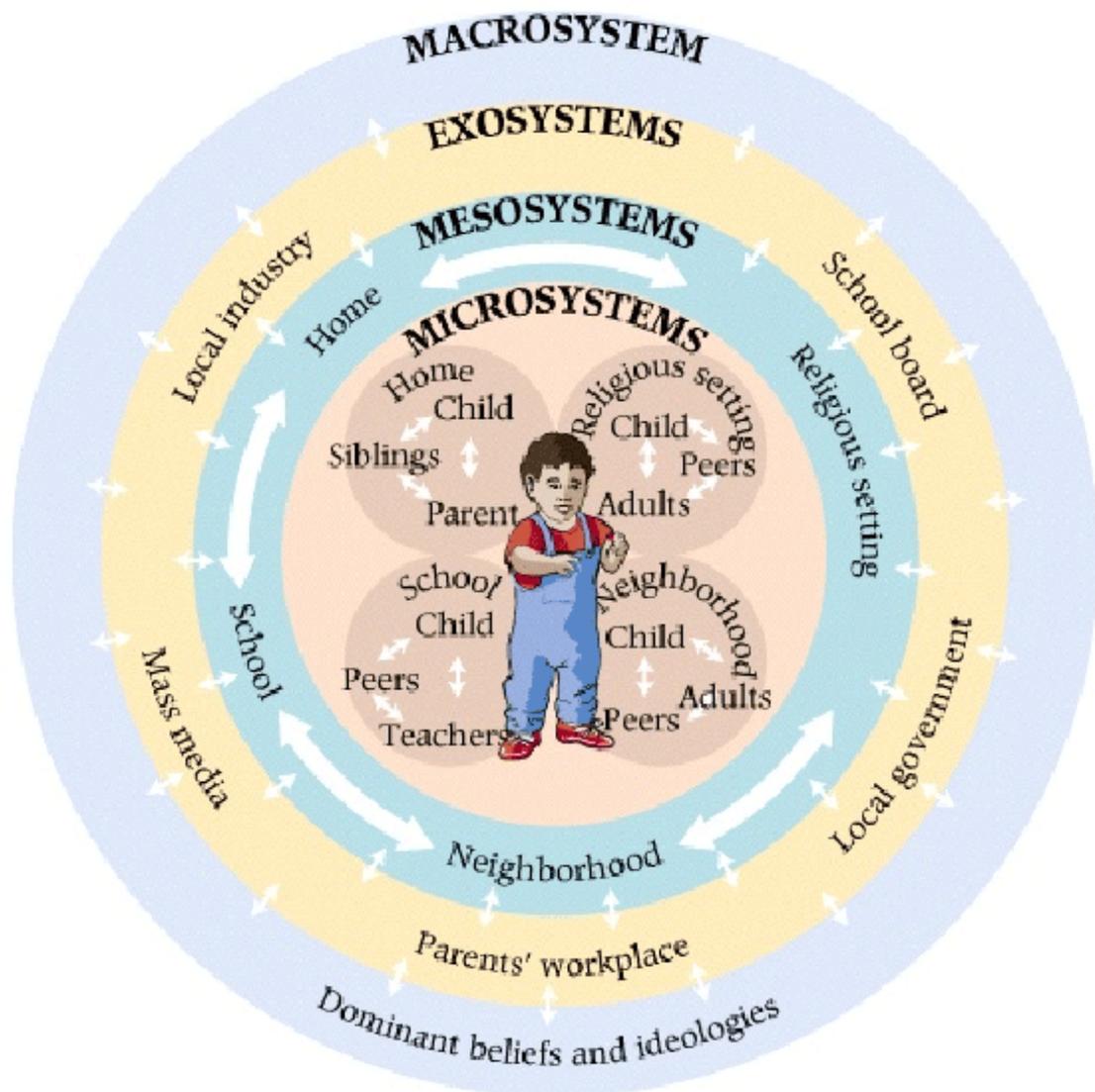
Figure 1



Lloyd, C. (2010). *Bronfenbrenner's ecological theory of development*. (Web Photo).

Retrieved from <http://early-childhood-resources.com/2010/05/reflection/>

Figure 2



Retrieved from: <http://whatmakespeopletick.blogspot.com/2010/07/bronfenbrenners-ecological-systems.html>.

Chapter 3

Methodology

This chapter will describe the research design for this study including the research setting, sampling methods, sample, instruments and the procedure for data collection and data analysis. This study used a descriptive cross-sectional design to examine the relationships among perceived school climate, perceived bullying behaviors, psychosomatic complaints and visits to the nurses' office among school age children in grades 3 through 12.

Design

This study is an explanatory study. The research questions hypotheses were tested using independent t-tests and multiple linear regression analysis.

Research Setting

The subjects were recruited from three public schools in a suburban community in central New Jersey. The settings consisted of one elementary school, one middle school and one high school. The demographic makeup of the community is considered middle to upper-middle class; the mean family income is \$96,000/yr and median home prices are \$507,718. The majority (92.1%) of the residents in the community are Caucasian (<http://www.city-data.com>).

The Sample

The ages of the students in the schools ranged from 8-18 years of age. There are approximately 90 elementary students in grades 3-5, 794 middle school students and 1,445 high school students or a total of 2,029 students (www.nces.ed.gov). Surveys were

distributed to all the students in grades 3-12 whose parent returned a signed consent form. Questionnaires were distributed during health and/or physical education class. An explanation of the study and a copy of the assent form were included in the questionnaire packet (Appendix B) along with: a) an explanation of the study purpose and an invitation to participate; b) an assurance of confidentiality; c) a summary of risks and benefits; and d) the instructions for completion of the survey. Each classroom teacher was given contact information for the Principal Investigator, Rutgers University IRB and information for students who may suffer emotional difficulties as a result of participation and need to speak to someone at the school. Parental consent was obtained prior to student participation (Appendix C). Assent was obtained from the students prior to individual participation in the study.

There were a total of 222 participants including 70 elementary students, 34 middle school students and 118 high school students. There were 82 males (36.9%) and 140 females (63.1%). (See Table 1).

Statistics

Power analysis was conducted a priori to determine sample size using G power program for t-tests and regression analysis. For regression analysis, a medium effect size of $r^2 = .50$, was estimated based on reported betas of previous studies (.20, .56 and .73), with an average beta of .49 (Burns et al., 2003; Davidson et al., 2008; Davidson & Khmelkov, 2003; Haugland & Wold, 2001; Wolke, Wood, Bloomfield & Karstadt, 2001). Based on three predictor variables, a sample size of 119 was needed for regression analysis. For t-test a medium effects size of 0.5 with power $(1 - \beta \text{ err prob}) = 0.95$ a

sample size of 111 was needed for t-test. Thus, a minimum sample size of 119 was needed to achieve sufficient power for regression analyses and t-tests.

Instruments

Demographics Questionnaire

The following demographic data and participant characteristics were collected to describe the study sample: age, gender and grade in school (Appendix D).

Peer Relations Questionnaire (PRQ)

The PRQ questionnaire was used to obtain an approximation of the prevalence of bullying in each school (Appendix F). The PRQ assesses the prevalence of behaviors and attitudes among students, who bully others, are bullied by others and those who act pro-socially (Rigby & Slee, 1993). Pro-socially is defined as, behaviors that benefit others as a whole such as helping, sharing, cooperating, and volunteering (Mooij, 1999; Rigby & Slee, 1993). The PRQ is a paper and pencil questionnaire, which contains 20 questions in a Likert scale format ranging from 1 = Never, 2 = Once in a while, 3 = Pretty often and 4 = very often. The questionnaire contains 3 subscales and several supplemental items. There are 3 subscales: 1) Bully scale; 2) Victim scale and 3) Pro-social scale (Rigby & Slee, 1993). The questions related to the bully scale are questions 4, 9, 11, 14, 16 and 17. The questions related to the victim scale are questions 3, 8, 12, 18 and 19. Finally, the questions related to the pro-social behavior scale are 5, 10, 15 and 20. Therefore, the filler items are 1, 2, 6, 7 and 13 (Rigby & Slee, 1993).

A score of a 4 or 5 in the bullying subscale would indicate that the individual participates in being the perpetrator: a score of 4 or 5 in the victim scale would indicate

that the individual is a victim of bullying and a score of 4 or 5 in the pro-social scale would indicate that the individual promotes pro-social behaviors. These scales are reported to be distinct from each other and to have adequate internal consistency reliability (Rigby & Slee, 1993).

The PRQ was developed in Australia and therefore the wording was designed for Australian children. Certain vocabulary on the PRQ could be difficult for an American child to interpret and therefore permission was obtained from Dr.'s Rigby and Slee to revise selected questions in the BPQ instrument to make them easier for American children to understand.

Reliability & Validity of the PRQ

Cronbach's alpha was used to assess the internal consistency and reliability of the PRQ (Rigby & Slee, 1993). The alpha coefficients for the 20 item PRQ were as follows: Bully Scale .78, Victim Scale .86 and Pro-social scale .74 (Rigby & Slee, 1993; Cross et al., 2009). The internal consistency of each scale exceeded .70 and may therefore be regarded as adequate. The Cronbach alpha coefficient for the victimization scale was moderately high .83 for the five item victim scale (Pellegrini & Long, 2002). Rigby (1998) reports good internal consistency for the victimization scale ($\alpha = .77$). Pellegrini and Long (2002) performed a test-retest reliability in which reliability was .85 for victim scale and .76 for bully scale. Peterson & Rigby (1999) found the victim scale reliable, with an alpha coefficient of .85.

In a study by Bond, Wolfe, Tollit, Butler, Dip & Patton, (2007) the researchers established concurrently validity when comparing the Gate House Bullying Scale (GBS) to the PRQ. There was consistently moderate agreement in responses between the GBS

and the PRQ for bullying and specific types of bullying behaviors (Bond et al., 2007). Rigby & Slee (1993) reported significant correlations between the three PRQ subscales and happiness, school enjoyment, self-esteem and family functioning, which substantiate construct validity.

The School Community Survey

For the purposes of this study, a subjects score on the School Community Survey was used to assess the prevalence of attitudes towards school and school climate by students who are bullied, bully others and those who act pro-socially. The School Community Survey was adapted from the School as a Caring Community Profile-II (SCCP II) (Appendix E). The School Community Survey measures a number of theoretically important aspects of school culture including: 1) whether the school climate is safe, supportive, and engaging for students; 2) whether staff participates in supportive collegial relationships; and 3) the extent to which the school connects students and families in support of student learning (Davidson et al., 2008). Davidson et al., (2008) presented both theoretical and empirical rationale for their selection of the specific aspects of school culture, climate, and the scales used in the SCCP-II. The instrument can be used as a cross-sectional or longitudinal assessment (Davidson et al., 2008). The instrument is easy to use and interpret which is in accordance with Hully et al (2007). The SCCP-II survey consists of three forms used to triangulate the information between the students, parents, and teachers and compare the similarities and differences between the individual groups (Davidson et al., 2008). SCCP-II surveys measure whether the school climate is safe, supportive, and engaging for students and whether students experience positive relationships with peers and faculty/staff.

The School Community Survey is a paper and pencil questionnaire, which contains 20 questions in a Likert scale format ranging from 1 = Disagree a lot, 2 = Disagree a little, 3 = Neither agree nor disagree, 4 = Agree a little and 5 = Agree a lot.

Elias (2011) made minor modifications to the SCCP-II to address organizational and staff issues. In its present form, the instrument is now referred to as the School Community Survey. The School Community Survey was used in a study of 232 schools throughout the state of New Jersey among children in grades 3-12, from 2006 to 2010.

Reliability & Validity

This questionnaire is designed to assess participant's perceptions of school as a caring community. Reliability alphas in three United States samples range from .73 to .86 for students (Character Education Partnership, CEP, 2010).

Subscale I:

- 1. Perceptions of student respect, student sample $\alpha = .7533$
- 2. Perceptions of student fellowship and belonging student sample $\alpha = .8144$
- 3. Perceptions of student's shaping their environment α student sample $\alpha = .8590$.
- Overall subscale I: $\alpha = .9424$.

Subscale II;

- 1. Perceptions of support and care by and for faculty and staff student sample $\alpha = .7990$ (standardized $\alpha = .8359$)
- 2. Perceptions of support and care by and for parents student sample $\alpha = .6988$ (standardized $\alpha = .7300$).

The two dimensions of social climate scales, the Student Safety and Faculty Support for and Engagement of Students, have demonstrated consistently high to excellent internal consistency. The Cronbach alphas range from .70 to .96. Only students' perceptions of faculty/staff support registered an alpha of .67 (Davidson et al., 2008). A Cronbach alpha of .70 is considered acceptable and .80 is considered excellent (Hully et al., (2007). Therefore, the School Community Survey is a reliable instrument.

Davidson et al., (2008) report that the instrument was developed based on the SCCP-II's conceptual model. The SCCP-II measures several constructs. The first construct is a safe, supportive, and engaging climate (Davidson et al., 2008). Davidson et al., (2008) defines this as the essential condition needed in order for effective learning or human growth to occur. Davison et al., (2008) gave multiple empirical evidence for the concept of a safe, supportive and engaging climate such as students who are exposed to high levels of peer bullying and violence are less likely to engage in effective learning or succeed academically (Davidson et al., 2008). Relationships of caring and trust have been linked to improved student outcomes. Also, faculty and staff need to provide a caring and supportive environment for a variety of learners (Davidson et al., 2008). Derived from these findings, the SCCP-II instrument assesses two dimensions of social climate; (1) Student Safety (as perceived by the students and faculty/staff) and (2) Faculty/Staff Support for and Engagement of Students (as perceived by faculty/staff and students) (Davidson et al., 2008). The next aspect of school climate/culture is intentional school culture of excellence and ethics (Davidson et al., 2008). Davidson et al. provide support for the idea that staff practices towards students affect how students learn and develop socially. Therefore, the SCCP-II measures the construct of intentional school

culture of excellence and ethics through schoolmates' behaviors of excellence and ethics, which assesses the perceptions of peers by students (Davidson et al., 2008).

To investigate construct validity, the researchers looked at whether the items support the operationally defined theory and concepts. Based on the empirical and theoretically expected relationships two hypotheses emerged: 1) that school climate and student experiences of character development scales are able to predict the indicators of students performance and moral character and 2) experiences of character education and students character would be expected to be positively correlated (Davidson et al., 2010).

Convergent and discriminate validity were examined by looking at bivariate correlations in the student and faculty samples. The patterns of relationships were consistent with what would be expected theoretically. For example, Students' Safety Scale had a small positive correlation with Students' Perceptions of Faculty Practices ($r = .25$ and $.27$) however it had a moderate positive correlation with peer/student behaviors ($r = .43$ and $.48$) (Burns et al., 2003).

The SCCP-II has been modified and used in a variety of studies for specific areas of interest such as, developing positive and productive relationships ($\alpha = .82$) and safe, supportive and engaging climate: student safety ($\alpha = .86$) (Davidson et al., 2010). Therefore, the SCCP-II has demonstrated both adequate reliability and validity in measuring school climate.

Psychosomatic Symptoms Questionnaire

The Psychosomatic Symptoms Questionnaire was adapted from the Health Behavior in School-Age Children Questionnaire (HSBC) (1989) (Appendix D). The HSBC data is used to examine different perspectives of health related behavior and its causes among young people (Currie et al., 2002). The tool, developed from “the socialism perspective”, focuses on the influences of various areas related to young people’s health such as family, school, friends and media (Currie et al., 2002). Health related behaviors are also thoroughly explored (Currie et al., 2002). The HSBC survey includes a core set of questions covering psycho-social adjustment including mental health, and peer and parental relationships (Currie et al., 2002). The survey questions cover a wide range of health related questions including psychosomatic symptoms (Currie et al., 2002).

Reliability & Validity

The reliability and validity of the HSBC has been examined numerous times and has been found to be both reliable and valid (Eriksson & Sellstrom, 2010; Haugland & Wold, 2001). Haugland & Wold (2001) assessed the content validity and test-retest reliability of the HSBC and found that all items on the symptoms checklist had good face validity and adequate test-retest reliability. Previous analyses of the instrument have also indicated satisfactory reliability with a Cronbach’s alpha coefficient of .82 (Eriksson & Sellstrom, 2010). Therefore, the HSBC symptoms subset is both valid and reliable.

Reliability of revised PRQ & SCS

A pilot study was performed to determine reliability for the revised instruments among students in grades 3-12. One boy and one girl from each age group were asked to participate. Verbal parental consent was obtained and two second graders, one seventh, one eighth grader, one 11th, and one 12th grader participated. The results of the pilot revealed, acceptable reliability alphas for the Health Behaviors in School-age Children Questionnaire of .85, School Community Survey = .88 and Peer Relations Questionnaire = .84.

Data Collection

The Institutional Review Board (IRB) at Rutgers, The State University of New Jersey, approved the study proposal. The study proposal was also submitted to the district's board of education and was approved during the May school board meeting. Once IRB and school board permission was secured. A consent form was sent home with each child, in order to obtain parental permission for their child's participation in the study. Upon return of the consent forms, the classroom teachers made a list of those students who had parental permission to participate. On the day of the study, the children with parental permission were given a copy of the questionnaire packet that contained: 1) an assent form, 2) explanation of the study and 3) an assurance of confidentiality. Those younger children whose parents did not consent for their child's participation, were asked to come to the school nurses office for routine screening of height and weight while their classmates completed the survey. The Principal Investigator collected the questionnaires from each participating school at the end of the school day.

Data Analysis Plan

A descriptive analysis of the demographic data including means and standard deviations was used to describe the sample characteristics. Frequency tables, histograms, and scatterplots were used to assess distributions of study variables for normality. Tests for skewness and kurtosis were conducted and data was inspected for inconsistencies, outliers, and wild data entry codes. Regression analysis was used to analyze and compare the variability of scores between conditions and within conditions and to discover if the independent variables had a significant effect on the dependent variables. The researcher corrected non-normal variables found to be outside the limits of skewness or kurtosis through rank transformation and made them normally distributed. A Shapiro-Wilk test was performed and the results of the test confirmed that the data was normally distributed, with regard to gender (.08), bullying behaviors (.15), psychosomatic symptoms (.11), visits to the health office with psychosomatic complaints (.17), perceived school climate (.09).

A two-tailed test of significance set at .05 was used to reduce the risk of committing a Type I error i.e. reducing the likelihood of gaining a false positive result (Polit, 2010). The statistical analyses were performed using Statistical Package for the Social Sciences (SPSS) version 19.0 for Windows (IBM SPSS Statistics 2010).

Chapter 4

Analysis of the Data

The purpose of this study was to examine the relationships among perceived school climate, self-reported psychosomatic symptoms, visits to the school nurse for reported

psychosomatic symptoms and bullying behaviors among students' grades 3-12. Data was collected from a sample of 222 students from grades 3-12. The following instruments were used in the study: a) a demographic questionnaire, developed by the investigator was used to collect information on age, gender and grade; b) the School Community Survey (SCS) was used to assess the prevalence of attitudes towards school and school climate by students who are bullies and those who are bullied by others; c) the Psychosomatic Symptoms Questionnaire adapted from the Health Behavior in School-Age Children Questionnaire (HSBC) (1989) was used to determine types of symptoms, frequency of symptoms, and if the students pursued assistance from the school nurse; and d) the Bullying Prevalence Questionnaire (BPQ) was used to obtain an approximation of the perceived prevalence of bullying in each school. Data analysis findings are presented in this chapter.

Presentation of Descriptive Characteristics of Respondents'

There were 2,029 questionnaires distributed to the three schools. Of these, 222 surveys (10.9%) were completed. The age of the students in the study ranged from eight to eighteen years of age. There were 140 girls (63.1%) and 82 boys (36.9%).

Demographic data describing sample are presented in Table 1.

Table 1

Demographic Characteristics of the Sample

Grade	N	%
3 rd	20	9
4 th	29	13.1
5 th	21	9.5
6 th	12	5.4
7 th	11	5.0
8 th	11	5.0
9 th	54	24.3
10 th	41	18.5
11 th	12	5.4
12	11	5.0

Instrument Reliability

For this sample, the alpha coefficient for the 7-item Health Behavior in School-Age Children Questionnaire was .76, the alpha coefficient for the 20-item School Community Survey was .74 and the alpha coefficient for the 20-item Bullying Prevalence Questionnaire was .80. According to Nunnally (1978) the alpha coefficient measures the extent to which the variables are positively related to each other. Nunnally (1978), states that an alpha of .70 or higher is considered reliable. Most psychometric tests fall within .75 and .83 with some as high as .90 (Nunnally, 1978).

Research Question and Associated Hypotheses

This study tested the association of common psychosomatic health symptoms with episodes of bullying and perceived negative school climate in school age children.

The following hypotheses were tested:

H1: Perceived bullying behaviors significantly predict reports of psychosomatic complaints in school age children.

H2: Perceived bullying behaviors will significantly predict visits to the school health office for psychosomatic symptoms.

H3: Schools with a perceived negative school climate will significantly predict reports of bullying behaviors.

H4: Reports of psychosomatic symptoms related to perceived bullying behaviors significantly predict negative perceived school climate.

The following research questions were tested:

1. Are there differences between boys' and girls' perceptions of school climate?
2. Are there differences between boys' and girls' self-reported incidences of bullying?
3. Are there differences between boys' and girls' visits to the school health office with psychosomatic complaints?

Normal Distribution

It is worth noting that the skewness and kurtosis for some variables were originally outside the "acceptable" range of -1 through +1. The researcher corrected variables found to be outside the limits of skewness or kurtosis through rank transformation. Rank transformation is an active transformation which is used to select the top or bottom rank of data (Pallant, 2010). The researcher uses the rank transformation to choose the smallest or biggest values. Rank transformation results in a normal distribution from any non-normal distribution. The statistical analyses were performed using Statistical Package for the Social Sciences (SPSS) version 19.0 for Windows (IBM SPSS Statistics 2010).

Intra-school comparisons

There was insufficient power to look at the differences between schools and intra-school comparisons. The intra-school correlation coefficient is $-.40$. The intra-class correlation is negative whenever the variability within groups exceeds the variability across groups. The figure indicates that multilevel modeling is impossible.

Hypothesis 1 – Perceived bullying behaviors significantly predict reports of psychosomatic complaints in school age children.

A regression analysis was performed to test if reports of bullying behaviors predict reports of psychosomatic complaints in school age children. The results of the regression analysis are presented in Table 2.

Table 2

Regression Analysis –Dependent Variable - Reports of Psychosomatic Complaints

Model	Unstandardized		Standardized	t	Sig.
	Coefficients		Coefficients		
	B	Std. Error	Beta		
(Constant)	72.58	8.20		8.85	.00
reports of bullying episodes	.349	.064	.345	5.46	.00*

*P < .05

As Table 2 indicates, reports of bullying episodes significantly predict reports of psychosomatic complaints in school age children.

Hypothesis 2 – Perceived bullying behaviors will significantly predict visits to the school health office for psychosomatic symptoms.

A regression analysis was performed to test if reports of bullying behaviors predict reports of psychosomatic complaints in school age children. The results of the regression analysis are presented in Table 3.

Table 3

Regression Analysis-Dependent Variable - Visits to the School Health Office for Psychosomatic Symptoms

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	87.42	7.45		11.74	.00
Episodes of bullying	.216	.058	.243	3.72	.00*

*P < .05

As Table 3 indicates, episodes of bullying significantly predict visits to the school health office for psychosomatic symptoms.

Hypothesis 3 – Schools with a perceived negative school climate significantly predict reports of bullying behaviors.

A regression analysis was performed to test if schools with negative perceived school climate predict reports of bullying behaviors. The results of the regression analysis are presented in Table 4.

Table 4

Regression Analysis – Dependent Variable - Reports of Bullying Behaviors

Model	Unstandardized		Standardized	t	Sig.
	Coefficients		Coefficients		
	B	Std. Error	Beta		
(Constant)	129.79	9.01		14.40	.00
negative perceived school climate	.644	.275	.156	2.34	.02*

*P < .05

As Table 4 indicates, negative perceived school climate significantly predict reports of bullying behaviors.

Hypothesis 4 - Reports of psychosomatic symptoms related to perceived bullying behaviors significantly predict negative perceived school climate.

A regression analysis was performed to test if reports of psychosomatic symptoms predict bullying behaviors and negative perceived school climate. The results of the regression analysis are presented in Table 5.

Table 5

Regression Analysis Dependent Variable - Reports of Psychosomatic Symptoms

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	153.92	8.66		17.77	.00
negative perceived school climate	1.46	.265	.350	5.53	.00*

*P < .05

As Table 5 indicates, negative perceived school climate significantly predict reports of psychosomatic symptoms.

Research Questions:**1. Are there differences between boys' and girls' perceptions of school climate?**

Independent t-tests were performed to determine if there are differences between boys and girls perceptions of school climate. Boys rated the school climate significantly lower than the girls (See table 7). Since the probability is large (= .38), we use the t-value and probability for equal variances. The analysis yields significance at the .05 level (p= .00). Thus, we can conclude that there are differences between boys and girls perceptions of school climate. (See Table 6).

Table 6

Differences Between Boy's and Girls' Perceptions of School Climate

Gender	N	Mean	SD	t	df	P
Boys	82	-32.94	15.82	-3.01	219	.00*
Girls	140	-26.58	14.65			

$P < .05$

2. Are there differences between boys' and girls' self-reported bullying behaviors?

Independent t-tests were performed to test if there were differences between boys and girls self-reported of bullying behaviors. Boys' mean scores for reports of bullying behaviors were only slightly higher than girls'. Since the probability is large (= .41), we use the t-value and probability for equal variances. The analysis does not yield significance at the .05 level ($p = .06$). Thus, we can conclude that there are no differences between boys and girls self-reported bullying behaviors.

Table 7

Differences Between Boys' and Girls' Self-Reported Bullying Behaviors

Gender	N	Mean	SD	t	df	P
Boys	82	8.34	3.13	1.90	220	.06
Girls	140	7.58	2.75			

$P < .05$

3. Are there differences between boys' and girls' visits to the school health office with psychosomatic complaints?

Independent t-tests were performed to test if there were differences between boys and girls visits to the school health office. Boys' mean scores were higher than that of the girls' scores indicating boys spent more time in the health office than girls for psychosomatic complaints. Since the probability is large ($=.08$), we use the t-value and probability for equal variances. The analysis does yield significance at the .05 level ($p=.02$). Thus, we can conclude that there are differences between boys and girls visits to the school health office with psychosomatic complaints.

Table 8

Differences Between Boys' and Girls' Visits to the School Health Office

Gender	N	Mean	SD	t	df	P
Boys	82	8.48	2.85	2.28	220	.02*
Girls	140	8.04	2.86			

$P < .05$

SUMMARY

Reports of bullying behaviors were found to significantly predict reports of psychosomatic complaints in school age children. Bullying behaviors significantly predict visits to the school health office for psychosomatic symptoms. Negative perceived school climate significantly predicts reports of bullying behaviors. Negative perceived school climate significantly predicts reports of psychosomatic symptoms. In this study, there were significant differences between boys and girls perceptions of school

climate. There are no differences between boys and girls self-reported bullying behaviors. There are differences between boys' and girls' visits to the school health office with psychosomatic complaints.

Chapter 5

Discussion of the Findings

School administration, educators, government officials, law enforcement officials and school nurses are becoming increasingly aware of the effects bullying has on our youth. Overall, the findings in this study provide support for the hypotheses and findings previously reported in the literature. Specifically, the results showed a significant positive relationship between reports of bullying episodes and reports of psychosomatic complaints in school age children. Bullying has become a worldwide concern drawing the attention of researchers, healthcare providers, legislatures, news media, educators and law enforcement. The effects of bullying on the victims can have tragic consequences.

This study proposed four hypotheses and three research questions:

H1: Perceived bullying behaviors significantly predict reports of psychosomatic complaints in school age children.

H2: Perceived bullying behaviors will significantly predict visits to the school health office for psychosomatic symptoms.

H3: Schools with a perceived negative school climate will significantly predict reports of bullying behaviors.

H4: Reports of psychosomatic symptoms related to perceived bullying behaviors significantly predict negative perceived school climate.

The following research questions were tested:

1. Are there differences between boys' and girls' perceptions of school climate?
2. Are there differences between boys' and girls' self-reported bullying behaviors?
3. Are there differences between boys' and girls' visits to the school health office with psychosomatic complaints?

Findings

Bullying Behaviors and Psychosomatic Complaints

Hypothesis 1, perceived bullying behaviors significantly predict reports of psychosomatic complaints in school age children, was supported. This hypothesis was derived from the Ecological Systems Theory proposed by Bronfenbrenner, (1997). Bronfenbrenner (1997) states there is a direct relationship between the child, the school environment and their peers.

This study's findings showed a strong relationship between bullying behaviors and psychosomatic complaints. This finding supports the findings of previous studies that demonstrate a significant relationship between reports of bullying episodes and reports of psychosomatic complaints in school age children. Being bullied is a risk factor for children's health and psychological well-being (Fekkes, et al., 2009; Natvig, Albrektsen, & Qvarnstrom, 2001; Rigby 2003). Researchers have reported that victims of bullying exhibit multiple psychosomatic symptoms (Fekkes, et al., 2009; Natvig, Albrektsen, & Qvarnstrom, 2001; Rigby 2003). Similarly, researchers have demonstrated a link

between bullying, stress and psychosomatic symptoms (Hansen et. al., 2006). Symptoms of psychosomatic complaints are said to be somatomatized and often occur during periods of great stress and/or anxiety (Hansen et. al., 2006). Psychosomatic symptoms can have an effect on a person's mental health and general well-being (Hansen et. al., 2006).

The results of this study showed that children who reported perceived bullying behaviors had reports of psychosomatic symptoms. Feskes et al. (2006) and Gini (2008) had similar findings. In this study, the three most common psychosomatic symptoms reported by boys and girls visits to the health office were stomachache, headache and feeling dizzy. Similarly, Gini found that boys and girls top three psychosomatic complaints were headache, stomachache and sleeping problems.

Bullying Behaviors, Psychosomatic Complainants and Visits to the School Health Office

Hypothesis 2, perceived bullying behaviors will significantly predict visits to the school health office for psychosomatic symptoms was supported. This study's findings revealed a strong positive relationship between bullying behaviors and visits to the school health office for psychosomatic symptoms. Other psychosomatic symptoms that are closely related to bullying were also significant included, "difficulties sleeping", "feeling dizzy" and visits to the nurse were significant for reports of bullying behaviors (Fekkes et al., 2009; Gini, 2008). This finding supports the findings of previous studies that perceived bullying behaviors were positively related to psychosomatic complaints and visits to the school health office.

According to Borup & Holsten (2007), victims of bullying tended to visit the nurse more regularly and had more psychosomatic complaints (Borup & Holsten, 2007). According to one study, victims of bullying are more likely to visit the school nurse more often than children who are not victims (Cooper, Clements & Holt, 2012). Therefore, the results of this study support the hypothesis that there is a significant association between children who have perceived bullying behaviors and visits to the school nurse with psychosomatic complaints.

Negative Perceived School Climate and Bullying Behaviors

Hypothesis 3, schools with a perceived negative school climate will significantly predict increased reports of bullying behaviors. This hypothesis was derived from the theoretical proposition that schools with poor perceived school climate are more likely to experience bullying behaviors.

This study's findings showed a strong positive relationship between poorly perceived school climate and reports of bullying behaviors. The current findings support data from empirical studies, which consistently indicate that schools with a negatively perceived school climate have a significantly higher incidence of bullying than schools with a positively perceived school climate (Espelage & Swearer, 2011; Greene, 2008; Swearer, Turner, Gibbins & Pollack, 2008).

There is a strong body of research that supports the relationship between school climate and bullying. This study supports the hypotheses that there is an association with children who perceive the school climate as poor and perceived bullying behaviors. In a study by Barboza, et al. (2009) the researchers found that in a sample of 11-14 year old

adolescents there was a direct relationship to poorly perceived school climate and bullying. In a similar study by Nansel et al. (2001) regarding school climate and bullying, the authors found that children in grades 6-10 in schools with a poorly perceived school climate had an increase in bullying behaviors and victimization. Larger values are indicative of negative school climate, so students who scored high on this measure on the SCS were more likely to be associated with bullying. Khour-Kassabri (2004) also found that schools with poor perceived school climate had higher levels of peer victimization and bullying behaviors. Their results showed that school climate explained much more of the variance between schools and students' reports of victimization. The predictive power of school climate was highest for threats and moderate physical violence (31.55% and 24.62% respectively) and social-verbal and serious physical violence (22.45% and 20.13% respectively) (Khour-Kassabri, 2004).

Borup & Holsten (2007) predicted that schools with negatively perceived school climate would be positively associated with incidences of bullying. Although the overall perceptions of the schools were not negative, those individuals who reported bullying episodes did have a negative perception of the school climate. Other researchers have shown a strong association between bullying and school climate (Bandyopadhyay, Cornell & Konold, 2009; Khoury-Kassabri, Benbenishty & Astor, 2005; Meyer-Adams & Conner, 2008; Wilson, 2004). Kassen et al., (2004) found that school climate was significantly related to bullying. Kassen et al., (2004) reported that the less chaotic and the more academically focused the school, the lower the prevalence of bullying. Researchers have reported that in environments where there is perceived poor social support from adults there is an increase in bullying and victimization. (Demaray &

Malecki, 2003; Kassen et al., 2004; Unnever & Cornell, 2003). Hence, we can conclude from the results of this study that there is an association between schools with poor perceived school climate and reports of bullying behaviors.

Poorly Perceived School Climate and Reports of Psychosomatic Complaints

Hypothesis 4, the reports of psychosomatic complaints significantly predict negative perceived school climate, was supported. This study's findings showed a significant positive association between reports of psychosomatic symptoms and negative perceived school climate. The findings of this study support the idea that those students who perceive bullying behaviors also perceive a poor school climate (Barboza et al., 2009). Empirical evidence supports the notion that a perceived poor school climate supports bullying. Freeman (2012) examined an association between the perceived school climate and reports of psychosomatic symptoms. The participants were students, aged 13-15 years. Freeman (2012) found that there was a significant positive association between reports of psychosomatic symptoms and negative perceived school climate. Based on the findings of this study, we can conclude that there is an association between poor perceived school climate and reports of psychosomatic symptoms.

Differences between boys' and girls' perceptions of school climate

Research Question 1. Are there differences between boys' and girls' perceptions of school climate?

In the present study, there are differences between boys' and girls' perceptions of school climate. Boys were more than twice as likely as girls to perceive the school

climate as positive. This finding supports the findings of previous studies that there were differences between boys and girls perceptions of school climate

Way, Reddy, and Rhodes (2007) designed the study to exam if there are differences between boys and girls perceptions of school climate. In their study, participants were all primary school boys in Grades 3 to 7 and all secondary boys and girls in Grades 8-11. Based on the t-test, Way, Reddy, and Rhodes (2007) believe that there are differences between boys and girls perceptions of school climate

Muchen, Bradshaw, and Leaf (2010) used data from 1881 fifth-grade students who filled out a survey. They examined if there are differences between boys' and girls' perceptions of school climate. They found that boys and girls perceived school climate differently. The findings of this study support the empirical literature that boys and girls perceive school climate differently.

Differences between boys' and girls' self-reported perceived bullying behaviors

Research Question 2: Are there differences between boys' and girls' self-reported bullying behaviors? In the present study, there are no differences between boys' and girls' self-reported incidences of bullying. This finding does not support the findings of Tulloch and Nansel's studies that there were differences between boys' and girls' perceptions of school climate

Tulloch (1995) examined gender differences of students. Subjects were students who were drawn from Year 8 in seven New South Wales rural high schools. Tulloch found that there were differences in the level of bullying behavior of boys and girls. The researcher also found that there were differences in the type of bullying and in the gender

of the victim targeted by males and females. There were differences between boys and girls in self-reported incidences of bullying. Male victims were more likely to reject bullying and have a low level of social acceptance and confidence than female victims.

Nansel (2001) examined if there are differences between boys' and girls' self-reported incidence of bullying. They found that there were gender differences in self-reported incidences of bullying. Boys reported being physically bullied by their peers than girls (Nansel et al., 2001) and girls reported being targets of rumor-spreading and sexual comments than boys. Although the finding of this study did not support the findings of previous studies, there is need for further research to look at the bullying behaviors between boys and girls and their perceptions of bullying.

Differences between boys' and girls' visits to the school health office with psychosomatic complaints

Research Question 3: Are there differences between boys' and girls' visits to the school health office with psychosomatic complaints? In the present study, there were differences between boys' and girls' visits to the school health office with psychosomatic complaints. Boys' ($\bar{x} = 8.48$) reported more psychosomatic symptoms related visits to the health office than girls' ($\bar{x} = 8.04$). These findings support the findings of previous studies where there were significant gender differences in visits to the school health office with psychosomatic complaints.

Bettina, Barabas, and Boda (1997) designed a cross-sectional survey. In the study, the participants were students, aged 8-18 years consisting of 49.3% men and 50.7% women. The response rate was 82.5%. The researchers collected data by using a questionnaire

containing items designed to measure visits to the school health office with psychosomatic complaints. Bettina, Barabas, and Boda (1997) found that there were significant gender differences in visits to the school health office with psychosomatic complaints.

Simonsson, Nilsson, Leppert, and Diwan (2008) used a cross-sectional survey in Sweden. The participants were 4013 students in both private and public schools, aged 16-19 years. Simonsson, Nilsson, Leppert, and Diwan (2008) found that there were differences between boys and girls visits to the school health office with psychosomatic complaints. The findings in this study support the findings of previous research that there are differences between boys' and girls' visits to school nurse with psychosomatic complaints.

Discussion

The top five symptoms for the boys were bad temper/ cranky, feeling low, feeling nervous, headache and difficulties sleeping. The top five symptoms for the girls were, feeling nervous, bad temper/ cranky, headache, feeling low and stomachache. However, the top three symptoms for visiting the nurse were the same for boys and girls and included stomachache, headache and feeling dizzy.

When girls and boys completed the School Community Survey the results were similar for the following questions:

1. "Students treat classmates with respect". Both boys (31.7%) and girls (30.7%) disagreed.
2. "When students do something hurtful they try to make up for it". Both boys

(37.8%) and girls (42.8%) disagreed

3. “Students try and get other students to follow the rules”. Both boys (43.9%) and girls (47.9%) disagreed.
4. “Students work well together”. Boys (59.7 %) and girls (52.2%) agreed.
5. “Students pick on other students”. Boys (47.5 %) and girls (51.4 %) agreed.

However, the results differed when boys and girls were asked the following questions.

1. “Students exclude those who are different.” Girls found this commonly occurred almost 13% more often than did boys.
2. “Students resolve conflicts without fighting, insults or threats.” Girls were 10% more likely to see conflict resolution in the form of direct or indirect violence.
3. “Students like being at this school.” Girls were almost 20% more likely to think that students did not like being at their school.
4. “Students here have a lot of school pride.” There was a 15% difference in perception of school climate on this question between boys and girls.

There are currently no studies that compare boys’ and girls’ perceptions of school climate. The findings of this study support the research which indicates that in schools with poor perceived school climate there will also be reported bullying behaviors and a poor perception of the school climate (Sebring, Allenworth, Luppescu & Easton, 2010; Espelage & Swearer, 2004; Khoury-Kassabri et al., 2004).

Both boys and girls completed the Bullying Prevalence Scale, and had similar responses for the questions:

1. “I get called names”, boys (51.2%) and girls (57.2%).

2. "I give kids weaker than me a hard time", boys (20.6%) and girls (15.1%).
3. "I fool around in class", boys (75.7%) and girls (71.4%).
4. "I get picked on by others", boys (48.8%) and girls (44.3%).
5. "I like to make others scared of me", boys (13.4%) and girls (11.0%).
6. "I like to show others I am the boss", boys (14.6%) and girls (16.4%),
7. "I enjoys upsetting kids weaker than me, someone I can easily beat", boys (6.1%) and girls (2.1%).
8. "Others make fun of me", boys (50%) and girls (45%).

However, when asked the following questions, girls and boys differed greatly:

1. "I feel I can't trust others". Girls were 22% more likely to not trust others than boys.
2. "I am part of a group that goes around teasing others". Boys were twice as likely to be a part of a group that teases others.
3. "Others leave me out on purpose". Boys were 10% more likely to feel that they were left out on purpose than girls who were surveyed.
4. "I get in fights at school". Again, boys were almost twice as likely as girls to engage in physical altercations at school.
5. "I like to get in fights with someone I can easily beat". Boys 10% more likely to fight someone they can easily beat.
6. "I get hit or pushed around by others". Boys were more than 20% more likely to be hit or pushed around by others.

There is no empirical evidence to support the findings that boys were more often a part of a group that teases, or the finding that girls were more likely not to trust others, or that boys are more likely to feel they are left out on purpose.

When analyzing the regression analysis results, it was determined that bullies were spending more amounts of time in the nurses' office. The empirical evidence does indicate that bullies experience an increased risk of depression, suicidal ideations and suicide attempts as compared to their peers who are not involved in bullying (Klomek et al., 2007; Salmon & Smith, 1998).

Chapter 6

Summary, Conclusions, Implications and Recommendations

The present explanatory study was designed to investigate the relationship of bullying, school climate and psychosomatic complaints at the school health office. The framework for this study was guided by concepts and propositions derived from empirical and theoretical literature as developed by Bronfenbrenner (Bronfenbrenner, 1977; Espelage & Swearer, 2004; Lee, 2011; Meyer-Adams & Conner, 2008). According to this proposed theoretical framework, the external factor of bullying was proposed to account for a statistically significant proportion of the variance in psychosomatic complaints. Self-reported bullying behaviors were proposed to account for a statistically significant proportion of the variance in psychosomatic complaints at the school health office. The external factor of negative perceived school climate was proposed to account for a statistically significant proportion of the variance in increased reports of bullying behaviors. The external factors of bullying behaviors and poorly perceived school

climate were proposed to account for a statistically significant proportion of the variance in psychosomatic complaints.

Bullying in this study was defined as, an imbalance of power where the perpetrator is bigger, stronger, older or even more popular than the person being picked on (Juvonen & Gross, 2008; Lamb et al., 2009; Merrel et al., 2008; Pepler, & Craig, 2009).

In this study, school climate refers to the overall “feel” of the school. A positive school climate is characterized by a physical environment that is welcoming and conducive to learning (Sebring, Allenworth, Luppescu & Easton, 2010). In a positive school climate, students feel safe everywhere on school property and classrooms are inviting (Sebring, Allenworth, Luppescu & Easton, 2010). In a supportive school climate; teachers and students actively communicate with one another, students have opportunities to participate in the decision-making, teachers are collegial and students and teachers are instructed on how to prevent and resolve conflicts (Sebring, Allenworth, Luppescu & Easton, 2010). Another factor that influences school climate is an affective environment that promotes self-esteem and a sense of belonging (Sebring, Allenworth, Luppescu & Easton, 2010) influences positive school climate.

Children who are victims of bullying frequently suffer from a variety of psychosomatic complaints (Borup & Holstein, 2007; Gini & Pozzoli, 2009; Meland et. al., 2010). This means that the symptoms and experiences of the victim are likely related to stress or emotions rather than an actual physical illness (Gini & Pozzoli, 2009). Symptoms of psychosomatic complaints are said to be somatomatized and often occur during periods of great stress and/or anxiety (Hansen et. al., 2006). Psychosomatic

symptoms can have an effect on a person's mental health and general well-being (Hansen et. al., 2006). Researchers have found a relationship between bullying, stress and psychosomatic symptoms (Hansen et. al., 2006).

Based on the above mentioned theory and study constructs, this study tested the following hypotheses and research questions:

Hypotheses

H1: Perceived bullying behaviors significantly predict reports of psychosomatic complaints in school age children.

H2: Perceived bullying behaviors will significantly predict visits to the school health office for psychosomatic symptoms.

H3: Schools with a perceived negative school climate significantly predict reports of bullying behaviors.

H4: Reports of psychosomatic symptoms related to bullying significantly predict negative perceived school climate.

Research Questions

1. Are there differences between boys' and girls' perceptions of school climate?
2. Are there differences between boys' and girls' self-reported incidences of bullying?
3. Are there differences between boys' and girls' visits to the school health office with psychosomatic complaints?

The sample consisted of 222 boys and girls between the ages of 8 and 18, with a mean age of 13.3 years of age. Approximately two thirds of the sample was girls (63.1%) with boys at (36.9%). Approximately one fourth of the respondents were in the 9th grade (24.3%).

Data collection included descriptive and inferential statistics. The multivariate hypotheses were tested using multiple linear regression and the research questions were tested using t-test to test the differences between boys and girls.

- Hypotheses 1, which stated, perceived bullying behaviors significantly predict reports of psychosomatic complaints in school age children was supported, suggesting that children who experience bullying incidences also have psychosomatic symptoms.
- Hypotheses 2, which stated, perceived bullying behaviors will significantly predict visits to the school health office for psychosomatic symptoms was supported suggesting that children who experience bullying behaviors also frequent the school health office with psychosomatic complaints.
- Hypotheses 3, which stated, schools with a perceived negative school climate significantly predict increased reports of bullying behaviors was supported, suggesting that those who experienced incidences of bullying perceived the school climate negatively.
- Hypotheses 4, which stated, reports of psychosomatic symptoms related to bullying significantly predict negative perceived school climate was supported, suggesting that children who perceived the school climate negatively were more

likely to be bullied and frequent the school health office with psychosomatic complaints.

- Research question 1, which asked, are there differences between boys and girls perceptions of school climate was confirmed, the results showed that there are differences between boys and girls perceptions of school climate.
- Research question 2, which asked, are there differences between boys and girls self-reported incidences of bullying, was not confirmed, the results showed that there are no differences between boys and girls self-reported incidences of bullying.
- Research question 3, which asked, are there differences between boys and girls visits to the school health office with psychosomatic complaints was confirmed the results showed that there are differences between boys and girls visits to the school health office with psychosomatic complaints.

Frequencies were determined for boys and girls as they relate to psychosomatic symptoms. The top five symptoms for boys were feeling nervous, headache, bad temper/cranky, headache, feeling low and difficulties sleeping. The top five symptoms for girls were feeling nervous, bad temper/cranky, headache, feeling low and stomachache. However, the top three symptoms for visiting the school health office were the same for boys and girls; these were stomachache, headache and feeling dizzy.

Frequencies were also determined for boys and girls as they relate to self-reported incidences of bullying. The top five self-reported bullying incidences for boys were: 1) “others leave me out of things on purpose”, tied for second were; 2) “others make fun

of me” and “I feel I can’t trust others”; 4) “I get called names; 5) “I get hit and pushed around by others”. The top five for the girls were: 1) “I feel I can’t trust others”; 2) “I get called names”; 3) “Others make fun of me”; 4) I” get picked on by others”; 5) “others leave me out of thing on purpose”. Finally, frequencies for self-reported perpetrators of bullying were determined for boys and girls and boys were self-proclaimed bullies more than twice as often as girls were.

Limitations

Two aspects of the present study limit the generalizability of the findings. First, the researcher used self-reported scores. Self-report studies have validity problems. Respondents may exaggerate symptoms in order to make their situation seem worse, or they may under-report the severity or frequency of symptoms in order to minimize their problems (Kert, Coddling, Tryon & Shiyko, 2009). There are also various biases that may affect the results, like social desirability bias (Kert, Coddling, Tryon & Shiyko, 2009).

Second, the researcher gathered the data by using a cross-sectional design. Experiences affecting one’s perceived climate can occur over time. Cross-sectional studies can say that the two are related somehow, but they cannot positively determine if one caused the other (Petra, 1994). Cross-sectional studies also fail on the part of confounding factors (Petra, 1994). Additional variables may affect the relationship between the variables of interest but not affect those variables themselves (Petra, 1994). Thus, it would be useful for researchers to use a longitudinal research design to examine causal effects.

Additional weaknesses include the fact that data collection took place at the end of the

school year. This limited the number of consent forms that were signed because there was a limited time-frame for return of the signed consent forms. In the high school, the seniors were unofficially told that the survey was about “drug and alcohol consumption” hence, they did not want to participate in the study.

An additional weaknesses involved the the Peer Relations Questionnaire. This tool did not measure specific episodes of bullying therefore the researcher was unable to determine how frequently the individual experienced the perceived bullying behaviors. In addition the School Community Survey had a 3 (neither agree nor disagree) which could cause a halo effect when subjects consistently choose the same response. So a forced choice scale might be preferable for future studies.

Implications for Nursing

The results of this study support the relationship among poor perceived school climate, self-reported incidences of bullying and psychosomatic symptoms with visits to the school health office. As expected, children who self-reported incidences of bullying had a poor perception of school climate and an increase in visits to the school nurse with psychosomatic complaints. An additional finding that bullies also had an increased number of psychosomatic complaints and visits to the health office has implications for further research.

These findings have many implications for school nurses as well as school administrators. School officials need to be aware of the effects of school climate on bullying. If students feel the climate of the school is conducive to bullying and there are no repercussions for their actions then they will be more likely to participate in that kind

of behavior. It is the responsibility of school administrators to implement a zero tolerance policy for any form of bullying, intimidation or harassment. Additionally school nurses can monitor the visits to the school health office for bullying related symptoms and advise administrative officials accordingly. School nurses are in a position to discuss with children they suspect are victims, about what is happening to them, counsel them and inform administration as necessary. Identifying victims and bullies by keeping track of visits to the nurse is a one-way school nurses can keep an eye out for who might be involved with bullying. The school nurse can collaborate with teachers, guidance counselors, school appointed mental health professionals, and even law enforcement to combat bullying. The school nurse can also lead prevention efforts, contribute to the school wide or district wide anti-bullying safety team, train faculty and staff on how to identify bullying and how to intervene, and work with individual students and their families. In school districts where school nurses have not been asked to participate in the anti-bullying process these nurses need to feel empowered to intervene, as they are truly on the front lines of the problem and in an excellent position to help.

In accordance with the IOM report (Institute of Medicine) (2010), nurses need to be allowed to practice in the full capacity of their education. School administrators' needs to be educated regarding the unique contributions school nurses can make to the anti-bullying process. By allowing school nurses the opportunity to contribute to the perceptions of a healthy school climate they can also contribute to the development of anti-bullying curricula.

If the school nurse is perceived by the children and administration as someone who is supportive and who can intervene when necessary, a more cohesive school environment may be achieved.

Overall Summary

This study's findings showed a strong relationship between bullying episodes and psychosomatic complaints. This finding supports the findings of studies that there was a significant relationship between reports of bullying episodes and reports of psychosomatic complaints in school age children.

This study's findings revealed a strong positive correlation between episodes of bullying and visits to the school health office for psychosomatic symptoms. This finding supports the findings of above studies that bullying episodes were positively related to psychosomatic complaints and visits to the school health office.

This study's findings showed a strong positive correlation to poor perceived school climate and reports of bullying behaviors. The current findings support data from, empirical studies, which consistently indicate that schools with a perceived negative school climate have a significantly higher incidence of bullying than schools with a positively perceived school climate (Espelage & Swearer, 2011; Greene, 2008; Swearer, Turner, Gibbins & Pollack, 2008).

This study's findings showed a significant positive association between reports of psychosomatic symptoms related to bullying and negative perceived school climate. The findings of this study support that those students who are bullied are more likely to

perceive the school climate as poor and to spend more time in the nurses' office with psychosomatic complaints.

In the present study, there are differences between boys' and girls' perceptions of school climate. This finding supports the findings of Muchen, Bradshaw, and Leaf's studies that there were differences between boys' and girls' perceptions of school climate

In the present study, there are no differences between boys' and girls' self-reported incidences of bullying. This finding does not support the findings of Tulloch and Nansel's studies that there were differences between boys' and girls' perceptions of school climate

In the present study, there are differences between boys' and girls' visits to the school health office with psychosomatic complaints. This finding supports the findings of studies that there were significant gender differences in visits to the school health office with psychosomatic complaints.

Recommendations for Further Study

This study provided some empirical support for the theoretical linkages among, school climate, bullying behaviors and psychosomatic symptoms in school age children. Based on the results of this study, the following suggestions are made for future research:

1. The present study should be replicated with a larger and more diverse population of students to determine whether the relationships demonstrated are consistent across studies.

2. Since data revealed bullies spend an increased amount of time in the school health office a further investigation of this phenomenon should be performed.
3. Develop a screening instrument that can quickly help the school nurse identify victims or perpetrators of bullying early.
4. Since the data revealed there was a difference between boys and girls in several aspects of bullying and school climate, further investigation of this phenomenon is warranted.
5. Since the data revealed that children who are victimized and the perpetrators of bullying seek refuge with the school nurse, then a study designed to look at school nurses perceptions of preparedness for combating, reporting and intervening bullying within their schools is warranted.
6. Since the data revealed that children who are victimized and the perpetrators of bullying seek refuge with the school nurse, then a study designed to see how supportive the school nurses feel the administration is regarding their contributions to combating bullying within the district is necessary.

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Appendix A

Author Year	Purpose	Sample Setting	Methods	Findings Key
Barboza et al. (2009)	To explore the risk factors associated with bullying behaviors among adolescents.	Adolescents ages 11-14 N=9,816	Health Behavior in School Children (HBSC) Cross-National Survey	*Bullying increases among children, who watch television frequently, lack teacher support, have themselves been bullies, attend schools with poor school climate, have emotional support from their peers and have parents and teachers who do not place high expectations on their school performance.
Borup & Holstein (2007)	To study the effects of dialogues with school health nurses among schoolchildren who were victims of bullying.	All Danish students in grades 5,7,9 Ages 11,13, 15 N=5,205 Boys= 2,624 Girls= 2,581	Cross-Sectional and school based survey. Olweus outcome dialogues with school nurses	*8% of the students were exposed to bullying at least once a week. *A large proportion of the victims reported positive

				effects of their dialogues with the school health nurse.
Carlyle & Steinman (2007)	To examine demographic variations of bullying behaviors, aggression and victimization and their prevalence, co-occurrence and association with other health outcomes.	6-12 graders in 16 schools in the US. N=79,492 Boys= 37,676 Girls= 39,142	School based surveys assessing repeated experiences with bullying, aggression and victimization.	*Both dimensions of bullying were more common among younger male African American and Native American students. *Most children involved in bullying were either perpetrators of victims but not both. *Substance use was strongly associated with victimization.
Correia & Dalbert (2008)	To apply just world research to the analysis of bullying at school and examine the relationship between the belief in a personal just world (BJW) and self-reported	Portuguese students in grades 7 & 9 N=187 Boys= 90 Girls= 97	BJW was measured using the Personal Belief in a Just World Scale	*The more students endorsed the personal BJW the less likely they were to bully others. *No associations between BJW and defending victims. *BJW and internal attributions by victims is not

	behavior in bullying situations.			consistent.
Craig, Pepler & Blais (2007)	To examine the ways children respond to bullying and their evaluations of the effectiveness of various strategies in reducing bullying problems.	Canadian school children Ages 4-19 N=1,852 Boys= 653 Girls= 1,169	Web-based questionnaire	<p>*Children indicated that they were motivated to do something about bullying by their own need to be assertive and by emotional reactions to bullying. ($p < 0.01$)</p> <p>*Children were motivated to do something when the bullying escalated or when it became constant. ($p < 0.01$)</p> <p>*Strategies that they use to stop bullying many said they did nothing.</p> <p>*Girls more than boys likely to relational strategies. ($p < 0.01$)</p>

				*Boys likely to use physical aggression. ($p < 0.01$)
Due et al. (2007)	To examine whether being a victim of bullying is associated to medication use =, taking into account the increased prevalence of physical and psychological symptoms.	Youth grades 5, 7, and 9 in Denmark. N=5205 Boys= 2,425 Girls= 2,459	Student self-reported health symptoms. Medicine use and bullying questionnaire	*Adolescent victims of bullying used medicine for pains and psychological problems more often than those not bullied. *Most common use of medicine was for headaches. *70% use of medications among victims.
Engstrom et al. (2005)	To investigate how long the effect of peer victimization on the occurrence of physical injury lasts and whether the effect varies according to how frequently	Ages 10-15 Stockholm hospitalized children due to physical injury. N=575	Interviews and questionnaires on social characteristics filled out by parents.	*There is an increased risk of unintentional injury after an episode of peer victimization shortly after the end of exposure to victimization. *Risk is substantially higher

	an injured child is victimized.	Boys= 358 Girls= 217		in children who are seldom victimized than those victimized frequently.
Eriksson & Sellstrom (2010)	To determine the extent to which demands in the classroom are associated with subjective health complaints in Swedish school-age children.	Cluster sample. Ages 11-15. Grades 5, 7, 9. N=8,341 Boys= 4,170 Girls= 4,171	Data from 2001/2002 & 2005/2006 Swedish cross-sectional national (HBSC) using multilevel logistic regression technique.	*In classrooms with high demands the odds of having subjective health complaints was 50% higher. *Girls were more affected than boys. Girls 25% Boys 12.7% *High levels of school demands increased the odds of reporting a high degree of SHC.
Fekkes et al. (2004)	To assess the association between bullying	32 Dutch Elementary schools.	Bullying Questionnaire Health	*Victims had significantly higher chances for depression and

	behaviors and a wide variety of psychosomatic health complaints and depression.	Ages 9-12 N=2,766 Boys= 1,370 Girls= 1,384	Complaints, depression questionnaire for children.	psychosomatic complaints. Moderate indicator 48.6%, Strong indicator 16.1% *Children who bullied did not have higher chance for most of the health symptoms.
Fey et al. (2009)	To examine student behaviors, beliefs and self-reported behaviors following second year implementation of Steps to Respect program.	6 elementary schools in the pacific northwest. Control Group N=399 Boys= 199 Girls= 200 Experiment group N=225 Boys= 112 Girls= 113	One year after study participation. Longitudinal study Intervention students vs. control group.	*Areas where bullying most commonly took place were playgrounds. *Consistent reductions in problem behavior on the playgrounds after intervention. *Reductions in problem behaviors reduced with second year of program implementation. *Study showed changes in bystander

				behaviors.
Frisen, Jonsson & Persson (2007)	To describe adolescents perceptions and experiences of bullying.	High School Students N=119 Boys= 71 Girls=48	Interviews	*Most common age period of being bullied. *Bullies reported most of them bullied when they were 10 to 12 years of age. *Difference appearance was most common reason why individuals are bullies. 40% *Adolescents felt that others bullied because they have low self-esteem. 28% *Adolescents felt that bullying stopped most often because the bully matures.
Gini (2008)	Analyzing psychosomatic, emotional and behavioral problems among Italian bullies,	Primary School Children. 3, 4, 5 grades.	Bullying Behaviors Scale Peer Victimization Scale	*Victims had high risk for conduct problems. $p < 0.05$ *Bully/victims had

	victims and bully/victims.	Low middle class population. N=565 Boys= 266 Girls= 299	Health Symptoms questionnaire	higher risk of conduct problems, hyperactivity and peer problems. $p = < 0.01$ *Bullies had higher risk for hyperactivity. $p = < 0.05$ *All groups had risk for psychosomatic symptoms. *Boys were twice as likely as girls to be labeled bullies. *Victims reported more psychosomatic complaints. $p = < 0.01$
Horowitz et al. (2004)	To explore teasing and bullying experiences in middle school students as part of the Child Adolescent Teasing Scale	11-14 year old middle school students from Massachusetts, New Mexico, and Mississippi N= 61	6 Focus groups with 8-10 students in each.	*Teasing equated to name-calling. *Bullying is when kids threaten you and say they will beat you up. *Some described teasing and bullying

	(CATS) project.	Boys= 30 Girls= 31	<p>as the same thing.</p> <p>*Risk for being teased about physical appearance increases when differences were blatant.</p> <p>*Name calling commonly used for taunting.</p> <p>Visible indicators of physical disability or health problems caused teasing.</p> <p>*Clothing often a source of teasing.</p> <p>*Personal mannerisms and conduct were a cause for teasing when seen as different or unacceptable by peers.</p> <p>*Family neighborhood, housing, religion,</p>
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				<p>and background that did not meet peer approval caused students to be teased or bullies.</p> <p>*Academic ability and performance also a target for teasing and bullying.</p>
Juvonen & Gross (2008)	To examine the overlap among targets of and the similarities between online and in school bullying among internet using adolescents.	<p>12-17 year olds</p> <p>N=1,454</p> <p>Boys= 363</p> <p>Girls= 1,091</p>	Web-based survey	<p>*Frequent users of the internet cyber bullying are a common experience.</p> <p>*The types of bullying online and in school are similar.</p> <p>*Cyber bullying is associated with increased stress.</p> <p>*Children rarely told adults about the bullying.</p>
Karvonen, Vikat & Rimpela	To study the differences across schools in	Finnish 8 th & 9 th graders.	Multiple linear regression models used to	*A rise in common health complaints rose 1996-2000.

(2005)	common health complaints and in three group factors: pupil's individual characteristics, family related factors and school related factors.	14-15 years old N= 6,034	analyze repeated cross-sectional data. Finnish school health survey Questionnaire of 8 common health symptoms.	*Students who performed well at school appeared to be particularly vulnerable to poor psychosocial health.
Khoury-Kassabri et al. (2004)	An ecological perspective was used to predict violence.	Nationally representative sample in 163 schools in Israel. Grades 7-11 N=10,400	Self-administered questionnaire.	*Boys bullied more than girls for all types of bullying. *Boys perpetrated mostly physically and mostly against other boys. *Schools with higher populations of boys have especially high levels of victimization. *Middle school students were exposed to victimization more than high school students.

				<p>*Schools with large population of students with low SES showed higher levels of victimization.</p> <p>*Victimization higher in overcrowded classrooms.</p> <p>*Schools with poor perceived school climate had higher levels of victimization and bullying.</p>
Klomek et al., (2009)	To study the associations between childhood bullying behaviors at age 8 and suicide attempts and completed suicides up to age 25.	Nationwide prospective study in Finland. N=6017 Boys= 2,946 Girls= 2,867	Questionnaires	<p>*Boys who were bullies or victims frequently were more likely to be suicidal.</p> <p>*None of the girls who were bullies frequently were suicidal.</p> <p>*Girls who were victims were more</p>

				likely to be suicidal.
Lee (2010)	Identify ecological prediction model of bullying behaviors	Twenty-Two classrooms in the southern United States. N=485 Boys= 256 Girls= 229	Olweus Bully/Victim questionnaire	<p>* Individual traits, particularly individual tendency for aggression and fun seeking, have the most important influence on bullying behavior. Aggression: $\alpha = .77$; Fun Seeking: $\alpha = .80$</p> <p>*Individual tendencies has a direct and strong influence on bullying behaviors, but it also influences peer interactions, which influences school climate.</p> <p>*School climate in influences bullying behaviors.</p> <p>* Weak non-significant relationship between teacher's</p>

				<p>interactions and bullying behaviors. $\alpha = .64$</p> <p>* Positive experiences in the family significantly and positively influenced bullying behaviors. $\alpha = .81$</p> <p>* No significant relationship between parental communication with teachers and peers.</p> <p>* Children who perceive their community and peer group more collectively were less likely to have the tendency for aggression and fun-seeking behaviors.</p>
Lien et al (2009)	To describe the prevalence of bullying, mental health problems and physical complaints of	Grades 10 & 12 15 & 16 years N=3,790	Questionnaires from the HVBBO study.	<p>*Bullying decreases in both boys and girls from 15/16 to 17/18.</p> <p>*Bullying was associated with</p>

	10 th and 12 th grade students and to analyze the association between bullying, mental health problems and muscle and skeletal problems.	Boys= 1,670 Girls= 2,120		more use of psychiatric and psychological services among boys.
Meland et al. (2010)	To clarify distributions of emotional and somatic symptoms among different groups involved in bullying behaviors during early adolescence.	Children ages 11-15 in Norway N=1,237 Boys= 597 Girls= 627	Cross-sectional study based on self-completed questionnaires of the HBSC.	*Victims complained of depression, anxiety and unfavorable self-perceptions. Depression: 79% more often than those not involved. Anxiety: 57% more often than those not involved *Victims had increase in somatic complaints. Somatic Complaints: 79% more often than those not involved. *Bullies more depressed and

				<p>pessimistic. Depression: 27% more often than those not involved. Pessimism: 19% more often than those not involved.</p> <p>*Bullies and Victims had similar problems with teachers, schools and parental relations.</p> <p>*Bullies had more friends and more confidence than victims.</p>
Meyer-Adams & Conner (2008)	To examine the relationships among schools psychosocial environment and the prevalence and types of bullying behaviors that either leads to or results from that	Public Middle Schools in Philadelphia. Grades 6-8 Ages 11-14 N= 7,583 Boys= 2,629 Girls= 2,722	Student Victimization Survey Psychosocial Environment Survey (ESBSS) Effective School Battery Student Survey	<p>*Victimization by bullying behaviors and contributing to bullying behaviors were significant negative predictors of psychosocial environment of the school. ($p < .001$)</p> <p>*Psychosocial</p>

	environment.			environment of the school is a significant negative predictor to carrying a weapon for protection and avoidance behaviors for bullying.
Nansel et al. (2001)	To measure the prevalence of bullying behaviors among US youth and to determine the association of bullying and being bullied with indicators for psychosocial adjustment including problem behaviors, school adjustment, social/emotional adjustment and parenting.	Children in grades 6-10 in public and private schools throughout the US. N=15,686	The WHO (HBSCS)	<p>*Bullying was more prevalent among boys than girls.</p> <p>*Bullying occurred more frequently in middle school aged children.</p> <p>*Boys both physical and verbal bullying.</p> <p>*Females verbal bullying and being bullied were associated with poorer psychosocial adjustment.</p> <p>*Victims</p>

				<p>demonstrated difficulty making friends, poorer social and emotional adjustment, and poorer relationships with classmates and increased loneliness.</p> <p>*Bullies more likely to be involved in drinking and smoking.</p> <p>*Bullies had poorer school adjustment and poor perceived school climate.</p> <p>*Bullies made friends easily.</p> <p>*Bully/victims have poorer adjustment both social and emotional problem behaviors.</p>
Ramya &	To estimate the	5 Randomly	Questionnaire	*Bullying was more

Kulkarni (2010)	prevalence of bullying among girls and boys in school and examine its associations with psychological and psychosomatic symptoms.	selected schools in India. Ages 8-14 N=500 Boys= 336 Girls= 164	about bullying and interviews.	prevalent among boys than girls. *Only 65 parents knew their child was being bullied. *Bullied children more likely to report symptoms. *Prevalence of bullying was 60.4%
Rigby (1999)	To examine whether reported peer victimization is related to current levels of physical and mental health among early and late secondary school students.	Students attending first two years of school in south Australian high school. N=126 Boys= 68 Girls= 58	Questionnaires	*Victimization was significantly correlated with relatively poor physical and mental health. Multiple R .58 F ratio= 6.68, $p < .001$ *High levels of peer victimization predicted poor physical health for both sexes and poor mental health in girls.

<p>Rigby & Slee (1991)</p>	<p>To study whether tendencies for children to relate to each other at school in a bullying manner, as victims or in a pro-social way could be identified on the basis of children's self-reports, as distinct factors and how they relate to self-esteem of children, their levels of happiness and their liking school.</p>	<p>Two secondary schools in lower to middle class Adelaide Australia. N=1,362 Boys= 604 Girls= 758</p>	<p>BPQ scale Rosenberg Self Esteem Scale Andrews & Witney Measures of Overall Happiness.</p>	<p>*Children with high pro-social tendencies had higher self-esteem, generally happier, and had great liking for others. $r=.21^{***}$ ($^{***}p < .001$)</p> <p>*Victims had low self-esteem, tended to be less happy, but did not show greater dislike for school.</p> <p>*Bully scale did not suggest bullies had low self-esteem.</p> <p>*Bullies were less happy and disliked school more. Happiness: $r= -.26^{***}$ ($^{***}p < .001$) Liking School: $r= -.20^{***}$ ($^{***}p < .001$)</p> <p>*Females had lower</p>
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				self-esteem. *Age was found to be negatively associated with happiness and liking school.
Skrzypiec et al. (2011)	To investigate the nature of coping strategies employed by young people who reported different types of bullying and to investigate the impact different ways that victims report being bullied by their peers.	Two public metropolitan high schools in Australia. N=425 Boys= 239 Girls= 186	BPQ scale	*Students bullied in multiple ways are less likely to report that they are coping. *Most common form of victimization was name-calling. *Females more likely than males to use a range of coping strategies. *Females more likely to seek adult or peer support.
Van der Wal, de	To assess the association	Primary Schools in	Amsterdam's Children's	*Depression and suicidal ideation are

Wit & Hirasing (2003)	between bullying indicators of psychosocial health for boys and girls.	Amsterdam. Ages 9-13 N= 4,721 Boys= 2,337 Girls= 2,384	Bullying questionnaire. Depression Inventory for Children.	common outcomes of being bullied for both boys and girls. *Associations are stronger for indirect than direct bullying. *Female offenders of bullying had significant effect on depression and suicidal ideations.
Veenstra et al. (2005)	To study to what extent uninvolved pupils, bullies, victims and bully/victims differ based on gender, SES, parenting, vulnerability and individual characteristics.	Dutch Pre-adolescence N=3,145 Boys= 1,547 Girls= 1,598	1 st assessment from Tracking Adolescents Individual Lives Survey (TRAILS) Interviews	*Boys were more likely to be bully/victims than girls. *Girls more likely to be passive victims. *Uninvolved adolescents came from families with high SES than bully/victims, bullies and victims. *Individual characteristics had a strong impact on

				<p>bullying and victimization.</p> <p>*Bullies less isolated than victims.</p> <p>*Bully/victims and victims more disliked by peers than uninvolved group.</p>
Wilson (2004)	To compare effects of connectedness and climate on measures of aggression and victimization.	<p>9 Middle Schools</p> <p>10 High Schools</p> <p>N=2,327</p>	<p>Safe Communities Safe Schools Survey (SCSS)</p> <p>Perpetration of Physical Aggression & Victimization Scale</p>	<p>*Students with low connectedness were more aggressive in positive school climates. ($p = .000$)</p> <p>*Students in negative school climates with low connectedness were more likely to demonstrate high levels of aggression. ($p = .000$)</p> <p>*Highly connected students in positive or negative school climates were more</p>

				likely to experience low levels of victimization. ($p = .000$)
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Appendix (B)

Rutgers, The State University of New Jersey
180 University Avenue
Newark, NJ 07102-1897
p. [REDACTED]

You are invited to participate in a research study that is being conducted by Tracy Perron, who is a doctoral candidate and a professor in the Nursing Department at Rutgers University. The purpose of this research is to determine factors associated with peer violence in elementary, middle and high school students.

This research is anonymous. Anonymous means that I will record no information about you that could identify you. This means that I will not record your name, address, phone number, date of birth, etc. There will be no way to link your responses back to you. Therefore, data collection is anonymous.

The research team and the Institutional Review Board at Rutgers University are the only parties that will be allowed to see the data, except as may be required by law. If a report of this study is published, or the results are presented at a professional conference, only group results will be stated. All study data will be kept for three years.

There are no foreseeable risks to participation in this study. In addition, you may receive no direct benefit from taking part in this study.

Participation in this study is voluntary. You may choose not to participate, and you may withdraw at any time during the study procedures without any penalty to you. In addition, you may choose not to answer any questions with which you are not comfortable.

If you have any questions about the study or study procedures, you may contact myself at [REDACTED] [REDACTED] 9 or Rutgers College of Nursing 180 University Ave, Newark, NJ 07102.

If you have any questions about your rights as a research subject, you may contact the IRB Administrator at Rutgers University at:

Rutgers University, the State University of New Jersey
Institutional Review Board for the Protection of Human Subjects
Office of Research and Sponsored Programs
3 Rutgers Plaza
New Brunswick, NJ 08901-8559

Tel: [REDACTED]

Email: [REDACTED]

You will be given a copy of this assent form for your records. By participating in this study/these procedures, you agree to be a study subject.

Appendix (C)

Your child is invited to participate in a research study that is being conducted by Tracy Perron, who is a doctoral candidate and a professor in the Nursing Department at Rutgers University. The purpose of this research is to determine factors that are associated with peer violence in elementary, middle and high schools students.

Approximately 2,400 children between the ages of 8 and 19 years old will participate in the study, and each child's participation will last approximately 15 minutes. Your child's participation in this study will involve the following: Answering 3 short questionnaires about bullying and school climate.

This research is confidential. Some of the information collected about your child includes gender and grade in school. Please note that we will keep this information confidential by limiting individual's access to the research data and keeping it in a secure location, in a locked file cabinet in the investigators office.

The research team and the Institutional Review Board (a committee that reviews research studies in order to protect research participants) at Rutgers University are the only parties that will be allowed to see the data, except as may be required by law. If a report of this study is published, or data will be kept for three years.

There are no foreseeable risks to participation in this study.

Although there may be no direct benefit to your child, the possible benefit of your child's participation is that it will give the school a better picture of how well they control bullying and how they can promote a positive atmosphere.

Participation in this study is voluntary. You may choose for your child not to participate, and you may withdraw your child from participating at any time during the study activities without any penalty to your child. In addition, you/your child may choose not to answer any questions with which you/your child are not comfortable.

If you/your child have any questions about the study or study procedures, you/your child may contact myself at [REDACTED], [REDACTED] or Rutgers College of Nursing, 180 University Ave Newark, NJ 07102.

If you/your child have any questions about your rights as a research subject, you may contact the Institutional Review Board (a committee that reviews research studies in order to protect those who participate). Please contact the IRB Administrator at Rutgers University at:

Rutgers University, the State University of New Jersey
Institutional Review Board for the Protection of Human Subjects
Office of Research and Sponsored Programs
3 Rutgers Plaza
New Brunswick, NJ 08901-8559

Tel: [REDACTED]

Email: [REDACTED]

Your child will also be asked if they wish to participate in this study. You will be given a copy of this consent form for your records.

Sign below if you agree to participate (18 years of age or older).
Parent's signature is needed if child is less than 18 years of age: Sign below if you allow your child to participate in this research study:

Name of Child (Print) _____

Signature of Participant if 18 years of age or older _____ Date _____

Name of Parent/Legal Guardian (Print) _____

Parent/Legal Guardian's Signature _____ Date _____

Principal Investigator Signature _____ Date _____

Keep this one for your records

Sign below if you agree to participate (18 years of age or older).

Parent's signature is needed if child is less than 18 years of age: Sign below if you allow your child to participate in this research study:

Name of Child (Print) _____

Signature of Participant if 18 years of age or older _____ Date _____

Name of Parent/Legal Guardian (Print) _____

Parent/Legal Guardian's Signature _____ Date _____

Principal Investigator Signature _____ Date _____

Please return this copy to the school

Appendix (D)

Please help us learn about your school. Your opinion will help us to try to make your school a better place. Your name is not on the form, so no one at your school will know how you answered these questions. Please be as honest as you can. There is no right or wrong answers. Your opinion is all that counts. Please answer the next few questions to tell us a little about yourself. These questions will help us understand how all of the different groups in your school experience the school's environment.

1. What grade are you in? _____
2. How old are you? _____
3. Are you
 - a) A girl
 - b) A boy

The next questions are about not feeling well at school. If you do not wish to answer a particular question, skip it and move on to the next one. Think about how often you have had any of these symptoms then circle how many times you have had these symptoms.

Symptoms	Rarely or Never	About every month	About every week	More than once a week	About every day
1.Headache	1	2	3	4	5
2.Stomach-ache	1	2	3	4	5
3.Feeling low	1	2	3	4	5
4.Bad temper or cranky	1	2	3	4	5
5.Feeling nervous	1	2	3	4	5
6.Difficulties sleeping	1	2	3	4	5
7.Feeling dizzy	1	2	3	4	5

Now for each symptom how often have you visited the school nurse for each symptom? Circle your answers.

Symptoms	Rarely or Never	About every month	About every week	More than once a week	About every day
1.Headache	1	2	3	4	5
2.Stomach-ache	1	2	3	4	5
3.Feeling low	1	2	3	4	5
4.Bad temper or cranky	1	2	3	4	5
5.Feeling nervous	1	2	3	4	5
6.Difficulties sleeping	1	2	3	4	5
7.Feeling dizzy	1	2	3	4	5

Adapted from the *Health Behavior in School- Age Children* questionnaire (1989/90): A World Health Organization Cross National Study conducted in Canada

Appendix (E)
School Community Survey

Here are some sentences please decide if you disagree a lot, disagree a little, neither agree nor disagree, agree a little or agree a lot. If you do not wish to answer a question, skip it and move on to the next one.

Circle your answers:

Questions	Disagree a lot!	Disagree a little	Neither agree nor disagree	Agree a little	Agree a lot!
1. Students treat classmates with respect.	1	2	3	4	5
2. Students exclude those who are different.	1	2	3	4	5
3. Students help each other, even if they are not friends.	1	2	3	4	5
4. When students do something hurtful, they try to make up for it.	1	2	3	4	5
5. Students try to get other students to follow the rules.	1	2	3	4	5
6. Students work well together.	1	2	3	4	5
7. Students are disrespectful toward their teachers.	1	2	3	4	5
8. Students help new students feel accepted.	1	2	3	4	5
9. Students pick on other students.	1	2	3	4	5
10. Students are willing to forgive each other.	1	2	3	4	5
11. Students resolve conflicts without fighting, insults, or threats.	1	2	3	4	5
12. Students like being in this school.	1	2	3	4	5
13. Students are involved in helping solve school problems.	1	2	3	4	5
14. Students can talk to their teachers about problems that are bothering them.	1	2	3	4	5
15. In this school, students don't feel like they learn anything useful.	1	2	3	4	5
16. Teachers go out of their way to help students who need extra help.	1	2	3	4	5

17. Teachers in this school like to come here.	1	2	3	4	5
18. In this school you can count on adults to try and make sure students are safe.	1	2	3	4	5
19. Teachers are unfair in their treatment of students.	1	2	3	4	5
20. Students here have a lot of school pride.	1	2	3	4	5

Adapted from the Lickona & Davidson's *School As A Caring Community Profile-II (SCCP-II)*
<http://www.cortland.edu/character/sccp-ii.htm>

Appendix (F)

The next questions are about bullying. Bullying is when there is an imbalance of power; someone is bigger, stronger, older or even more popular than the person being picked on. We say someone is being bullied when another student or group of students say or do nasty or unpleasant things to him or her. It is also bullying when a person is hit, kicked or threatened by others. This may take place often, and it is hard for the person being picked on to defend him or herself. It is also bullying when someone is teased repeatedly in a way he or she doesn't like this can take place in person or over the internet like Facebook, My Space, Formspring or by texting. Directions: Show how often the following statements are true of you; to do this circle your answers. If you do not wish to answer a question, skip it and move on to the next one.

Questions	Never	Once in a while	Pretty often	Very often
1. I like to play sports	1	2	3	4
2. I get good grades	1	2	3	4
3. I get called names	1	2	3	4
4. I give kids weaker than me a hard time.	1	2	3	4
5. I like to make friends	1	2	3	4
6. I fool around in class	1	2	3	4
7. I feel I can't trust others	1	2	3	4
8. I get picked on by others	1	2	3	4
9. I am part of a group that goes around teasing others.	1	2	3	4
10. I like to help people who are being picked on.	1	2	3	4
11. I like to make others scared of me.	1	2	3	4
12. Others leave me out of things on purpose.	1	2	3	4
13. I get in fights in school	1	2	3	4
14. I like to show others that I am the boss.	1	2	3	4
15. I share things with others.	1	2	3	4

16. I enjoy upsetting kids weaker than me, someone that I can easily beat.	1	2	3	4
17. I like to get in fights with someone I can easily beat.	1	2	3	4
18. Others make fun of me.	1	2	3	4
19. I get hit and pushed around by others.	1	2	3	4
20. I enjoy helping others	1	2	3	4

Adapted from the Rigby & Slee (1993), *The Peer Relations Questionnaire (PRQ)*.

Tracy Perron

DOB: May 4, 19

City of Birth: Concord New Hampshire

EDUCATION

Institution	Degree	Date	Major
Rutgers University	PhD	Oral Defense April 2013	Nursing
Kean University	MSN	2001	Nursing
Kean University	BSN	1999	Nursing
Framingham Union Hospital	Diploma	1987	Nursing

School of Nursing

<u>Academic Rank or Title of position</u>	<u>Institution</u>	<u>Date</u>
Full-time Lecturer	Kean University, College of Nursing	2012- Present
Part-time Lecturer	Rutgers University College of Nursing	2009-Present
Nursing Instructor	Brookdale Community College	1996-Present
Faculty, Instructor Trainer	Jersey Shore Medical Center	2011-Present
Full-time Faculty	Rutgers University College of Nursing	2001-2009
Faculty, Instructor Trainer	Bayshore Medical Center	1997-2011
Clinical Instructor	Rutgers University, College of Nursing	1999-2009
Community Health Educator	Monmouth Medical Center	1994-2006
Graduate Assistant	Kean University, Department of Nursing	1999-2001
Nursing Supervisor/ IV Team Coordinator	AmServ Healthcare MCOSS	1993-1997 1991-1993
Nursing Director I.V.	Kimberly Quality Care	1990-1991
Staff Nurse	Short Hills Pediatrics	1989-1990
Staff Nurse	St. Claire's Hospital	1987-1989

Perron, T (2013). Peer Victimization: Strategies to decrease bullying in schools. *British Journal of School Nursing, (8) 1*, 25-29.