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Examining the Relationship Between Bullying, Attendance, and Achievement in Schools

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Abstract

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MA, Walden University, 2006

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Doctoral Study Submitted in Partial Fulfillment

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Abstract

Bullying is a widespread problem in American schools. Researchers have suggested a relationship between bullying, school attendance rates, and achievement levels. This study was conducted in a suburban school district in Georgia that identified bullying as a problem in its schools during the 2011-2012 school year. The purpose of this correlational study was to identify potential relationships between the primary predictor variable of bullying and the outcome variables of attendance and achievement as measured by the College and Career Ready Performance Index (CCRPI). Secondary predictor variables suggested by research were socioeconomic status and number of limited English proficiency students. These secondary predictors were used as control variables, offering a clearer look at bullying's relationship with the outcome variables. Patterson's coercive process model was used for explaining the underlying interactions that may illustrate how or why bullying is related to variables such as school attendance and achievement. The research questions focused on whether or not attendance and achievement within district schools are predicted by incidents of bullying. Two separate multiple regression analyses were applied to examine whether the predictors were associated with attendance or achievement in the district's 49 schools. Bullying was not a significant predictor of attendance (p = .75) or achievement (p = .83) in the sample district's schools. Recommendations included further study with variables and sample sizes consistent with prior studies that have found significant relationships. Implications for positive social change include providing the district with recommendations for promoting a positive academic climate built upon positive behavior supports.

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Section 1: Introduction to the Study

Introduction

Bullying is a problem with which many schools are struggling. Olweus (1995), regarded as the pioneer and "founding father" of bullying research, observed that bullying at a school occurs when an individual is exposed repeatedly over time to negative verbal and physical actions on the part of one or more students. Olweus also noted that a bullying relationship involves an imbalance of strength or power. Dillon and Lash (2005) crafted a similar explanation of bullying, noting that bullying involves repeated aggressive actions committed by individuals who have an advantage in power over their victims. Applying an exact definition to bullying can be challenging because bullying has changed and continues to evolve along with societal changes. For example, as technology develops, new avenues for potential bullying also develop. Bullying that attempts to damage the reputation of the victim through electronic means such as e-mail, text messages, or social media is known as cyberbullying (Wong, 2009). Cyberbullying and other changes to the way that bullying occurs do not make existing definitions of bullying obsolete; however, they do highlight the fact that bullying has evolved and changed over time, and that limiting bullying is a challenge that will require patience and flexibility.

In Section 1, I discuss the problem statement and the nature and purpose of the study. Section 1 also includes the study's research questions, theoretical framework, and operational definitions. Section 1 closes with a discussion of the study's assumptions, limitations, scope, delimitations, and significance.

Problem Statement

A school district in a suburban area in north central Georgia has identified bullying as a problem. According to the district's assistant superintendent for learning and leadership (personal communication, April 13, 2015), over 700 incidents in the district were coded as bullying during the 2011-2012 school year. Approximately one third of the district's nearly 45,000 students reported being picked on in the Georgia Department of Education Student Health Survey (Georgia Department of Education, 2012c). The district has taken some steps to minimize bullying. For example, the district has included promoting a safe and supportive environment as a focus area within its strategic plan. The district has also gathered data related to bullying in its schools. Many individual schools within the district have established partnerships with antibullying programs. Two programs that are currently being used in some schools are the Olweus Bullying Prevention Program (*Olweus Bullying Prevention Program, n.d.*) and the Anti-Defamation League's No Place for Hate program (*Anti-Defamation League,* n.d.). Information provided from the district guided this quantitative study as I examined bullying within the district and how the frequency of bullying within the district's schools may be correlated with attendance rates and achievement levels.

Survey results from the Georgia Department of Education Student Health Survey (Georgia Department of Education, 2012c) indicated that 36.2% of sixth graders, 31.9% of seventh graders, and 28.9% of eighth graders in this district reported being picked on or teased at school within the last thirty days. These results demonstrate the scope of the local problem when compared with a nationwide survey (Finkelhor, Turner, Ormrod, &

Hamby, 2009) in which 19.7% of students reported having been teased or emotionally bullied within the previous year. The Georgia student health survey indicated that over 26% of the district's students do not feel safe at school and that approximately 3% of students have missed school within the last 30 days because they felt unsafe at school. As a result of the student health survey, the district also added "bullying" as a check box for a possible infraction on its office discipline referral (ODR) form for the 2011-2012 school year. According to the sample district's assistant superintendent for learning and leadership (personal communication, April 13, 2015), the district's bullying policy strictly prohibits bullying and indicates that behavior that infringes on the safety of students, staff, or volunteers will not be tolerated. The bullying policy also states that opportunities for training and professional development for school staff on how to respond to bullying situations shall be in place.

Other events aimed at increasing awareness regarding bullying and limiting bullying within the district's schools have been held in recent years, such as a Parent University event in 2012 (Appendix A) and a parent workshop focusing on cyberbullying and potential risks or dangers that have developed with emerging technology in 2013 (Appendix B). A press release from the district ("New Family Resource Center Opens Doors," 2012) discussed the district's opening of a family resource center with a goal of offering assistance to parents in the area of bullying and cyberbullying prevention. As schools within the district strive to improve attendance and achievement, reducing or limiting bullying may be a positive step toward those goals.

Nature of the Study

This quantitative study combined a correlational approach with multiple regression analyses to examine the relationship between bullying, attendance, and academic achievement in the schools in a suburban school district in Georgia. The study examined whether the frequency of bullying instances in a school predicts that school's student attendance rates or achievement levels.

Research Question 1: Does the frequency of bullying within a school predict the school's student attendance rate?

$H_0$1: Frequency of bullying does not predict a school's student attendance rate.

H_a1: Frequency of bullying predicts a school's student attendance rate.

Research Question 2: Does the frequency of bullying within a school predict the school's achievement level as measured by the College & Career Ready Performance Index (CCRPI)?

$H_0$2: Frequency of bullying does not predict a school's achievement level as measured by the school's CCRPI score.

H_a2: Frequency of bullying predicts a school's achievement level as measured by the school's CCRPI score.

These research questions shape the research that took place, the data that were collected, and how that data were analyzed in this study. While bullying is the predictor variable that is the focus of this study, other potential predictors of attendance and achievement, socioeconomic status (SES) and limited English proficiency (LEP), are also

included in the statistical analysis to help provide a clearer picture of bullying's relationship with attendance and achievement that goes beyond the effect of other factors in a school that may impact attendance and achievement. Further discussion of the methodology, data collection, and analysis is located in Section 3.

Purpose of the Study

The purpose of this study is to examine the relationships between bullying, attendance, and achievement in schools. The more that is known about bullying in schools, the better-equipped districts and school leaders will be to minimize bullying and bring positive change to their schools, districts, or communities. There is evidence in the local setting as well as in professional literature that bullying is a serious problem for schools. A goal of this study is to provide a better understanding of the effects of bullying in the sample district.

Theoretical Framework

Patterson's coercive process model (Patterson, Reid, & Dishion, 1992) is the framework for this study. This model is grounded in social learning theory (SLT). Patterson's scientifically validated developmental model of antisocial behavior, aggression (inclusive of acts of bullying), and juvenile delinquency is built on the foundations of Bandura's SLT (Eddy, Reid, & Fetrow, 2000; Patterson, 1986; Robinson & Jacobson, 1987).

In relation to bullying and aggression, SLT is regarded as the most systematic and scientifically supported psychological explanations for aggression and its associated impact on personal, social, and academic variables (Kauffman & Landrum, 2013). SLT

combines what is known about the effects of the environment as well as the role of cognition, emphasizing personal agency, which is defined as "the ability of humans to use symbols for communication, to anticipate future events, to learn from observation or vicarious experience, to evaluate and regulate themselves, and to be reflectively self-conscious" (Kauffman & Landrum, 2013, p. 78). Patterson's coercive process model extends SLT with a focus on the development and intervention for aggressive or antisocial behavior in children and youth (Patterson, 1995).

SLT recognizes the triadic reciprocality of the effects between the environment, the individual's behavior, and person variables (e.g., emotions, perceptions, thoughts); each variable does not operate independently from each other and all are constantly influencing each other across contextual environments (Bandura & Locke, 2003) that include both home and school. SLT and Patterson's coercive process include two integral learning operations: (a) adult or peer modeling of behaviors whereby the child directly and/or vicariously learns how to behave in order to obtain attention, materials, and/or avoid or escape aversive situations; and (b) the functional mechanisms of negative reinforcement within direct and vicarious learning experiences that can strengthen the likelihood of future aggression in children (Eddy, Reid, & Fetrow, 2000; Kauffman & Landrum, 2013; Patterson, 2002; Patterson et al., 1992). These maintaining operations may be seen when parents or teachers present the child with an academic task or social demands that are perceived by that child as aversive. The child then reacts in a verbally and/or physically aggressive manner, causing the parent or teacher to withdraw the demands or instructions (Kauffman & Landrum, 2013; Landrum, 1992). The child is then

more likely in the future to respond to the parent or teacher's demands using aggression in order to avoid perceived aversive situations.

Patterson (1976), in a seminal study applying SLT to dysfunctional family management interactions, hypothesized that children's antisocial behaviors can be triggered when parents use negative reinforcement-style coercion as the primary strategy for disciplining their children. Patterson et al.'s (1992) foundational social learning research concerning the development of antisocial behavior revealed that children who received significantly more negative reinforcement interactions from their parents than positive reinforcement interactions are more likely to struggle socially with their peers at school. In a replication and extension of Patterson et al.'s coercive family process model, Eddy, Leve, and Fagot's (2001) findings also pointed to and validated the relationship between parental discipline style and the display of antisocial behavior in children across settings, including schools. Landrum's (1992) Fenichel Award publication in *Behavioral Disorders* provided in-depth analysis of the negative reinforcement coercive process model in school settings, noting that teachers can play the same victim role to students with emotional/behavioral disorders that parents play to their aggressive, antisocial children in the family coercive process. Landrum's extension of SLT and Patterson et al.'s (1992) coercive process model to the classroom setting may provide educational practitioners valuable insight and understanding concerning what evidence-based approaches they can use to intervene in order to reduce bullying and antisocial behavior among students.

In the context of the public school, we must consider the triadic transactions between teachers, students who engage in aggressive behaviors (including bullying), victims of bullying or other aggression (including teachers), and the effects not only of the teacher on the bully but also the effects of aggression on teachers' instructional behavior (Landrum, 1992; Lewis, Jones, Horner, & Sugai, 2010). The reciprocal influences occurring in the school setting have an effect on a large number of important variables, including achievement and attendance (Farley, Torres, Wailehua, & Cook, 2012; Wood et al., 2012), variables examined in this study. The personal and social development of bullying and aggression and their effects on the environment align closely with the principles of SLT and the coercive process model because social interactions and direct or vicarious learning of the consequences of behavior are such a large part of a school's culture (Kauffman & Landrum, 2013).

As noted earlier, the other operation involved in the social learning coercive process is negative reinforcement. Carr, Newsom, and Binkoff (1976, 1980) were critical for helping professionals understand the ties between SLT and coercion; in these studies, the authors specifically explored the coercive, negative reinforcement mechanisms in a school setting. The results of their experimental studies demonstrated that when teachers increased their requests or commands for students to perform educational tasks, the level and severity of student aggression increased, forcing teachers to "dumb down" the curriculum in order to mitigate the acting out, which ultimately degraded their learning. These effects are the epitome of SLT coercive process in action (Patterson, 2000). It is important for teachers to understand these mechanisms that serve to strengthen and

maintain social attention-getting and avoidance behavior of aggressive students; too much or even too little attention from teachers can trigger this coercive process (Carr, 1988; Landrum, 1992; Lewis et al., 2010; Sarno et al., 2011). Knowledge of these processes and mechanisms can potentially lead educators to selecting appropriate interventions for reducing aggression, bullying, and coercion, which would eventually lead to improvements in academic achievement and school attendance (Sarno et al., 2011).

Educators today are more aware of the direct effects of bullying on peer social relations because of the increased attention given to the impact of victimization on others in public school settings; however, teachers still report (a) being unprepared to work with students who bully, and (b) having limited knowledge or understanding of the associated effects of aggression and bullying on other school variables such as academic achievement and attendance, both the victim's and the perpetrator's as well as other victimized students in proximity to the bully (Kauffman & Landrum, 2013; Rose & Monda-Amaya, 2011). Per SLT and the coercive process, classroom or school peers who directly or vicariously experience bullying and aggression from perpetrators often experience (a) increased stress, which frequently affects health; (b) reduced ability to concentrate on academics; and (c) poor schoolwork performance and even failure (Hartley, Bauman, Nixon, & Davis, 2014; Mishna, 2003). Victimized students who observe and experience first-hand the coercive process related to bullying are more likely to avoid coming to school and may even drop out (Reschly & Christenson, 2006).

The idea that an individual's behavior, as explained by SLT, is learned by observing and emulating others' behavior is important to this study because it can help school districts better understand why bullying may be taking place in their schools and how to address it. Shafer and Silverman (2013) noted that since social interaction experiences can shape behaviors, both bullies and victims are able to learn prosocial behaviors that are acceptable for school *if* those prosocial behaviors are observed or modeled as well as explicitly taught and reinforced by teachers. Through bullying related research, the sample district may gain valuable insight into how bullying can potentially impact other important educational variables related to school success. This understanding would hopefully then lead to changes in how local educators view and address bullying and aggression not as separate and unique from problems associated with absenteeism and achievement, but as reciprocal or interrelated variables (McEvoy & Welker, 2000; Wood et al., 2012). The outcomes of this study may then also encourage the local district to implement evidence-based social learning intervention programs and approaches in order to reduce the prevalence of bullying and its concomitant effects in schools.

Operational Definitions

Achievement: Achievement was measured using CCRPI (CCRPI, 2015). Each school in the district received a score for the 2011-2012 school year.

Attendance: For the purpose of this study, attendance was measured by the percentage of students in each school who missed fewer than 5 days of school during the 2011-2012 school year as reported by The Governor's Office of Student Achievement

(GOSA) school report cards. (The Governor's Office of Student Achievement Report Card, n.d.).

Bullying: Repeated aggressive verbal or physical behavior with the intent to harm another. This behavior often takes place over time and involves an imbalance of power between the bully and the victim or victims (Good, McIntosh, & Gietz, 2011; Pepler et al., 2006).

Limited English proficiency: For the purpose of this study, LEP was measured by the percentage of students in each school who are labeled as having LEP by the 2011-2012 school report cards (Governor's Office of Student Achievement Report Card, n.d.).

Office discipline referral: A form that documents significant behavioral events systematically (Pas, Bradshaw, & Mitchell, 2011).

School climate: The interactions within a school community, including all school stakeholders, that influence student development (Keiser & Schulte, 2009).

Socioeconomic status: For the purpose of this study, SES was measured by the percentage of students in each school who receive free or reduced lunch (FRL) according to the school report cards (The Georgia Governor's Office of Student Achievement Report Card, n.d.). Eligibility for an FRL is frequently used in educational research as a measure for SES, often (as is the case in this study) to control for the effect of SES on educational variables (Harwell & LeBeau, 2010).

Victim: A student who is often harassed by another student or a group of two or three students and suffers physical or psychological harm (Olweus, 1999; Putallaz et al., 2007).

Assumptions, Limitations, Scope and Delimitations

The following assumptions, limitations, scope, and delimitations are relevant for this study.

Assumptions

One assumption in this study is that administrators and teachers across the 49 schools within the district use the same general criteria for determining which incidents are reported as bullying and that they all interpret the criteria uniformly. This assumption is based on the fact that the sample district was concerned enough about the problem that it introduced bullying as a check box on its office referral forms in the academic year 2011-2012. This assumption is necessary because this incidence data is the only school-wide record of bullying that has the potential to be consistently collected across all schools within the district. It is also assumed that CCRPI is an accurate measure of achievement, as the instruments used within CCRPI that measure achievement have been verified as reliable and valid by the Georgia Department of Education (GaDOE).

Limitations

This study only included schools in one suburban district and uses a nonexperimental sampling method. As a result, the results of this study cannot be generalized to other schools or other districts. Results could vary in larger or smaller districts or in districts in a more rural or urban setting. It is also impossible to measure the number of bullying incidents that occur but are not reported.

Another limitation is that this study only includes data from one school year. The sample district only began using bullying as a check box on its office referrals in the

2011-2012 school year. Therefore, no prior data could be retrieved. The sample district was unable to provide a complete bullying report for the 2012-2013 school year, and the state of Georgia changed the way that CCRPI was calculated after the 2011-2012 school year. For these reasons, this study was unable to include data from the years following 2011-2012. Again, this potential limitation is acknowledged when interpreting the results and their generalizability. Any interesting relationships between the variables in this study may lead future investigators to explore these relationships in data from different districts and data that spans multiple years.

It is also worth noting that the multiple regression analysis used in this study might possess more sensitivity and power to detect statistical and practical effects (i.e., effect size) if raw frequency data rather than averages or percentages were used for some of the variables. However, I used the data in the form that it was available and as reported by the district and state. Since the available data was in percentage form for SES and LEP, they represent continuous data, which fits the planned analysis of this study.

Scope and Delimitations

This study only included bullying incidents as reported on schools' office referral forms. The amount of unreported bullying (and bullying potentially reported as something else such as inappropriate physical contact) is beyond the scope of this study. Additionally, bullying might affect other student variables, however, for this study only attendance and achievement were measured. Finally, other factors beyond bullying might affect attendance and achievement. As the literature suggested, two of those potential factors could be FRL and language barriers. In addition to the fact that research literature

suggested their potential import, both of these factors are consistently reported and published for all schools in the district, making them available for inclusion in this study.

Significance

Bullying is a problem that impacts many lives. Using data from his *Bully/Victim Questionnaire*, Olweus (1995) estimated that over 5,000,000 American students in Grades 1-9 are involved in bullying problems in a given school year. More recently, Wang, Ianotti, and Nansel (2009) found high prevalence rates of students either having bullied or having been bullied at school within the last two months: 20.8% physically, 53.6% verbally, 51.4% socially, or 13.6% electronically in a study that surveyed students in grades 6-10 across the United States.

Problems associated with bullying have increased over time due to increased access to technology and social media, allowing more opportunities for electronic or cyberbullying (Patchin & Hinduja, 2006). This demonstrates the potential scope of the problem. Bullying is a complex problem that has connections to cultural, social, familial, and personal aspects of our lives (Pepler et al., 2006). This study attempts to reveal the nature of the relationship between bullying, attendance, and achievement, and, with the use of multiple regression technique, examine whether attendance rates or achievement levels can be forecasted by the frequency of bullying in a given school district. This may open the door to further research in an effort to combat the problems associated with school bullying in the sample district and beyond.

This study aimed to help districts and schools gain a deeper understanding of relationships between the frequency of bullying in a school and a school's student

attendance rates and achievement levels. Understanding the relationship between these variables may create a sense of urgency within the district to develop programs aimed at reducing the incidence and prevalence of bullying in order to create safe and supportive learning environments.

Summary

Educational leaders are faced with many challenges and are charged with fostering continuous improvement in their schools. Bullying is a major obstacle that can impede a school's ability to improve its social and academic climate. In order to effectively minimize school bullying, it is helpful to understand as much as possible about the bullying that is taking place and potential consequences associated with school bullying. This study was designed to help build a deeper understanding of school bullying and foster discussions that could lead to positive social change. Section 2 of this study includes an extensive review of the relevant professional literature. In Section 3, I focus on the methodology of the study and how the quantitative data were gathered and analyzed.

Section 2: Literature Review

Introduction

The challenges associated with bullying can be difficult for schools to manage. Teachers, counselors, administrators, and parents have become increasingly aware of how bullying can be damaging not only to the individuals involved, but also to the entire school and educational climate (Vivolo, Holt, & Massetti, 2011). Accordingly, the literature review addresses the entire spectrum of school bullying.

The literature review for this study discusses three themes of the relevant literature: (a) causes and characteristics of bullying, (b) negative consequences potentially associated with bullying, and (c) other factors related to attendance and achievement.

I used Google Scholar, the Walden University Library (EBSCO Host), and ProQuest research databases to search for relevant literature between 2011 and 2016. Search terms included *bully, bullying, attendance, achievement, school bullying,* and *school violence.* As research indicated authors' names that appeared to be connected to relevant topics, those names were used as search terms as well. I also used reference lists from articles and text book chapters to locate relevant authors and articles. Electronic copies of related dissertations from numerous institutions and hard copies of books (both purchased and checked out from public libraries) were also used to shape the review of the literature. For each potential information source that I examined, several factors were considered when determining whether or not the source (article, book, or another source) would be included in the literature review of this study. Three of the most important

criteria were: publication date, relevance to the topic of the study, and relevance to the sample district.

Causes and Characteristics of Bullying

In addition to the learned social behavior and impact of family relationships associated with SLT, school districts are likely to be interested in other factors that potentially cause or promote bullying so that the district can take calculated actions to limit bullying within its schools. Despite large-scale efforts to combat bullying, children routinely list relationships within peer groups as the primary factor causing them to feel unsafe at school (Cowie, 2011). As Olthof and Goossens (2008) pointed out, children have a need to feel accepted, and this need is one of their behavioral motives. For example, Olthof and Goossens found that children's bullying behavior to be positively related to their desire to be accepted. Resiliency and caring relationships can help children overcome family circumstances that may be less than ideal; evidence shows that positive relationships at school, in the community, or within peer groups offer environments through which children can thrive and grow socially (Laursen, 2011). It is important to understand that a positive school climate is associated with lower levels of bullying and dangerous behavior (Klein, Cornell, & Konold, 2012; Ma, 2002; Weissbourd & Jones, 2012), while negative school environments have been shown to be risk factors for bullying (Ball et al. 2008). This information can potentially be extremely valuable for educators who want to better understand the causes and effects of bullying.

Characteristics of Bullies and Bullying Victims

The focus of this study is on how the frequency of bullying within a school is related to attendance rates and academic achievement levels within that school. While it is important to understand important characteristics of bullying victims; it is equally important to take a broader view of the bullying phenomenon, including bullies themselves.

Not all bullies are the same. However, research does point to some similar characteristics that are shared by many bullies. Family dynamics such as education and income within a household have been connected to bullying. For example, Shetgiri, Lin, Avila, and Flores (2012) found that, in comparison with people who are not bullies, a higher percentage of bullies came from households with lower income, without two parents, and without parents who had completed high school. The long history of research into aggression and antisocial behavior suggests that bullies often come from troubled families where verbal and physical aggression by adults are observed and modeled by children (Olweus, 1995; Patterson, 2002). Furthermore, Patterson (1986) wrote that children's anger and poor self-esteem may have their roots in parental mismanagement. Keelan, Schenk, McNally, and Fremouw (2014) explored the impact of social relationships on bullying and found that participants who were involved in bullying were more likely to have less family security and engagement than participants who were not involved in bullying. Espelage and Rose (2012) also noted that factors connected to involvement in bullying may be related to interactions between an individual and his or her family, peer group, school community, and societal norms. Parental overprotection

predicted children who were more likely to be victims of bullying; while parental responsiveness predicted lower bullying rates for those children (Georgiou, 2008). Some evidence even shows that parental praise and positive reinforcement help to predict child displays of prosocial behavior (Domitrovich & Bierman, 2001). Positive parental behaviors and management serve as a protective shield for children against bullying and from becoming victims of bullying (Wong, 2009). If parents do not support their children or offer emotional engagement with them, children may try to force their involvement through disruptive or violent behavior that requires parental involvement or intervention (McAdams, Foster, Dotson-Blake, & Brendel, 2009). McAdams et al. (2009) explained that it is through direct interactions with parents or guardians that children learn to manage personal responsibility or power. Children who engage in bullying behavior have often been exposed to violence at home or in their family lives and learn through observation how to manage their anger, stress, or another person's aggression (Gourneau, 2012). If children's interactions with parents are positive and they feel accepted, they may be less likely to seek attention or acceptance in negative ways such as bullying.

Rigby and Slee (1991) found that bullies do not have lower levels of self-esteem than other students and that bullying does not seem to be the result of academic struggles. It is more common for male students to participate in bullying than female students (Branwhite, 1994; Ma, 2002; Meland, Rydning, Lobben, Breidablik, & Ekeland, 2010). Male bullies tend to engage in more overt physical or verbal aggression, while female bullies tend to use tactics that socially exclude, ostracize, or humiliate their victims (Wong, 2009). Bullies tend to choose victims who are their peers and are in the same

grade or class because they know them and often come into contact with them (Beaty & Alexeyev, 2008). According to Juvonen and Graham (2014), bullying is often driven by opportunities for dominance that peak at times of social reorganization such as the transition between elementary school and middle school or the transition between middle school and high school. Students in those transition stages may be more likely to engage in bullying.

Anyone can be a victim of school bullying. There is no precise way to predict who will be a victim, but research does point to certain populations that are more likely or less likely than other populations. Victims of school bullying tend to have lower self-esteem than other students and often display some degree of social anxiety (Slee, 1994). Victims are often physically smaller and more sensitive than their peers (Beaty & Alexeyev, 2008). Some students are targeted as bullying victims due to physical appearance or limitations such as obesity, wearing glasses, or speech impediments (Farrington, 1993; Lumeng et al., 2010). Ma (2002) noted that students with better academic standing were more likely to be victims of bullying than students who have experienced less academic success. Research also suggests that family relationships during childhood are linked to victimization. For example, Bowes, Maughan, Caspi, Moffitt, and Arseneault (2010) found that children who received less warmth from their mother were more likely to be victims of bullying. Peguero (2011) found that Asian Americans and Latin Americans are less likely to be victims in school than White Americans. The idea that any student could be a victim is a challenge for schools and districts that hope to limit bullying and its effects. This problem is compounded by

Rudolph, Troop-Gordon, Hessel, and Schmidt's (2011) findings that while many students might appear to be recovered after being victims of bullying, some of the symptoms, and potentially increased sensitivity, continue to exist after bullying has stopped. This means that schools are tasked with overcoming the challenges presented by current bullying as well as bullying that has occurred in the past.

Negative Consequences Potentially Associated With Bullying

Violence and victimization within a school have been linked to problems such as limited academic success and truancy (Bradshaw, Waasdorp, Goldweber, & Johnson 2013; Nakamoto & Schwartz, 2010; Peguero, 2011). This concept can be illustrated by examining the negative consequences that are associated with bullying in schools.

Consequences Related to Attendance

School absenteeism is a large problem in American school systems (Epstein & Sheldon, 2002). Frequent or extended absenteeism is often associated with psychiatric disorders such as conduct disorder, school phobia, even as a consequence of others' actions or behaviors at school that students are avoiding so as not to be victimized (Wood et al., 2012). Wood et al.'s (2012) longitudinal study provided empirical support for the observation that increased absenteeism among antisocial students led to increased levels of psychopathology over time; in addition, frequent absenteeism among students avoiding antisocial students and a stressful school climate was linked to increased depression and anxiety over time. The important message for districts is that if absenteeism is not addressed, it could exacerbate or trigger mental health problems in the

student population, potentially perpetuating the coercive process cycle of bullying and victimization of teachers and students (Eddy et al., 2000; Landrum, 1992).

One root cause of these consequences is that students who are victims of bullying report feeling less safe at school (Varjas, Henrich, & Meyers, 2009). Students who report being the victim of bullying feel far less safe at school than students who did not report being victimized (Varjas et al., 2009). In some instances, even students who have not been personally victimized, express a very deep fear of being bullied that often causes them to choose not to attend school in an effort to avoid victimization (Astor, Benbenishty, Vinokur, & Zeira, 2006). In addition to feeling unsafe at school, bullying can lead to social humiliation. Possible outcomes of the humiliation associated with bullying include poor attendance as many students responded to humiliation with aggression or avoidance (Frey & Fisher, 2008). Victims of bullying often experience decreased interest in academics and avoid attending school in order to avoid being bullied (Slee, 1994). It is estimated that approximately 160,000 American students are absent from school each day due to fear of bullying (Karell, 2011). Smith, Talamelli, Cowie, Naylor, and Chauhan (2004) found that victims of bullying, whether males or females, more often missed school than nonvictims, (sometimes because of bullying. Dunne, Sabates, Bosumtwi-Sam, and Owusu (2010) conducted a case study that yielded similar results, finding that bullying is associated with increased absenteeism in male and female students. Bullying can also lead to health problems that may cause students to miss school; for example, Ramya and Kulkarni (2011) found that victims of bullying (47.3%) were more than twice as likely as nonvictims (20.2%) to complain about health problems.

Bullying is also correlated with dropping out of high school. In fact, Cornell, Gregory, Huang, and Fan (2013) found that levels of teasing and bullying reported by ninth grade students and teachers were predictive of future dropout rates. This potential decrease in attendance in schools where bullying is common represents one possible negative consequence of bullying.

Consequences Related to Achievement

Bullying has a negative impact on school development and success (Elinoff, Chafouleas & Sassu, 2004). In fact, Carney and Hazler (2010) demonstrated that victims of bullying experience a variety of social or emotional challenges that can negatively impact their scholastic and learning experiences. Hazel (2010) found that bullying can negatively impact a victim's ability to concentrate in class. Actions associated with bullying have a significant impact on a student's desire to succeed and his or her ability to progress academically and socially (Karell, 2011). Schneider, O'Donnell, Stueve, and Coulter (2012) revealed that victims of bullying report lower school performance and school attachment while reporting elevated levels of distress. Hammig and Jozkowski (2013) also made a connection between bullying and achievement; they found that previous victimization was negatively associated with academic performance. Limbos and Casteel (2008) note that low academic performance and a lack of bonding with a school or community are also risk factors associated with school bullying. Limbos and Casteel found that an Academic Performance Index of "below basic performance" was significantly associated with violence within a school.

Students' level of social-emotional perception related to their being victimized by bullies can have a deleterious effect on their reading performance (Sideridis, Antoniou, Stamovlasis, & Morgan, 2013). "[A]s these students are victimized, their reading difficulties may worsen…[which] increases their risk of social isolation over time, reducing their peer supports and so furthering their victimization and its attending impact on their academic and behavioral functioning" (Sideridis et al., 2013, p. 239). In order to prevent long-term academic underperformance of both bullies and their victims, not only will districts need to understand the SLT role of aggression in relation to achievement, they will also need to implement scientifically-validated bullying interventions to reduce aggression in order to increase or improve overall academic achievement among the student population (DeBaryshe, Patterson, & Capaldi, 1993). As McEvoy and Welcker (2000) and Nelson, Benner, Lane, and Smith (2004) observed, in order for schools to address academic failure in students with social-emotional problems, they must not treat issues related to achievement separate from issues related to antisocial and aggressive behavior. The overall school climate (i.e., social/behavioral) must be changed by educators, not just student attitudes and beliefs about bullying and aggression.

When a school does not properly handle bullying, the safety of all its students may be compromised by allowing a potentially dangerous environment to interfere with student achievement (Beaty & Alexeyev, 2008). Bullying can be harmful to people other than just those who are bullied. School bullying affects the lives and educational opportunities of many students because it infringes on other peoples' space and teachers' time, which disrupts the teaching and learning process (Glover, Gough, Johnson, &

Cartwright, 2000). Bullying can also have an impact on school climate. Mehta, Cornell, Fan, and Gregory (2013) found that perceptions of a bullying climate within a school were associated with lower levels of student commitment and engagement and lower levels of involvement in school activities. Forrest, Bevans, Riley, Crespo, and Louis (2013) also acknowledged the connection between bullying and school climate, noting that a lack of exposure to bullying was associated with higher levels of school engagement and stronger bonds between teachers and students, while additionally finding a connection between bullying and school achievement.

When bullying infringements occur, many teachers do not feel that they have the time to both cover their assigned curriculum and deal with school bullying (Mishna, Scarcello, Pepler, & Wiener, 2005). Evidence also indicates that teachers at all school levels underestimated the number of students involved in frequent bullying (Bradshaw, Sawyer, & O'Brennan, 2007). In addition, teachers may be unaware of the link between boredom in school and bullying, exacerbated by the use of ineffective pedagogical approaches to learning (Horton, 2011). Bibou et al. (2012) indicated that students reported lacking confidence that their teachers were able to effectively resolve conflicts. Increased class sizes and mounting demands on teachers can also contribute to bullying by causing teachers to have less time to pay attention to relational issues within a class or school (Horton, 2011).

This problem is compounded by the observation made by Beaty and Alexeyev (2008) that some students choose not to report bullying like behavior if they perceive that teachers are not consistent in their responses or interventions when bullying occurs. If

bullying is going unreported, it is hard for a school to take appropriate action. Therefore the negative consequences associated with bullying in schools are less likely to be successfully minimized. Research has linked attendance and achievement. For example, Gump (2005) discovered that a negative correlation exists between absences and final grades such that when absences increase, grades generally decrease. Therefore, it is possible that by predicting one of the outcome variables, it is automatically related to both outcome variables. Christensen (2008) reported that about 30% of American students have been involved in bullying in some capacity. This percentage helps to highlight the potential scope of the problem(s) that bullying might cause, especially in middle schools when bullying infractions tend to peak in middle school (Carlyle & Steinman, 2007).

Other Factors Related to Attendance and Achievement

While the focus of this study is on how bullying may be affecting the sample district, it is important to acknowledge that other factors within a school can significantly affect attendance and achievement as well. This study includes two other such factors to help identify bullying's unique relationship with attendance and achievement. Potential language barriers and the SES of each school in the district join bullying as predictor variables in this study. These additional predictor variables are being added so that the study can identify, through multiple regression equations, the relationship bullying has with the outcome variables, that extends above and beyond the relationships that exist between the other predictor variables (SES and language barriers) and the same outcome variables (attendance and achievement).

SES, measured by the percentage of students within a school who receive FRL, is included in this study because there is a strong link between SES level and the variables of achievement and school attendance. In fact, poverty, as reflected by SES has been found to hinder high achievement (Burney & Bielke, 2008). Students from low-income households might have limited access to things that can be expensive such as tutoring or lessons; as well as to potentially expensive technology such as laptops or tablets, which could hinder their academic success. There are also many educational programs and opportunities such as field trips or educational camps that may take place outside of the school, and outside of school hours, to which students from lower income households may have less access. SES can also be tied to attendance. A student's attendance level is correlated with the family's SES level; as McCarthy (2000) reported, higher income seems to translate to greater attendance levels, and Forrest et al. (2012) reported that low SES was associated with higher absence rates. Peguero's (2011) work also supported the connection between SES and attendance; finding that FRL rates are proportional to drop-out rates within a school.

The demographics within this district, which is located in a suburban area in Georgia, are wide ranging. One demographic measure that may be closely related to attendance and achievement is the number of students in each school for whom English is not their first language. The county in which this study was be conducted has recently experienced a significant increase in the percentage of households in which a language other than English is spoken. According to the United States Census Bureau (State and County Quick Facts, n.d.), the percentage of households in the county in which a

language other than English was spoken grew from 5.6% in the 2000 census to 9.8% in a report covering the five-year period ending in 2012. Ardasheva, Tretter, and Kinney (2012) found that English proficiency is a predictor of student achievement in schools. A review of the United States Department of Education databases reveals that students with LEP demonstrated inferior levels of reading and math proficiency than any other subgroup that was analyzed in the 2004-2005 school year (Fry, 2007). The American Federation of Teachers (2006) reported a link between language barriers and school attendance, noting that students with LEP have dropout rates that are among the highest in the United States. For example, The Education Trust (2005) reported that in the academic year 2002-2003, the state of Georgia had a 38% graduation rate for LEP students compared to the 62% graduation rate of all students.

Conclusion

While there are many things that can be considered causes of bullying; research points to observed or learned behavior, relationships within peer groups, and school climate as major factors that can contribute to bullying. No two bullies or victims are exactly alike, but research shows that there are some common characteristics of bullies and victims of bullying. Common characteristics among school bullies include coming from homes with lower incomes and being in transition between schools (Juvonen & Graham, 2014; Shetgiri et al., 2012). Research also showed that males are more likely to engage in bullying, especially physical bullying than females. Characteristics of bullying victims include having lower self-esteem than their peers, being physically smaller than their peers, and having other physical limitations such as obesity or speech impediments.

Research indicated several negative consequences that are potentially associated with bullying. School violence and bullying have been connected to a lack of academic success and challenges with truancy. Frequent bullying has also been linked to students reporting reduced concentration in class and feeling less safe at school. Given these potential negative consequences, further research on causes of bullying, effects of bullying, and successful strategies for limiting bullying is recommended.

Section 3: Research Method

Introduction

This research study used a quantitative method to investigate how the prevalence of bulling incidents within a school relates to the attendance rates and achievement levels of the school's student body. I used archival data and conducted correlations and regression analyses. This archival data was available at the school level (i.e., the total number of bullying incidents reported at the school, a school level achievement index, and so on) but was not available for individual students within a school.

Research Design and Approach

A quantitative research design was used in this study. Each school in the district is unique. Each school has its own culture, climate, and demographic makeup. It is possible that other variables (aside from bullying) within a school, such as the school's SES (measured by the number of students receiving FRL) and potential language barriers (measured by the number of students labeled as having LEP), could impact attendance or achievement at each school. I attempted to account for those extraneous variables by including them in the regression equations as predictor variables, in order to control and explain the variance associated with SES and LEP.

There were two parts to my data analysis. In the first part, in order to understand the relationships among the variables in my study, I examined the correlations among five variables: bullying, SES, LEP, attendance, and academic achievement. Each of these variables is described further in the Instrumentation and Materials section.

In the second part, I used regression analysis to examine whether the frequency of bullying in a school predicts achievement rates and attendance levels. In the regression analysis, I included the variable of substantive interest to the study's research questions (prevalence of bullying incidences) as well as two other variables (SES and LEP). The effects of SES and LEP on achievement levels or attendance rates are not of theoretical interest in this study, but are included in the regression models because they are likely to account for variance in achievement levels or attendance rates. By including these two additional predictor variables, I can account for the differences in SES and LEP across the schools in the district.

I conducted two multiple linear regression analyses (one for each outcome variable – attendance and achievement) to measure the effect of each predictor variable on the selected outcome variable while also measuring bullying's unique relationship with the selected outcome variable. The goal of this approach was to measure bullying's impact on the outcome variables that go beyond the other predictor variables (Cohen, Cohen, West, & Aiken, 2003). In the case of this study, those other predictor variables were SES and LEP within each school in the district

I chose this research approach because it was the most appropriate given my research questions and the data to which I had access. Instead of using a correlational approach, I might have considered employing a quasi-experimental design. With a quasi-experimental design, I could have compared the prevalence and incidence of bullying before and after implementation of the district-level bullying system and thus determine whether there was a reduction in reported bullying as well as whether a bullying

intervention program impacts achievement and attendance rates. Unfortunately, this design was not possible given the nature of the data that were available from the district. The school district did not track incidences of bullying with ODRs before the 2011-2012 academic year. Therefore, there were no data that could be used as a baseline to represent bullying prevalence before the new system of tracking incidences of bullying with ODRs. Moreover, the district has not selected and implemented any single district-wide bullying intervention program yet that could be evaluated in a treatment-control "business as usual" condition.

Instead, I chose an approach that examined correlations among bullying incidences, local school contexts (SES, LEP), and potential outcome variables (achievement and attendance). In addition to these correlational analyses, I conducted multiple regression analyses, a powerful technique that permits a researcher to predict an unknown outcome value from several known predictor variables (Tabachnick & Fidell, 2013), which is useful to examine the unique relationship between the frequency of bullying within a school and the outcome variables of attendance and achievement while accounting for other factors in the school (SES and LEP).

Setting and Sample

The population of this study was the 49 schools in a suburban Georgia school district. The district has 29 elementary schools, 11 middle schools, and nine high schools. The actual sample was the students in the district's schools during the 2011-2012 school year. No individual student data was used. Aggregated archived school level data was used for this study rather than individual student data. School level data was used because

it aligned with the study's research questions and because it protected the privacy of individuals. The district's 49 schools were the unit(s) of analysis in this study. In this study, I examined the potential impact of bullying in each school. This study used convenience sampling. This is the district in which I am employed. There is evidence that a problem with bullying exists within this district. For these reasons, this district was chosen to be a good fit for this study.

In an effort to ensure that the sample size (49 schools) would be appropriate for this study, I used G*Power to conduct a set of power analyses to determine the observed power I can expect in my research (Faul, Erdfelder, Lang, & Buchner, 2007). This power analysis was conducted to determine the probability of rejecting the null hypothesis when it is, in fact, not true (i.e., the probability of avoiding a Type II error; Cohen et al., 2003). To conduct the power analysis, I set $\alpha = .05$ (two-tailed) and used my expected sample size ($N = 49$). Additionally, I used Cohen's guideline for a medium effect size ($f^2 = 0.15$; Cohen, 1988). A medium effect size is reasonable given the exploratory nature of this study and corresponds to a $R^2 = .13$ (i.e., the set of predictor variables accounts for 13% of the variance in either of the dependent variables, attendance and achievement; Cohen, 1988). Using these values ($\alpha = .05$, $N = 49$, $f^2 = 0.15$), my potential observed power would be .57, indicating a 57% probability of rejecting the null hypothesis when it is not true. Using these same values, I calculated the potential observed power of the test that one predictor variable (e.g., bullying) accounts for a significant amount of variance over and above the other two predictor variables (e.g., LEP and SES). In this case, assuming

bullying has a medium effect ($f^2 = 0.15$) my potential observed power would be .65, indicating a 65% probability of rejecting the null hypothesis when it is not true.

Since I did not know the precise effect size to expect, I also conducted a sensitivity power analysis to determine, with the given alpha and sample size, what effect size I would need to get an observed power of .80. I would need between a medium and large effect size ($f^2 = .24$), corresponding to an $R^2 = .19$ (Cohen, 1988). This means that if, in the population, the set of predictor variables accounted for 19% or more of the variance in attendance (or achievement), then I would have an 80% probability of rejecting the null hypothesis. Additionally, to achieve a power of .80 in the test that one predictor variable (bullying) accounts for a significant change in amount of variance accounted for by the other two predictor variables (LEP and SES), I would need an effect size $f^2 = .17$, corresponding to $R^2 = .15$ (Cohen, 1988).

Sample District Demographics

The sample district in this study is located in a suburban area in Georgia. The district has 29 elementary schools, 11 middle schools, and nine high schools that were included in this study. I collected data related to the frequency of bullying, attendance rates, and achievement levels in each school (Table 1). I also collected data related to my secondary predictor variables, SES and LEP (Table 2). All of the data that I used for this study were either publicly available or collected by the district and released to me for utilization in this study.

Table 1

School Attendance Rates, CCRPI Scores, and Reported Bullying Incidents (per 100 students) for the 2011-2012 School Year

School ID	% of Students missing < 5 days	CCRPI	Bullying incidents (per 100 students)
1	69.4	71.4	1.91
2	57.4	77.4	1.91
3	59.5	79.8	3.40
4	64.0	89.7	0.60
5	69.1	92.8	0.30
6	63.4	79.2	1.50
7	62.6	83.4	1.29
8	47.5	80.3	0.63
9	72.3	91.3	2.15
10	66.0	72.3	0.00
11	68.7	85.2	1.99
12	60.8	85.5	0.82
13	62.6	87.1	0.30
14	55.6	85.8	2.12
15	60.3	64.2	0.36
16	60.6	88.1	0.62
17	69.2	94.1	0.00
18	61.1	86.5	0.94
19	69.6	85.2	0.94
20	52.2	89.6	0.30
21	58.6	87.4	0.97
22	69.8	80.0	0.65
23	62.1	92.7	2.44
24	61.2	91.2	3.44
25	63.2	84.4	0.75
26	55.1	82.8	0.49
27	61.9	88.5	1.31
28	62.7	80.3	0.63
29	63.4	89.5	0.00
30	76.3	83.1	2.79

(table continues)

School ID	% of Students missing < 5 days	CCRPI	Bullying incidents (per 100 students)
31	67.4	95.8	1.53
32	59.2	87.2	1.58
33	57.4	82.9	3.93
34	62.7	78.9	4.27
35	53.6	83.9	3.47
36	64.3	89.6	4.38
37	56.8	85.2	1.45
38	58.6	78.5	4.26
39	62.7	94.2	0.73
40	62.8	85.0	0.39
41	52.8	76.3	4.99
42	56.5	75.3	1.94
43	47.0	67.4	4.17
44	47.3	71.5	1.12
45	47.1	69.9	0.32
46	53.3	84.4	0.99
47	50.4	62.8	1.67
48	61.9	90.9	0.23
49	51.9	79.9	0.64
Mean (SD)	60.41 (6.83)	83.03 (7.80)	1.58 (1.36)

Note. SD = Standard Deviation.

Table 2

School Free/Reduced Lunch and Limited English Proficiency

School ID	% Free/Reduced lunch	% Limited English proficiency
1	57	2
2	34	3
3	63	3
4	42	8
5	25	3
6	68	5
7	45	5
8	76	11
9	59	6
10	66	2
11	49	5
12	80	4
13	56	1
14	39	2
15	76	10
16	31	2
17	46	3
18	55	6
19	53	7
20	36	1
21	57	3
22	85	7
23	81	8
24	23	1
25	67	2
26	44	1
27	68	3
28	77	4
29	49	4
30	62	1

(table continues)

School ID	% Free/Reduced lunch	% Limited English proficiency
31	50	2
32	61	2
33	63	3
34	79	2
35	47	1
36	47	1
37	33	0
38	73	4
39	27	2
40	44	2
41	41	2
42	51	1
43	68	1
44	42	0
45	47	1
46	24	0
47	60	3
48	21	1
49	38	1
Mean (SD)	52.76 (16.93)	3.10 (2.56)

Note. SD = Standard Deviation.

These data (Table 1) indicate that the schools in the sample district's average CCRPI scores were above 80 *(M* = 83.03, *SD* =7.80), which exceeded the statewide average CCRPI score of 74.1 (CCRPI, 2015), and had low incidences of bullying per 100 students during the 2011-2012 school year (*M* = 1.58, *SD* = 1.36). Additionally, these data (Table 2) indicate that schools in the sample district have approximately half of their students on FRL (*M* = 52.76, *SD* = 16.93) and have a low percentage of LEP students (*M* = 3.10, *SD* = 2.56).

Instrumentation and Materials

The data collected from each of the district's 49 schools include (a) district provided archival discipline data demonstrating the frequency of bullying in each school; (b) publicly available attendance data from each school; (c) publicly available CCRPI scores from each school (which is used as the variable to measure achievement); (d) the percentage of students receiving FRL; and (e) the percentage of students who have been identified with LEP. All of the above data were collected for the 2011-2012 school year. Instances of bullying in each school, as indicated by the discipline data, is the primary predictor variable relevant to the study. However, SES and LEP were also used as predictor variables. While SES and LEP are technically considered predictor variables because they are part of the sequential regression formula, it is important to note that they are secondary predictors. Their purpose is not necessarily to be predictors, per se, but rather to act as control variables that help remove nuisance variance in order to offer a clearer look at the direct relation between the primary predictor variable (bullying) and the outcome variables (Tabachnick & Fidell, 2013). CCRPI scores and attendance rates served as outcome variables. The effect of bullying on CCRPI scores was analyzed using a multiple regression analysis. Likewise, the effect of bullying on attendance rates was analyzed in a separate multiple regression analysis.

Primary Predictor Variable: Discipline Data (Bullying)

The school district provided discipline data for all elementary, middle, and high schools within the district for the academic year 2011-2012. These discipline data include ODRs for each school that were coded as bullying by the school. This study did not look

at individual bullies or victims; it focused on the number of bullying instances in each school. A school can have any positive number of referrals (or zero referrals) that were coded as bullying, so this is continuous interval data. A district level administrator agreed to build this report for this study.

Outcome Variable 1: Attendance

Attendance data were collected from publicly available attendance records. Each school's student attendance information for the academic year 2011-2012 was available in the Report Card section of the GOSA website (The Governor's Office of Student Achievement, n.d.), and is listed by school. I measured attendance based upon the percentage of students at each school that missed 5 or fewer days of school (i.e., ratio data). Five days was the number of days chosen because this was the number used on the GOSA School Report Cards. Using the percentage of students that missed more than five days allows me to aggregate the data at the school level and use the cut-off point to create continuous data. This measure is based on total absences. There is no distinction between excused or unexcused absences.

Outcome Variable 2: College and Career Ready Performance Index

CCRPI is an index created by the GaDOE that is intended to assess school performance and achievement. A document created by the GaDOE (2013) indicated that schools receive a CCRPI score each year out of 100 possible points. According to the document, a school's CCRPI score consists of three major components: Achievement (70 points possible), Progress (15 points possible), and Achievement Gap (15 points

possible). Those components are explained in greater detail in the CCRPI section of the GaDOE website (see www.gadoe.org).

According to the GaDOE document, the achievement component is broken into three categories: content mastery, readiness to move to the next level of school, and graduation rate/graduation rate predictor. Content mastery uses data from standardized test results to evaluate a school's instruction. The core instruments used to measure achievement within CCRPI during the 2011-2012 school year were the Georgia Criterion-Referenced Competency Test (CRCT) and the high school Georgia End-of-Course Test (EOCT). Each school year the GaDOE publishes information about the reliability and validity of the CRCT and EOCT (GaDOE, 2012a; GaDOE, 2012b). The GaDOE oversees the development of the CRCT and EOCT and adheres to the *Standards for Educational and Psychological Testing* (1999) as established by the American Educational Research Association, the American Psychological Association, and the National Council on Measurement in Education.

Reliability for each instrument is measured with Cronbach's (1951) alpha coefficient and the Standard Error of Measurement (SEM). Values for Cronbach's alpha reliability coefficient range from zero to one (GaDOE, 2012a; GaDOE, 2012b). According to DeVellis (2003), in order to be considered reliable, an instrument should have an alpha coefficient which is above 0.7. The Cronbach alpha coefficients for the 2012 CRCT tests ranged from 0.86 to 0.94; and Cronbach alpha coefficients for the 2012 EOCT tests ranged from 0.87 to 0.93 for winter 2011 administration, and 0.83 to 0.93 for spring 2012 administration (GaDOE, 2012a; GaDOE 2012b). These reliability measures

are consistent with CRCTs and EOCTs from previous years, suggesting that the CRCTs and EOCTs used in the 2011-2012 school year were reliable (GaDOE, 2012a; GaDOE 2012b).

SEM quantifies the precision of a given instrument in the metric on which scores will be reported. SEM can be useful for quantifying the extent of errors occurring on a test (GaDOE, 2012b). SEM values ranged from 3.15 to 3.68 for winter 2011 EOCTs and 3.17 to 3.67 for spring 2012 EOCTs. For tests with total possible raw scores ranging from 54 to 75, the error bands are reasonably small. This indicates reliability is generally high across various EOCTs (GaDOE, 2012b).

CRCTs and EOCTs are evaluated for content validity in multiple ways. First, a committee assigned by the GaDOE reviews the Georgia Performance Standards (GPS) to establish which skills and concepts should be assessed (GaDOE, 2012a; GaDOE, 2012b). Following the creation of potential test content, teams of Georgia educators examine each potential test item for possible bias, test suitability, alignment with the GPS, and cultural sensitivity (GaDOE, 2012b). Once test items are approved, they are field tested to confirm that they are assessing what they are designed to assess (GaDOE, 2012a; GaDOE, 2012b). Once potential test items are field tested and approved, they may appear on a CRCT or EOCT.

CRCTs and EOCTs are evaluated for construct validity in two ways: item point-biserial correlations and Rasch fit statistics (GaDOE, 2012a; GaDOE, 2012b). Measuring construct validity is a continuous and ongoing process. The item point-biserial correlations are used to show correlations between correct responses on the CRCT or

EOCT and earning a high score on the CRCT or EOCT (GaDOE, 2012a; GaDOE, 2012b). Test items that are found to have a high point-serial correlation may appear on the CRCT or EOCT. Test items that are found to have a lower point-serial correlation are not placed on the CRCT or EOCT, but may go through the content validity process (described in the above paragraph) again (GADOE, 2012b). The Rasch fit statistics are examined throughout the making of the test to ensure that test items fit the measurement model, providing additional evidence of construct validity (GaDOE, 2012b).

The post high school/middle school/elementary school readiness category focuses on academic indicators that have been shown to help students be properly prepared for their next level of school. The graduation rate/graduation rate predictor category calculates a school's four and five year graduation rates.

The score for the progress component is calculated by looking at how many of the school's students are making average or better than average academic progress. This calculation is made using Student Growth Percentiles (SGP). A SGP refers to a student's improvement on standardized tests as compared to a group of other peer students throughout the state of Georgia who have similar patterns of previous academic achievement. Every student's progress can count towards the school's score for the progress component.

The achievement gap component is scored by rewarding points to schools that show progress in closing achievement gaps or having small achievement gaps on state tests. Schools can earn points in this component for the size of their achievement gaps or for their ability to change the size of their achievement gaps, whichever is greater.

CCRPI scores, which are continuous, interval data, were chosen as the measure of achievement for this study because they take a comprehensive look at how schools are performing and measure different levels and types of achievement and accomplishments. For the purpose of this study, overall CCRPI scores are used rather than component scores in order to get a more complete measure of achievement and growth within each school.

Secondary Predictor Variables: Socioeconomic Status and Limited English Proficiency

Although I am primarily interested in understanding whether attendance and achievement are predicted by the frequency of bullying, the study also included two other predictor variables, the percentage of students receiving FRL and the percentage of students with LEP in each school, because these variables have been found in previous studies to affect achievement and attendance (Ardasheva et al., 2012; Burney & Bielke, 2008; Fry, 2007; McCarthy, 2000). The school's SES, measured by the percent of students who receive FRL, and the percent of students with LEP at each school were used as additional predictor variables to help control other extraneous factors, aside from bullying, that might impact attendance or achievement. Both SES and LEP are listed as subgroups within the Indicators and Demographics section of the School Report Cards published by the GOSA.

Data Collection and Analysis

This study used a combination of correlational and regression analyses to examine correlations that exist between variables and to use multiple predictors (bullying, SES,

and LEP) for each outcome variable (achievement and attendance). The software used to conduct the statistical analyses in this study was SPSS (for Windows).

Prior to conducting these correlation analyses, I examined the data to assess whether they conform to the assumptions of the Pearson correlation tests. First, boxplots of each variable were created to understand the spread of the data and to detect outliers. Outliers that were found were examined to determine if there was a data entry error or, if not, whether the case should be removed. Second, each variable was checked for normality by creating a histogram overlaid with a Gaussian curve. Visual inspection for approximate normality was performed, in addition to evaluation of skewness and kurtosis (Tabachnick & Fidell, 2013). Depending on the extent of departure from normality, non-linear transformations of the variable (e.g., logarithmic) were tested to see if they normalize the distribution.

For multivariate comparisons, scatterplots were generated for each pairwise combination of the variables (i.e., each cell in Table 3 below). Each scatterplot was visually inspected for the presence of outliers. Additionally, Mahalonabis distance was calculated to detect outliers that are greater than the critical χ^2 value associated with the degrees of freedom equal to the number of IVs; with the idea that any outliers with χ^2 values greater than the critical X^2 would be removed (Tabachnick & Fidell, 2013). The scatterplots were also inspected to confirm that the two variables' relationship does not appear non-linear (e.g., no cubic or quadratic trends) and that there is equal variance across the range of the measures (i.e., homoscedasticity). After computing the correlation matrix, bivariate correlations were checked for their likelihood of creating multi-

collinearity problems during later regression analyses (e.g., $r > .70$; Tabachnick & Fidell, 2013). In addition to tests of significance of the Pearson correlation, I calculated their effect size (r^2) and computed 95% confidence intervals around the point estimates.

Descriptive Data

Attendance rates, measured by how many students missed 5 or fewer days of school (5 days was chosen because that is the measure used on the GOSA school report cards), numbers of students receiving FRL, students with LEP, and CCRPI results are public data that is available for anyone to review.

Correlational Analysis

Pearson product moment correlation tests were calculated in order to examine the strength and direction of correlations that exist between all variables. A correlation matrix was created to display the correlation coefficients for each variable in this study (see Table 3).

Regression Analysis

The regression procedures make it possible to use multiple predictor variables with each of the outcome variables. I conducted two sequential (also known as hierarchical) multiple linear regressions (two regression equations), one for achievement, and a separate one for attendance. Both regression equations used the same set of predictor variables.

1. The first regression equation, to understand the effect of bullying on achievement, is

$$Y = A + mX_1 + mX_2 + mX_3 + E$$

where Y = achievement, A = intercept, X_1 = FRL, X_2 = LEP, X_3 = bullying, E = error. X_1 and X_2 are included in the regression model to control the effects of those variables on achievement: i.e., covariance (Tabachnick & Fidell, 2013).

2. The second regression equation, to understand the effect of bullying on attendance, is

$$Y = A + mX_1 + mX_2 + mX_3 + E$$

where Y = attendance; the other variables are the same as the first equation.

The significance of the overall regression equation was tested. Data were prescreened to ensure that underlying assumptions of the statistical procedures were met. Linearity, normality, homoscedasticity, and co-linearity assumptions were all checked, and adjustments to the analysis procedure were made as necessary, as detailed in section 4 of this study.

In each regression analysis, variables were entered sequentially. For example, X_1 (FRL) and X_2 (LEP) were entered in the first step, then, X_3 (bullying) was entered to see what added predictive value bullying (X_3) has on Y (Attendance). This made it possible to see the effect of bullying on achievement and attendance, the outcome variables, while simultaneously accounting/controlling for whatever initial statistical noise FRL and LEP differences among schools might have on whether bullying predicts attendance and achievement in this suburban Georgia school district (Cohen et al., 2003; Tabachnick & Fidell, 2013).

Prior to conducting these multiple regression analyses I conducted a series of diagnostics. The goal of these diagnostics was to assess whether the data show features

that might be problematic given the multiple regression assumptions. The results of my diagnostics are discussed in the remainder of this section.

One concern for multiple linear regression is the number of predictors relative to the number of cases. The rule of thumb is to have at least 10 cases per IV (Van Voorhis & Morgan, 2007). Because I have 3 IVs, I would, therefore, need a minimum of 30 participants. For this study, I have 49 schools as the unit of analysis, so the number of predictors to cases ratio is sufficiently addressed.

Univariate and multivariate outliers were examined, identified, and evaluated prior to regression analysis (this procedure was described in the section on correlations). Multi-collinearity/singularity issues were also partly addressed during prior analyses in which large bivariate correlations were identified and managed. Additionally, during regression analysis, multi-collinearity issues were checked using SPSS collinearity diagnostics, including computation of tolerance (Tabachnick & Fidell, 2013). Residual scatterplots (residuals plotted against predicted Y values) were created for each regression equation. The shape and distribution of the residual scatterplots were examined to identify potential concerns regarding failure of normality, nonlinearity, or heteroscedasticity with the plan that if normality or nonlinearity concerns arise, different non-linear transformations would be attempted. Heteroscedasticity issues, if present, would be assessed for the severity; heteroscedasticity does not necessarily invalidate the results, although it might weaken them (Tabachnick & Fidell, 2013). Finally, these residual scatterplots were also used to ensure there are no outliers in the solution.

Protection of Participants' Rights

I was able to gain permission from the school district before doing research in their schools. A formal application was sent to the district superintendent asking for his permission to use the district's data in this study. I have met the requirements of the Walden University Institutional Review Board (IRB), my IRB number is 0101196. Measures that were taken to protect privacy and confidentiality include not identifying the district or the schools. The district is only identified as a suburban school district in Georgia. The schools were assigned school numbers for identification purposes in this study. This study adheres to the sample district's guidelines for research that is conducted within their schools. All data received from the district will be kept private and will be destroyed after a five-year period.

Section 4: Results

Introduction

This study used a combination of correlational and regression approaches to examine relationships that may exist between bullying and the outcome variables (attendance and achievement) in a sample school district in a suburban area in Georgia. In this section, I will review the research questions and report the results of the statistical analyses.

Statistical Analysis

In order to understand the relationships among the variables in my study, I examined the descriptive statistics and correlations among five variables: bullying, SES, LEP, attendance, and academic achievement.

Correlational Analysis.

I examined the data to assess whether they conform to the assumptions of the Pearson correlation tests. Boxplots of each variable were created to understand the spread of the data and to detect outliers.

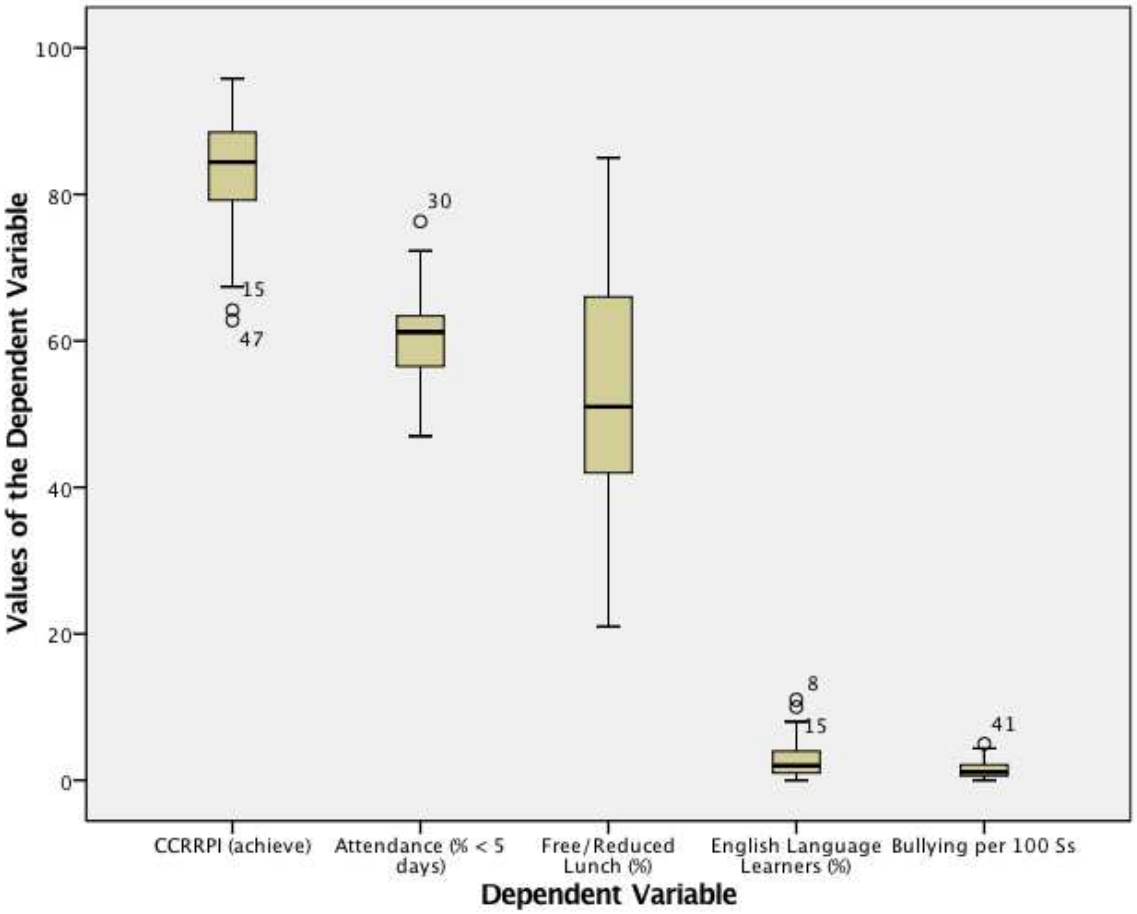

Figure 1. Boxplots for each variable

Boxplots were computed for each of the five variables. Four of the five variables had outliers (defined as 1.5 times the interquartile range). However, these outliers are not far beyond the interquartile range (Figure 1). I examined the data to ensure there were not data entry errors creating the outliers. No errors were found. Because of the small number of outliers in each variable, there was not a strong justification for removing those data. Therefore, I did not remove any cases.

I created histograms for each of the five variables and examined their distribution and departures from normality using visual inspection and Kolmogorov-Smirnov (K-S)

test of normality. Two of the variables were strongly positively skewed and therefore departed from normality as indicated by both their histograms and K-S tests. Percentage of LEP was positively skewed and departed from normality $D(49) = 0.21$, $p < .001$ (the actual value was $p = 0.000011$), as did bullying (per 100 students) $D(49) = 0.16$, $p = .004$. Q-Q plots were also created and examined; they indicated the same pattern: LEP and bullying had trends that departed from normality. To rectify these departures, I used a log transformation on both LEP and bullying. I visually inspected Q-Q plots on the transformed variables and conducted additional K-S tests. Transforming the LEP variable reduced its positive skew and resulted in a non-significant K-S test, $D(49) = 0.13$, $p = .06$. Likewise, transforming the bullying variable reduced its positive skew and resulted in a non-significant K-S, $D(49) = 0.10$, $p = .20$. For the remaining data analysis, I used these log-transformed variables.

I conducted Pearson product moment correlation tests in order to examine the strength and direction of correlations that exist between all variables. A correlation matrix was created to display the correlation coefficients for each variable in this study (Table 3).

Table 3

Correlation Matrix

	FRL	LEP (log)	CCRPI	Attendance	Bullying
FRL	1.00				
LEP (log)	.533***	1.00			
CCRPI	-.35*	.05	1.00		
Attendance	.13	.35*	.45**	1.00	
Bullying (log)	.17	-.10	-.15	-.10	1.00

Note. $N = 49$
* $p < .05$
** $p < .01$
*** $p < .001$

The correlational data (Table 3) showed some significant relationships among the variables. LEP and FRL were significantly correlated. Schools with a higher percentage of students that are LEP also have a higher percentage of FRL students. Achievement is correlated with both attendance and FRL: schools with high achievement scores (CCRPI) have high student attendance and a lower percentage of FRL students. Attendance and percentage of LEP students were also correlated, indicating schools with a higher percentage of LEP students also had higher attendance rates. Bullying was not significantly correlated with any of the other variables. This indicates there is not a strong relationship between reported bullying incidents and achievement scores nor attendance rates. This suggests that the planned regression analysis will likely not show that incidents of bullying per school is a significant predictor of a school's achievement or attendance rates.

Regression Analysis

I used regression equations to examine whether the frequency of bullying in a school predicts achievement rates and attendance levels. Although I am most interested in understanding whether attendance and achievement are predicted by the frequency of bullying, the study also includes two other predictor variables, the percentage of students receiving FRL and the percentage of students with LEP in each school, because these variables have been found in previous studies to be related to achievement and attendance (Ardasheva et al., 2012; Burney & Bielke, 2008; Fry, 2007; McCarthy, 2000). While SES and LEP are technically considered predictor variables because they are part of the sequential regression formula, their role in this study is not necessarily to serve as predictors. Instead, they act as control variables that help remove nuisance variance in order to offer a clearer look at the direct relation between the primary predictor variable (bullying) and the outcome variables (Tabachnick & Fidell, 2013). CCRPI scores and attendance rates serve as outcome variables.

Initial data treatment and checking. Data was prescreened to ensure that underlying assumptions of the statistical procedures were met. Linearity, normality, homoscedasticity, and collinearity assumptions were checked, and adjustments to the analysis procedure were made as necessary. Normality of the predictor and outcome variables were checked and fixed as reported in the previous section. None of the bivariate correlations (Table 3) were high enough to suggest there would be multicollinearity problems that would need to be fixed before conducting the regression. I also computed scatterplots for each of the pairwise comparisons in order to check that

there were no nonlinear relationships and that they exhibited homoscedasticity. The scatterplots did not reveal any obvious nonlinear relationships and did not suggest heteroscedasticity of the variables. These analyses suggest the multiple linear regression is appropriate to model the data. I also checked Mahalonabis distance to determine whether there were any multivariate outliers that might need to be removed. For each regression equation, Mahalonabis distance was calculated and checked to ensure that values did not exceed the χ^2 critical value (critical χ^2 (3) = 7.815). The scatterplots did not suggest any extreme outliers, and none of the Mahalonabis distance values in either of the two regression questions were above the critical χ^2 value.

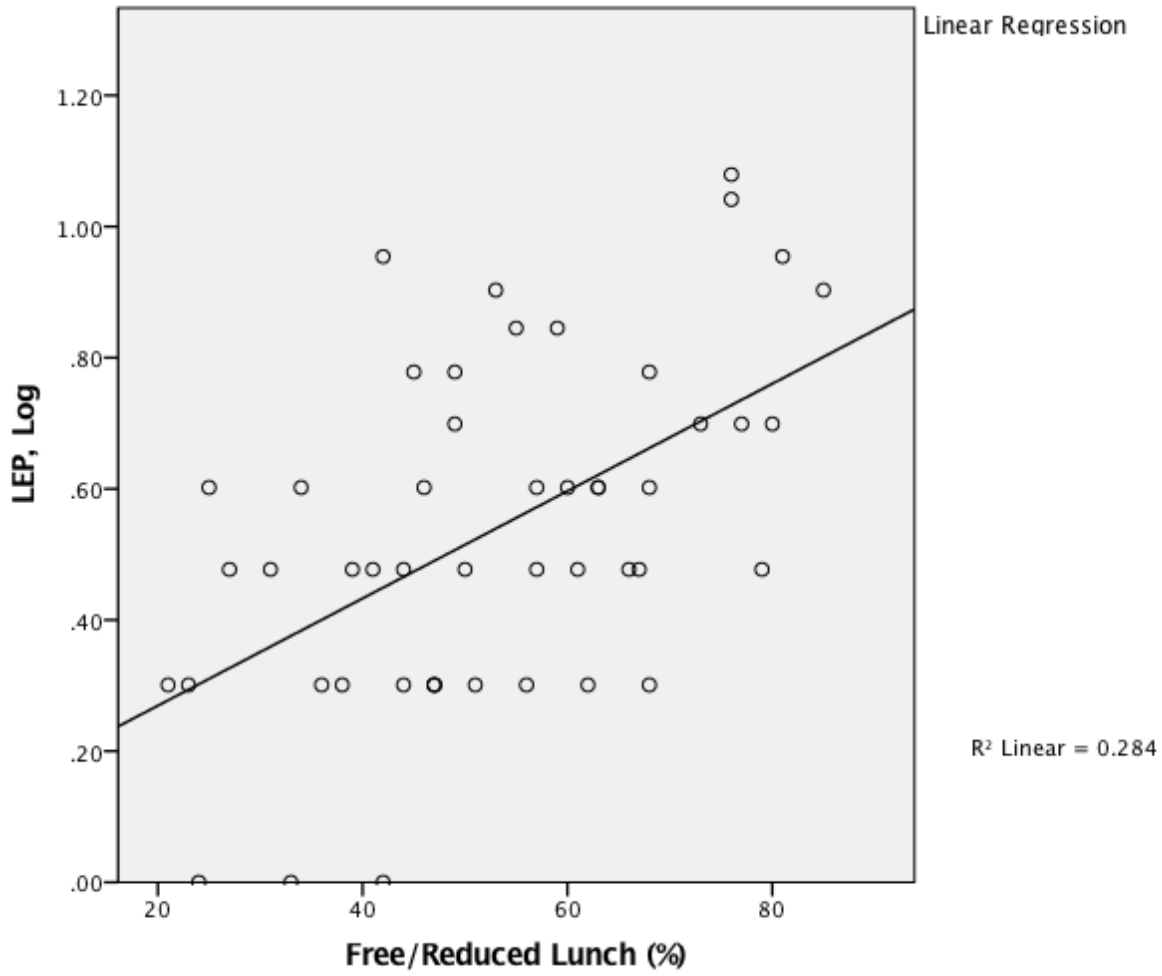

Figure 2. Scatterplot of LEP (log-transformed) and F/R L, with regression line (LEP regressed on FRL). [This scatterplot shows a positive relationship between LEP and FRL: schools with greater proportion of LEP students have a greater proportion of FRL students.]

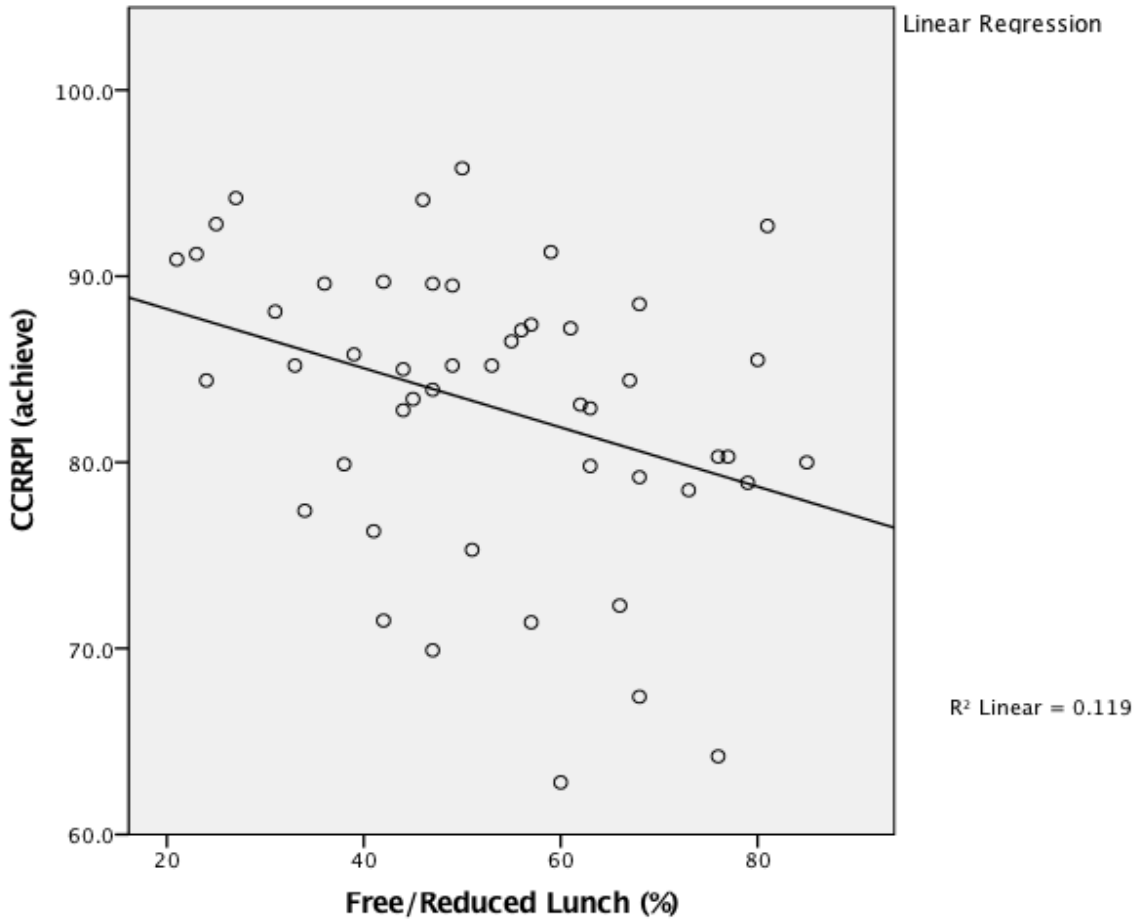

Figure 3. Scatterplot of CCRPI and FRL, with regression line (CCRPI regressed on FRL). [This scatterplot shows a negative relationship between CCRPI and FRL: Schools with higher CCRPI scores have a lower proportion of FRL students.]

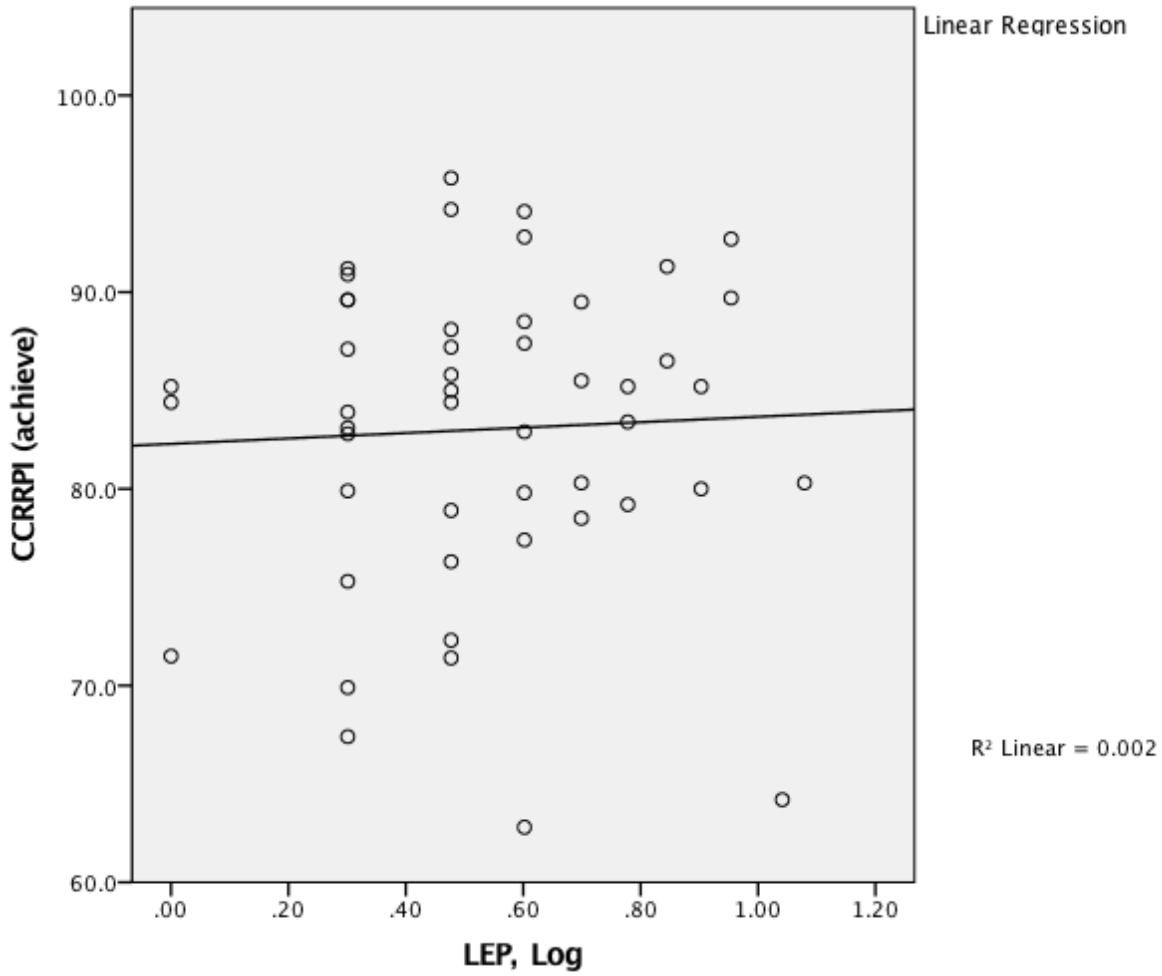

Figure 4. Scatterplot of CCRPI and LEP (log) with regression line (CCRPI regresses on LEP (log). [This scatterplot shows there is no correlation between CCRPI and LEP (log)].

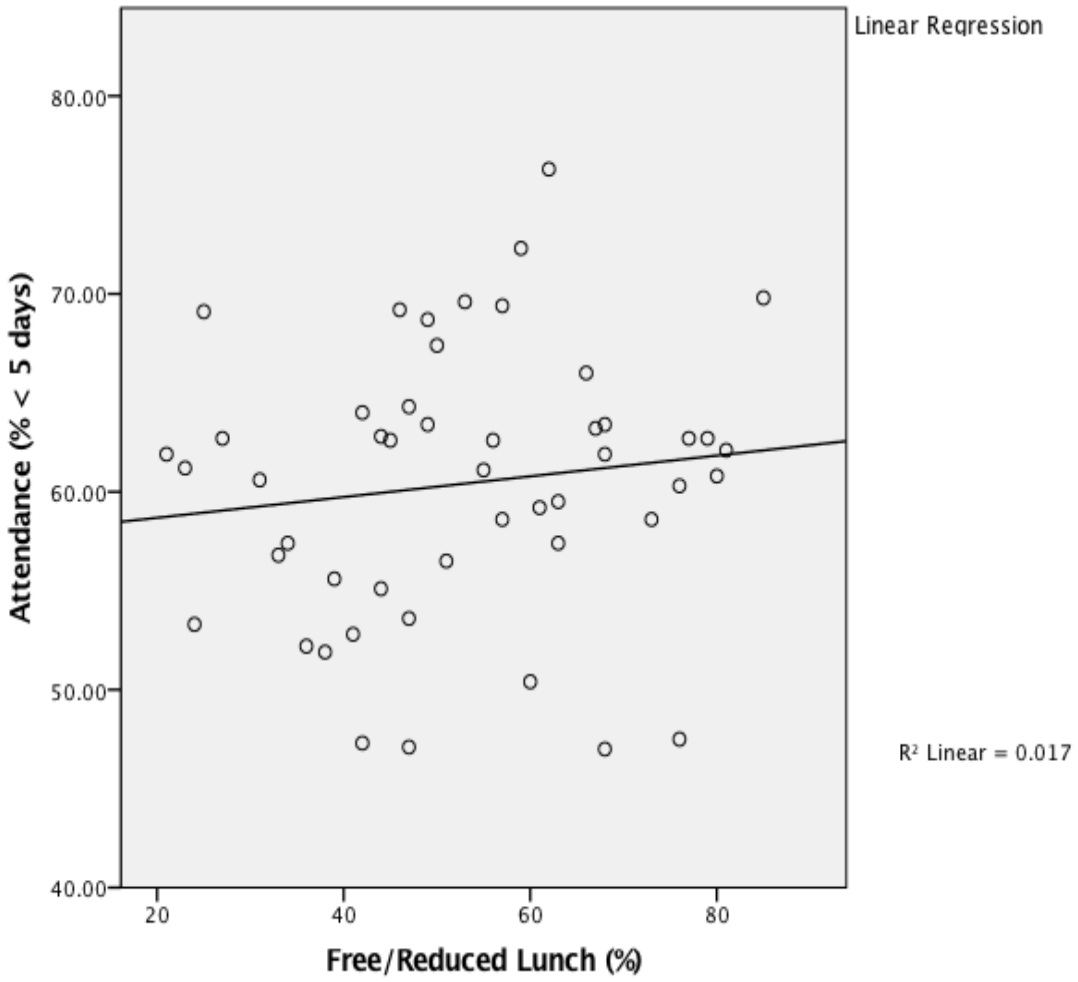

Figure 5. Scatterplot of attendance and FRL with regression line (attendance regressed on FRL). [This scatterplot shows there is no relationship between a school's student attendance rate and proportion of FRL students.].

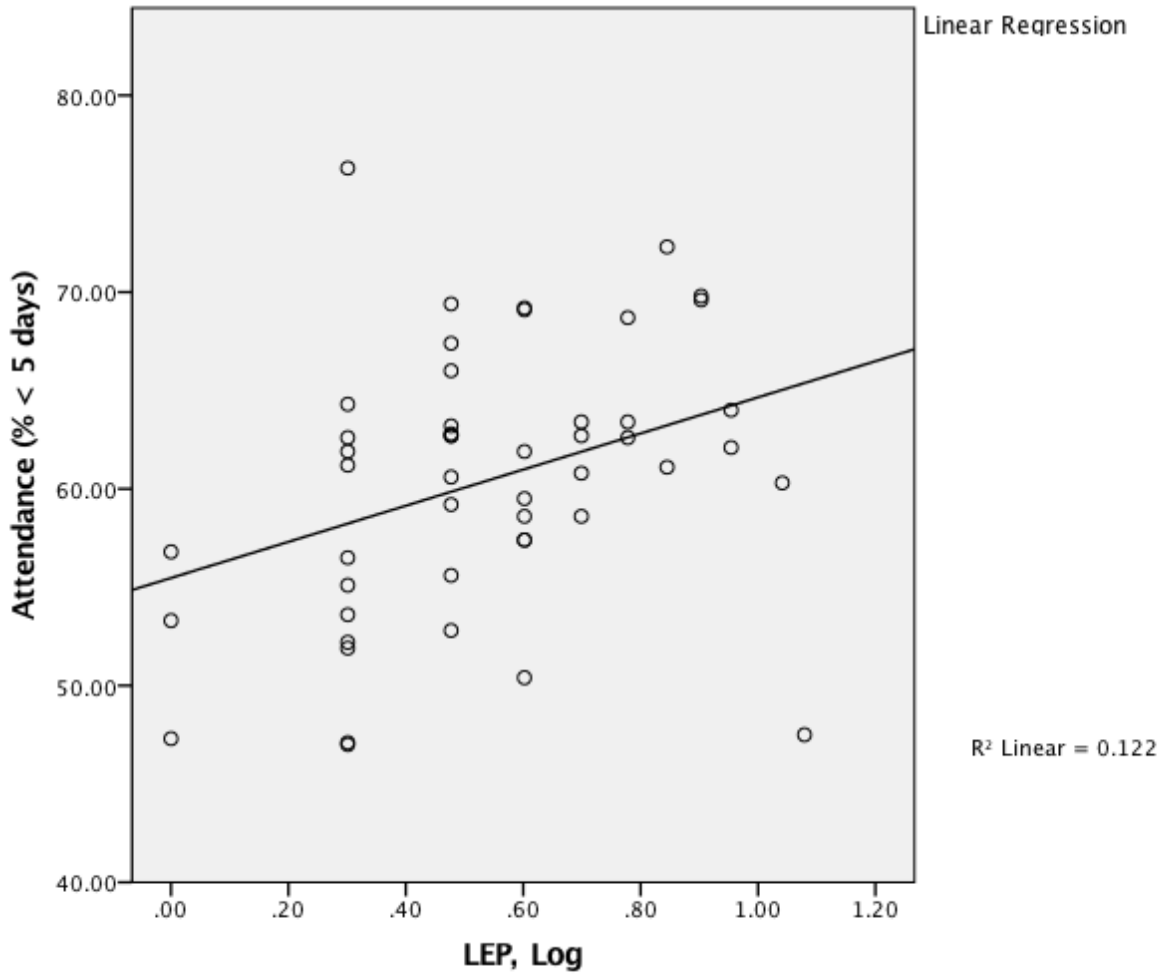

Figure 6. Scatterplot of attendance and LEP (log) with regression line - attendance regressed on LEP (log). [This scatterplot shows there is a positive relationship between a school's student attendance and proportion of LEP (log) students: schools with a higher percentage of students that were absent for less than five days also have a higher proportion of LEP students.]

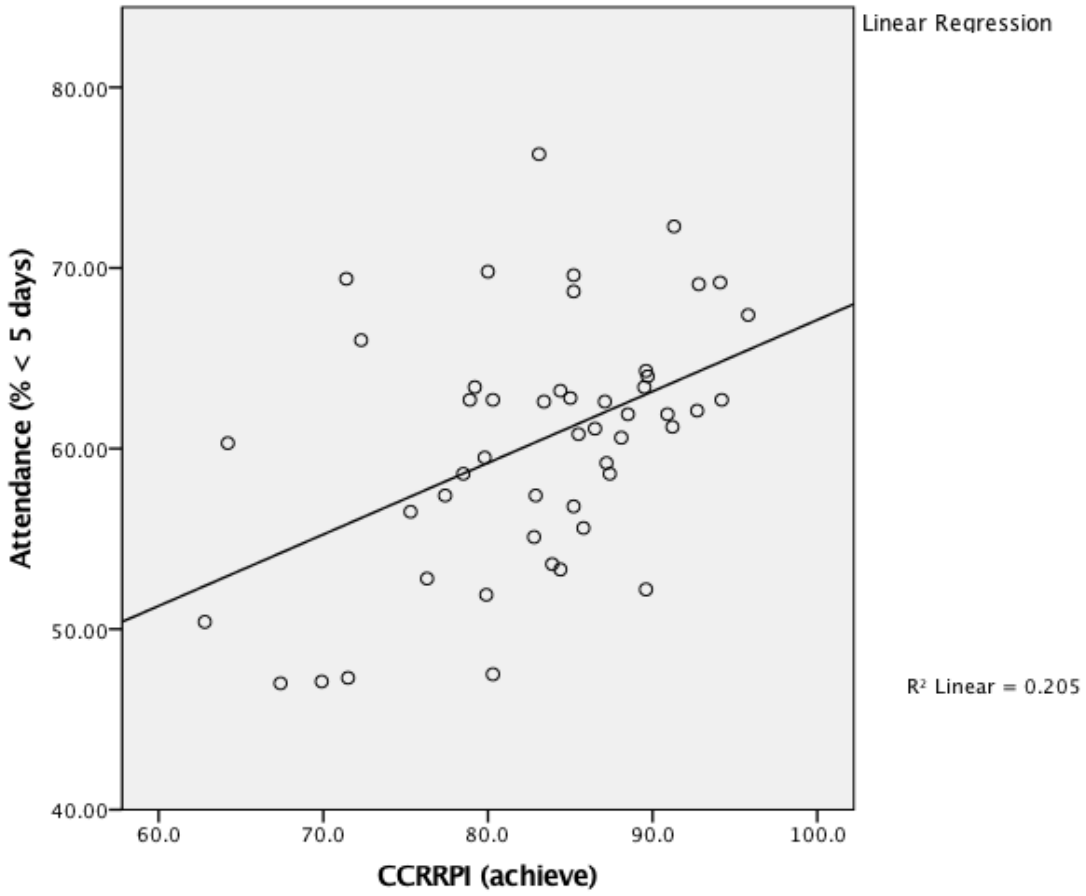

Figure 7. Scatterplot of attendance and CCRPI with regression line (attendance regressed on CCRPI). [This scatterplot shows a positive relationship between attendance and CCRPI: schools with a higher percentage of students that were absent for less than 5 days also have a higher CCRPI score.]

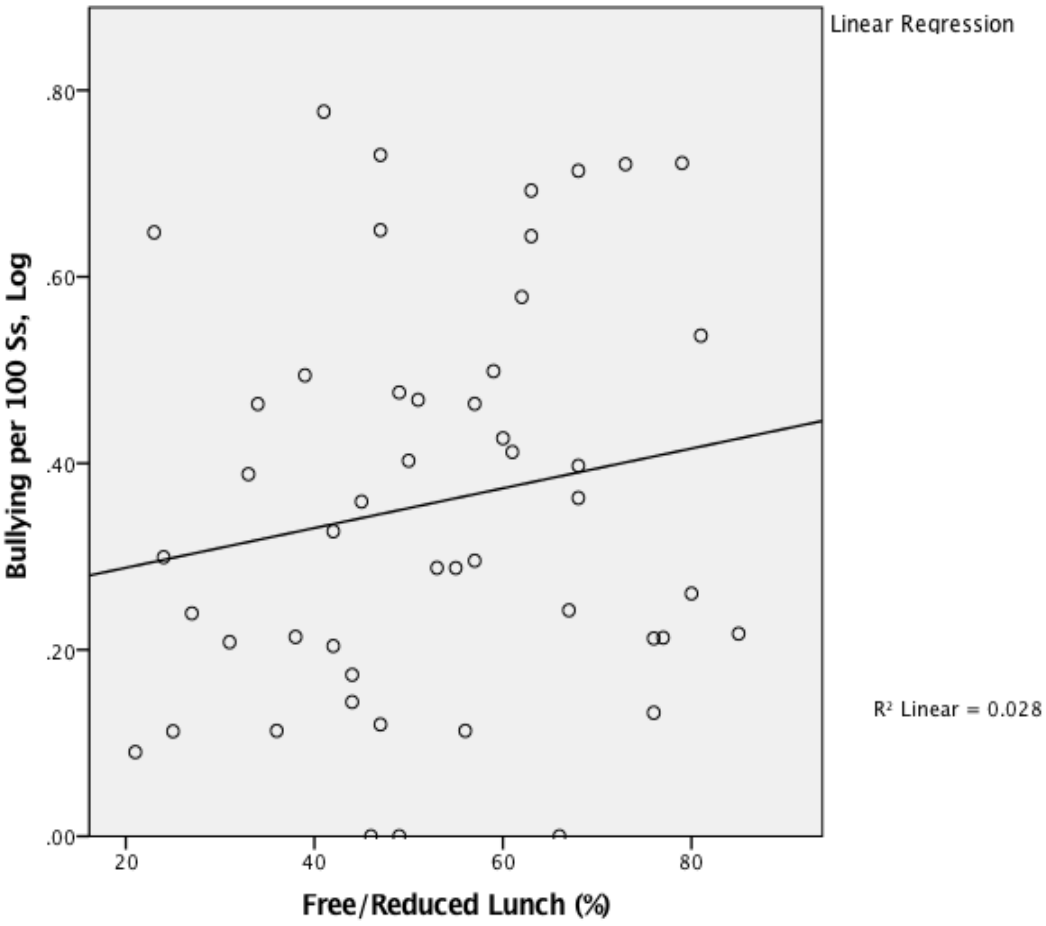

Figure 8. Scatterplot of bullying (log) and FRL with regression line (bullying (log) regressed on FRL). [This scatterplot shows no relationship between a school's bullying incidents and the school's proportion of FRL students.]

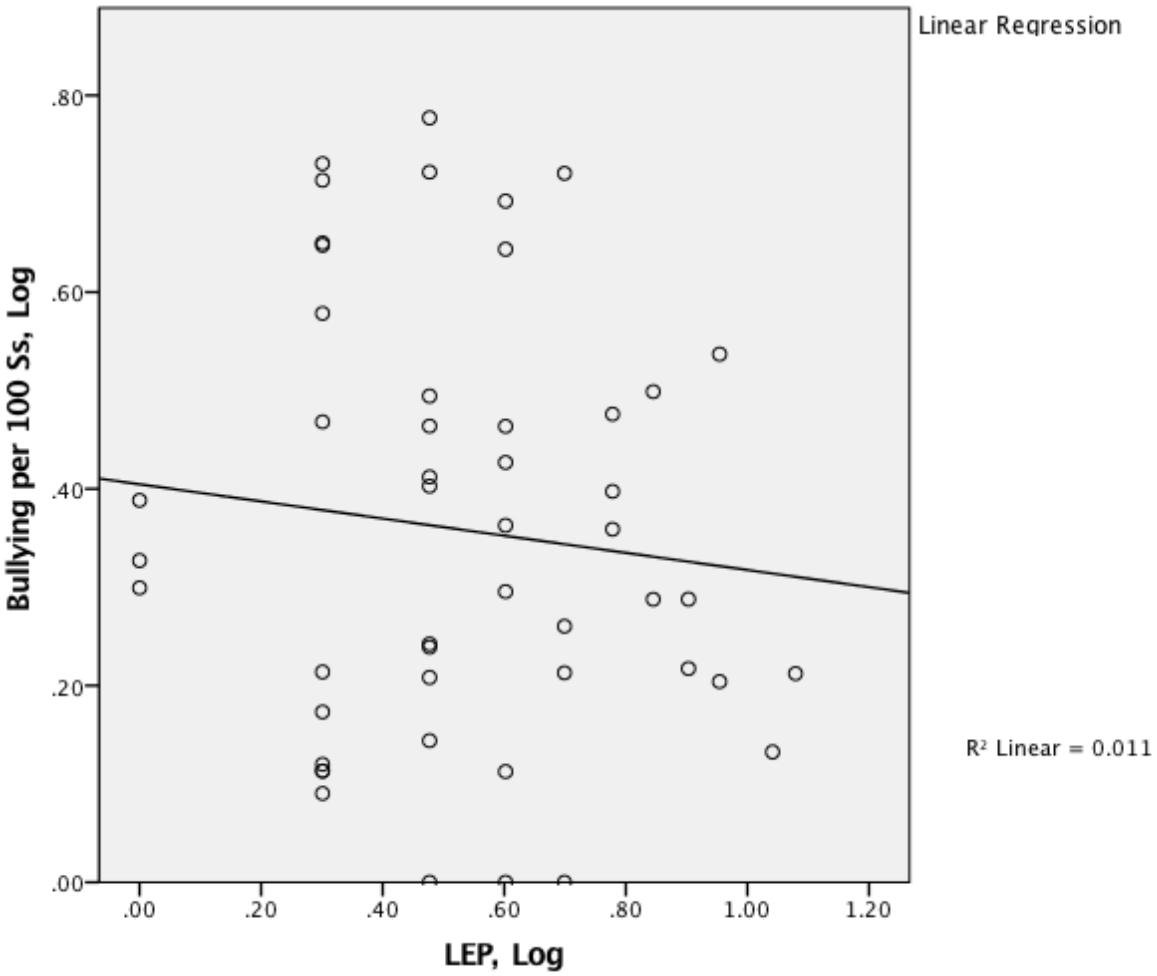

Figure 9. Scatterplot of bullying (log) and LEP (log) with regression line (bullying (log) regressed on LEP (log)). [This scatterplot shows no relationship between a school's bullying incidents and the school's proportion of LEP students.]

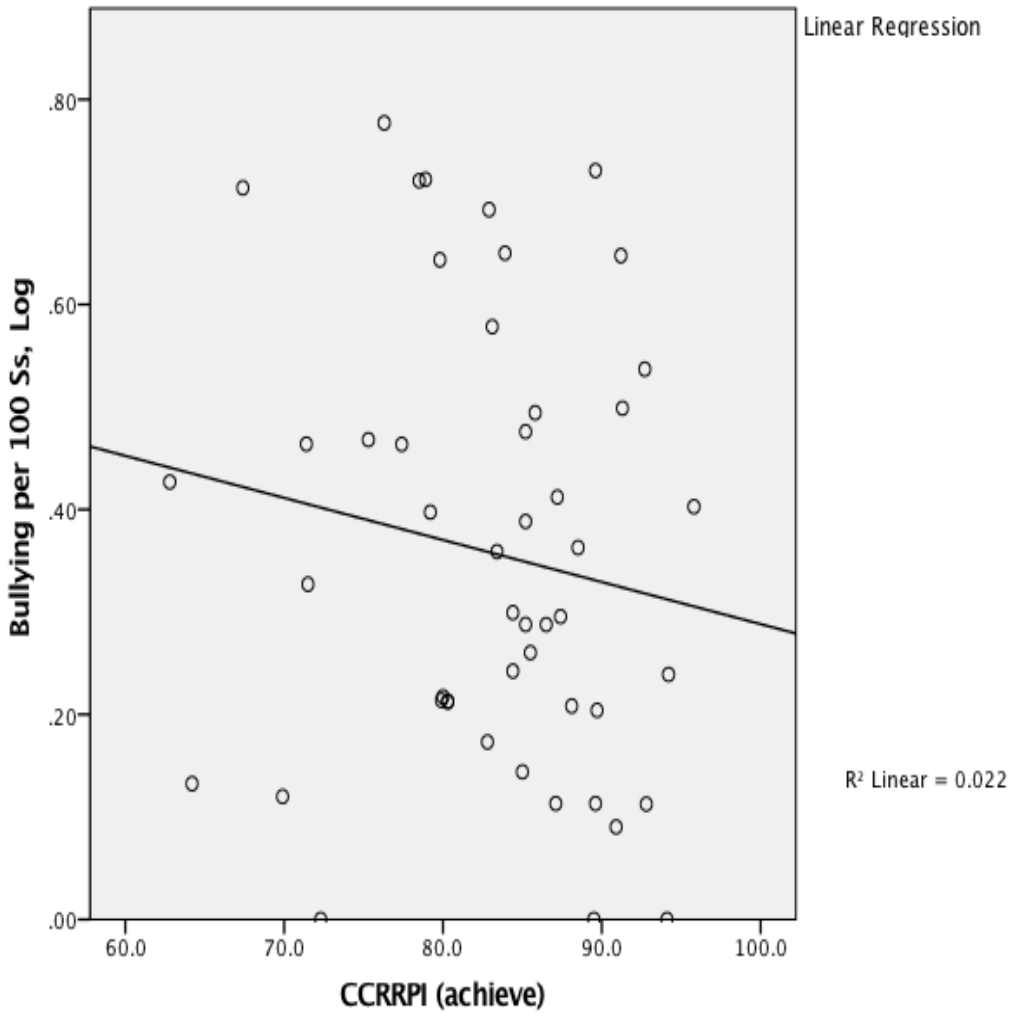

Figure 10. Scatterplot of bullying (log) and CCRPI with regression line (bullying (log) regressed on CCRPI). [This scatterplot shows no relationship between bullying and CCRPI.]

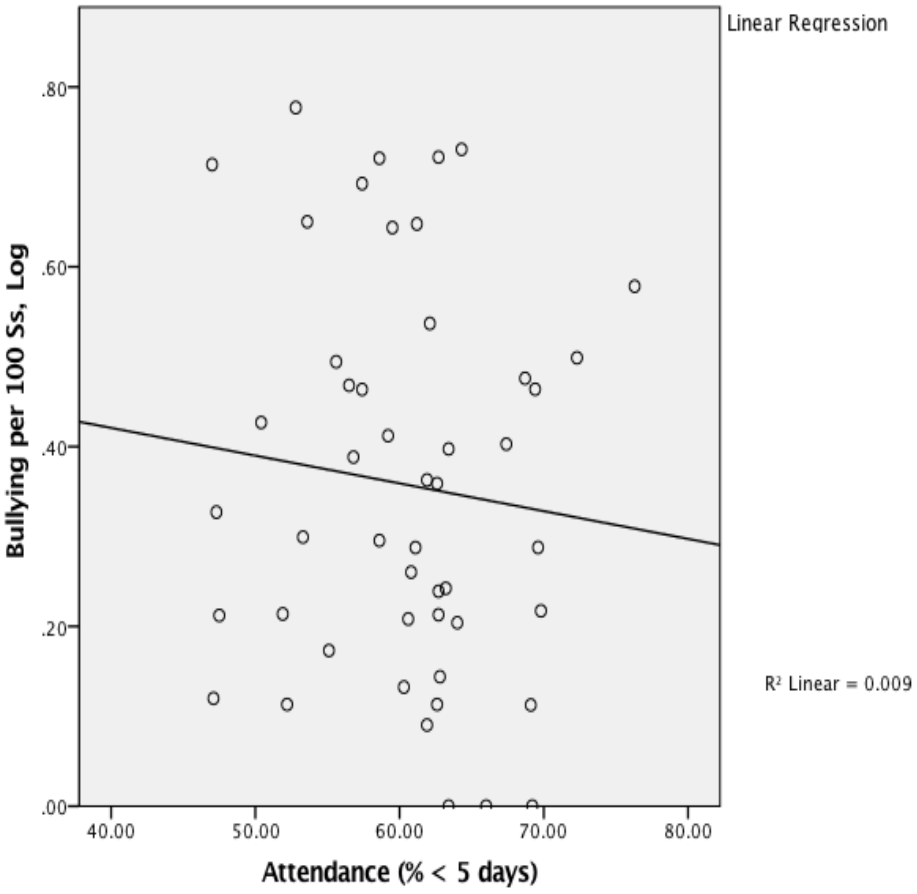

Figure 11. Scatterplot of bullying (log) and attendance with regression line (bullying (log) regressed on attendance). [This scatterplot shows no relationship between a school's number of reported bullying incidents and the school's student attendance rate.]

Potential multicollinearity problems were also assessed by examining the bivariate correlations (Table 3) to ensure that none had correlation coefficients greater than .70 and that the tolerance statistics in each regression were greater than .20 (Tabachnick & Fidell, 2013). No multicollinearity problems were detected for the set of predictor variables.

Residual scatterplots (standardized predicted Y versus standardized residual) and normal probability plots (p-p plots) were examined to ensure that there were no patterns that suggested non-normality or nonlinearity. Neither the achievement nor the attendance regressions showed problems with non-normality or nonlinearity.

Regression results. Having checked the assumptions of the multiple regression analysis, I next turned to interpreting the regression results. As explained earlier, two multiple regression equations were calculated, one for attendance and one for achievement. Both regressions used the same hierarchical entry method: LEP (log-transformed) and FRL were entered in the first step, and bullying (log-transformed) was entered in the second stop. Entering bullying in the second step allows one to see the effect that bullying has on the outcome variables, over and above any effect that LEP and FRL have on the outcome.

The research questions and accompanying hypotheses for this study, followed by the corresponding results were as follows:

Research Question 1: Does the frequency of bullying within a school predict the school's student attendance rate?

$H_0$1: Frequency of bullying does not predict a school's student attendance rate.

H_a1: Frequency of bullying predicts a school's student attendance rate.

The regression model for attendance is reported in Table 4. FRL was not a significant predictor of attendance, but LEP was a significant predictor (see Table 4). Schools with a higher percentage of LEP students also had a higher percentage of

students with less than five absences. When bullying was added in the second step, it was not a significant predictor of attendance (see Table 4). These results indicate that a regression model with FRL and LEP accounts for 13% of the variance in attendance, and that adding bullying is not a significant predictor of attendance, $t(45) = -.33$, $p = .75$.

Table 4.

Hierarchial Multiple Linear Regression of Attendance on Bullying, with FRL and LEP (log) Included in the Model (step 1).

Model & variables	*t*	*p*	β	*F*	df	*p*	R^2
Step 1				3.33	2, 46	.045	.13
FRL	-0.48	.632	-.08				
LEP (log)	2.40	.020	.38				
Step 2				2.21	3, 45	.100	.13
Bullying (log)	-.33	.75	-.05				

Research Question 2: Does the frequency of bullying within a school predict the school's

achievement level as measured by the College and Career Ready Performance Index (CCRPI)?

$H_0$2: Frequency of bullying does not predict a school's achievement level as measured by the school's CCRPI score.

H_a2: Frequency of bullying predicts a school's achievement level as measured by the school's CCRPI score.

The regression model for achievement is reported in Table 5. Both FRL and LEP were significant predictors of CCRPI scores (see Table 5). Schools with a higher percentage of students classified as FRL had lower CCRPI scores. Conversely, schools with a higher percentage of LEP students had higher CCRPI scores. When bullying was added in the second step, it was not a significant predictor of CCRPI scores (see Table 5). These results indicate that a regression model with FRL and LEP accounts for 19% of the variance in CCRPI scores and that adding bullying is not a significant predictor of CCRPI scores, $t(45) = -.22$, $p = .83$.

Table 5.

Hierarchical Multiple Linear Regression of Achievement on Bullying, with FRL and LEP (log) Included in the Model (step 1).

Model & variables	*T*	*p*	β	*F*	df	*p*	R^2
Step 1				5.49	2, 46	.007	.19
FRL	-3.30	.002	-.52				
LEP (log)	2.05	.046	.32				
Step 2				3.60	3, 45	.020	.19
Bullying (log)	-.22	.83	-.03				

Neither regression model indicated that the number of bullying incidents per 100 students was a significant predictor of achievement or attendance when the effects of FRL and LEP were controlled.

Summary

In this study, I examined the relationships that exist between school bullying, attendance rates, and achievement levels in a sample school district. In addition, I incorporated demographic information (SES and LEP) from the sample district in an effort to remove nuisance variance to get a clearer look at bullying's relationship with the outcome variables (attendance rates and achievement levels). Some correlations were shown to exist between the variables, which may be of interest to future research. However, bullying was not significantly correlated with any of the other variables. The regression procedures yielded similar results as neither regression equation indicated that the frequency of bullying within a school was a significant predictor of achievement levels or attendance rates.

Section 5: Discussion, Conclusions, and Recommendations

Introduction

In this quantitative research study, I sought to examine potential scholastic problems associated with bullying. I focused on data that were made available by the sample district and the state. School-level variables were used in this study. Those variables include the frequency of bullying in each school, achievement levels in each school, attendance rates in each school, as well as SES and LEP information from each of the 49 schools in the sample district. Bullying was not found to be significantly correlated with attendance or achievement. Regression procedures also did not show bullying to be a significant predictor of attendance or achievement. Additional details regarding my findings, implications for social change, and recommendations are included in this section.

Interpretation of the Findings

School bullying has likely been around as long as schools have existed. However, empirical research on bullying has only emerged in the last half-century, starting in the 1970s in Scandinavia (Olweus, 1978). One of the goals of this study was to contribute to the expanding research base on the topic of school bullying. Reviewing existing literature and reviewing related studies helped shape my research questions and hypotheses. The research questions focused on whether or not the frequency of bullying in a school predicted the school's student attendance rates or achievement levels. The hypotheses were that the frequency of bullying in a school would predict attendance rates and achievement levels. The findings in this study did not support the hypotheses.

Correlation tests indicated that bullying was not significantly correlated with attendance rates in the sample district in the 2011-2012 school year. Through the regression procedures, I also looked at whether the secondary predictor variables (SES and LEP) predicted attendance rates. SES was not a significant predictor of attendance. LEP was, however, a significant predictor of attendance as schools with higher percentages of LEP students had a higher overall percentage of students with fewer than five absences. Bullying, added to the regression equation after SES and LEP, was not a significant predictor of attendance rates.

Correlation tests also showed that bullying was not significantly correlated with achievement levels (CCRPI scores) in the sample district in the 2011-2012 school year. As I did with attendance, I conducted a regression procedure to examine whether the secondary predictor variables (SES and LEP) predicted achievement levels. Both SES and LEP were significant predictors of achievement levels (Table 4). Schools with a higher percentage of students classified as FRL had lower CCRPI scores, while schools with a higher percentage of LEP students had higher CCRPI scores. Bullying, added to the regression equation after SES and LEP, was not a significant predictor of achievement levels (CCRPI scores).

Although this study did not show significant correlations between bullying and attendance rates or achievement levels, previous research has shown that bullying can be harmful to individuals and school climates, with potential consequences ranging from increased dropouts and poor attendance to low academic performance (Cornell, et al., 2012; Limbos & Casteel, 2008; Vivolo et al., 2011). There are several potential

explanations for why the results of this study did not corroborate existing research. As mentioned in Section 1, this study only looked at data from one school year. The data from this study also only came from one sample school district. Because this study had a sample size of only 49, the potential observed power was only .57. A study that uses a longer time frame or a sample that includes multiple districts might yield different results due to the increased power.

In this study, I used office referrals that were coded as "bullying" as the tool for reporting and measuring the frequency of bullying in each school in the sample district. No distinction was made between whether incidents were reported by victims, bystanders, or teachers. This is an important distinction because an actual witness or participant might report an incident differently than a parent or teacher who learned about the incident after it occurred, and in some cases there may be cultural or community factors that reflect negatively upon students who report bullying (Bradshaw, 2015; Cornell & Brockenbrough, 2004). Not every school defines bullying the same way, and not all participants or bystanders interpret situations the same, making distinctions between bullying and other forms of aggression less clear (Hymel & Swearer, 2015). The unknown amount of unreported bullying in each school, and the unknown amount of bullying incidents that were reported but may have been coded as something else in each school are challenges that require consideration when interpreting my results. A clearer, consistent, and uniform method of reporting and measuring bullying may have yielded results that were more consistent with my hypotheses.

Patterson's coercive process model served as the theoretical framework for this study. As I discussed in Section 1, Landrum (1992) extended the coercive process model to the school or classroom setting. According to Horner and McIntosh (2016), coercion often occurs in schools in the form of adults using (or threatening to use) averse events such as criticism or reprimands which can lead to the student responding with more undesirable behavior. Snyder (2016) explained that once understood and identified; these coercive processes can serve as targets for interventions, promoting social skills and emotional self-regulatory skills. In examining coercion in families, Snyder (2016) noted that the task for parents is to provide an environment that is warm and supportive, while also fostering cooperation, rule following, and emotional self-regulation among children. Extended to a school setting, teachers could benefit from a similar approach by providing a warm and supportive learning environment and shaping positive social skills among students. To prevent, disrupt, or limit cycle of negative behavior associated with coercion, many schools and districts throughout the United States have implemented Positive Behavior Interventions and Supports (PBIS); a comprehensive, system-wide program designed to limit student problem behavior and promote an improved school climate and environment (Pugh & Chitiyo, 2012). Later in this section, in discussing recommendations for action, I will discuss how incorporating PBIS could be beneficial for the sample district.

While this study did not yield dramatic effect sizes that would allow for discussion of the practical applications of my results, there are practical applications of this study, as a whole, that merit discussion. As noted in the literature review section of

this study, other researchers have found significant associations between bullying and attendance and achievement (Bradshaw et al., 2013; Karell, 2011; Nakamoto & Schwartz, 2010; Peguero, 2011; Varjas et al., 2009). Although my results did not support my hypotheses, frequent bullying still presents significant challenges for the sample district. According to a survey conducted by the GaDOE (2015), 26% of responding students in the sample district reported being bullied at school. The same survey indicated that electronic forms of bullying are affecting the sample district's students as well; as 12% of students reported being mocked, tormented, or harassed on a social networking site by other students, and 11% of students reported that they had received threatening text messages from other students. In the remainder of this section, I will discuss how this study could drive positive social change, and I will offer recommendations for action and recommendations for future research.

Implications for Social Change

In this study, I examined potential consequences of bullying in one sample school district. I hypothesized that frequent bullying in a school would predict attendance rates and achievement levels within that school. This research, and related studies can drive positive social change in many ways in the district, in the local community, and beyond.

This study can help the sample district get a clearer look at where bullying is taking place, or at least being reported, most frequently within the district's schools. It is also possible that this study could inspire the sample district to rethink how bullying is reported, tracked, and measured within the district, potentially allowing for increased accuracy in any future related studies done in the sample district. The more information

that is available, the better equipped the sample district is to make informed decisions about bullying within its schools, and how to approach it. I am hopeful that this research will help the sample district shape its future plans for anti-bullying programs and strategies. Effective anti-bullying programs have been found to limit bullying and victimization as well as promote a positive school climate (Bradshaw, 2015; Farrington & Ttofi, 2009), these are examples of potential positive social changes that could occur within the sample district. If the sample district is able to effectively limit bullying; students, including bullies, victims, and bystanders could all benefit socially and academically. This could lead to positive social change throughout the local community as well. I will offer research-based recommendations later in this section. I am also hopeful that this study opens the door to further studies on the consequences of bullying that will make schools and communities safer.

Recommendations for Action

Recommendations for the sample district would include considering additional ways to collect and track data related to bullying. This could include focusing on when and where bullying is taking place, distinguishing between physical bullying, verbal bullying, or cyberbullying, and seeking additional student feedback through surveys, interviews, or questionnaires. I would also recommend that the sample district encourage all schools within the district to use a common definition of the word bullying in order to add consistency and accuracy to the process of reporting and measuring bullying within the sample district's schools.

With regard to bullying prevention or anti-bullying programs, I recommend that the sample district examine all available relevant data and research evidence related to successful anti-bullying programs before choosing which programs may be a good fit for the district. In addressing bullying, it can be effective to view bullying as a systemic problem and target the contexts and situations in which bullying frequently occurs (Hymel & Swearer, 2015). I also recommend that the sample district conduct research on the features of successful antibullying programs. Farrington and Ttofi (2009) found that consistent management, school-wide bullying rules, and training of teachers were features commonly associated with successful antibullying programs. I would also encourage the sample district to consider an antibullying approach that includes principles of PBIS. The PBIS framework builds upon the lessons from coercion theory to provide behavior supports that can prevent or reverse coercive cycles in schools and lead to improved school climates (Horner & McIntosh, 2016). I recommend that the sample district make those features a priority as it searches for anti-bullying programs to potentially adopt, and invests heavily in staff-training to ensure that antibullying or PBIS initiatives are implemented and sustained effectively.

Recommendations for Future Study

Although my results did not support my hypotheses, I recommend further examination of potential consequences of bullying within and beyond the sample district. I recommend that future researchers consider looking at multiple districts with wide-ranging demographics and using a longer time frame than one school year. I also think it might be beneficial to examine instances of bullying in greater detail. For example, I

recommend looking for data that distinguishes when and where bullying occurs and breaks bullying incidents down by grade level. I was unable to use raw frequency data because of the type of data that were available to me. I had to use averaged or indexed data for some variables. I would recommend that future researchers use raw frequency data if it is available to them. I also recommend that future research use similar sample sizes, measures, and variables that previous studies have used that have yielded significant findings so as to add consistency to how the variables are studied and examined. This study was quantitative in nature. I would recommend that future researchers consider examining the same topics with qualitative or mixed methods approaches. There is great potential for future research on the topic of school bullying that can build upon the existing knowledge base.

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Appendix A: Parent University

[redacted]

From: [redacted]
Sent: Sunday, May 06, 2012 11:33 AM
To: [redacted] Principals; Assistant Principals
Cc: Central Office Senior Staff; Central Office Directors; Central Office Coordinators; Administrative Services; [redacted]
Subject: RE: Policy, Procedure and Practice Reminder - Volume 15 Number 26 - Bullying
Attachments: Fat Boy Chronicles Flyer-revised-5-4-12.pptx

Greetings All,

Please see below for two announcements:

As referenced below, the special presentation of Parent University will be held at the **Henry County Performing Arts Center on May 22nd from 3:00 PM to 5:00 PM.** (Note the time change as we must adjourn promptly at 5:00 PM.) We hope everyone can join us for this exciting opportunity to hear the **co-author of the *Fat Boy Chronicles*, Mike Buchanan,** followed by a special screening of the movie, ***The Fat Boy Chronicles*.** As we no longer have the need for tickets, we want to extend the welcome to everyone who can attend this inspiring presentation about the true story of a child who experienced the pain and humiliation of bullying.

We would also like to remind you that our Henry County Olweus Bullying Prevention Trainers will host a Bullying Prevention Training for representatives from all schools who have been trained or who would like to get the latest updates and hear some fresh ideas on implementing or re-energizing a successful bullying prevention program. This will be held on the morning of **May 22nd at the Henry County Education Center from 8:30AM-12:00PM.** Dr. Matt Isenberg will be sending more information about this Monday morning.

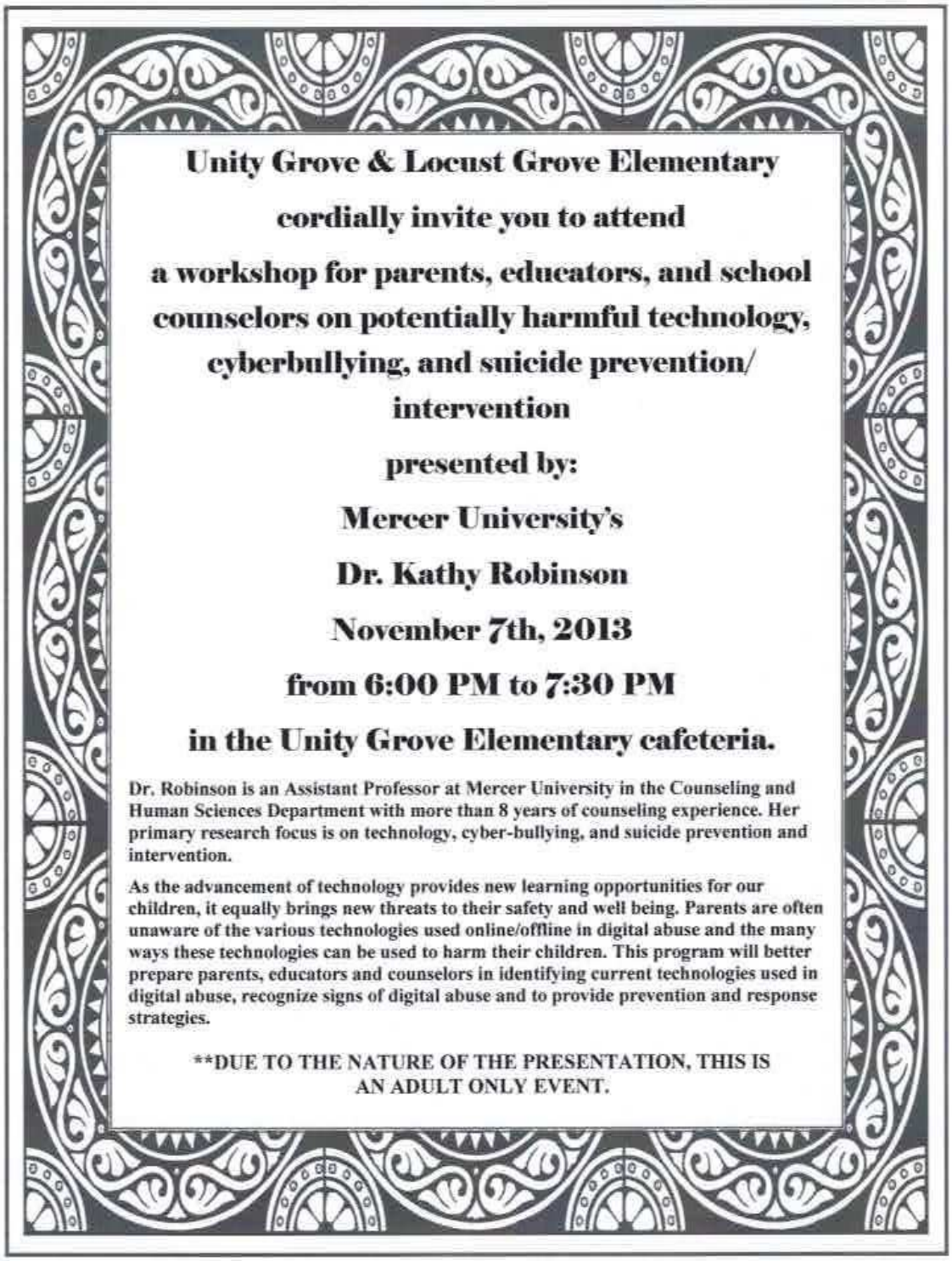
Thank you so much for your support of our Henry County Bullying Prevention Day of Opportunities on May 22nd!

Attached is the revised front page of the flyer announcing the ***Fat Boy Chronicles*** presentation. Feel free to call 770-957-6601 ext. 102 if you have any questions.

Respectfully,

[redacted]
Henry County Olweus Bullying Prevention Trainers

Appendix B: Workshop Invitation



Unity Grove & Locust Grove Elementary

cordially invite you to attend

a workshop for parents, educators, and school counselors on potentially harmful technology, cyberbullying, and suicide prevention/ intervention

presented by:

Mercer University's

Dr. Kathy Robinson

November 7th, 2013

from 6:00 PM to 7:30 PM

in the Unity Grove Elementary cafeteria.

Dr. Robinson is an Assistant Professor at Mercer University in the Counseling and Human Sciences Department with more than 8 years of counseling experience. Her primary research focus is on technology, cyber-bullying, and suicide prevention and intervention.

As the advancement of technology provides new learning opportunities for our children, it equally brings new threats to their safety and well being. Parents are often unaware of the various technologies used online/offline in digital abuse and the many ways these technologies can be used to harm their children. This program will better prepare parents, educators and counselors in identifying current technologies used in digital abuse, recognize signs of digital abuse and to provide prevention and response strategies.

**DUE TO THE NATURE OF THE PRESENTATION, THIS IS AN ADULT ONLY EVENT.