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Analyzing predictors of bullying victimization at school

By

Hatice Cecen Celik

A Thesis
Submitted to the Faculty of
Mississippi State University
in Partial Fulfillment of the Requirements
for the Degree of Master of Science
in Sociology
in the Department of Sociology

Mississippi State, Mississippi

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Analyzing predictors of bullying victimization at school

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Bullying victimization in school settings is a serious problem in many countries including the United States. Bullying victimization has been associated with serious incidents of school violence as well as detrimental physical, psychological, emotional, and social consequences for its victims. Given its consequences, it is crucial to understand who is more likely to be targeted for bullying victimization. This study examines whether a number of important factors such as gender, physical and interactionist school security measures, and involvement in extracurricular activities influence individuals' risk of bullying victimization from social bond and routine activity perspectives. The study employs the 2011 School Crime Supplement (SCS) of the National Crime Victimization Survey (NCVS) to investigate the causes of bullying victimization. The results of this study show that gender, interactionist school security measures, and extracurricular activities impact individuals' likelihood of bullying victimization.

Key words: bullying victimization, physical security, interactionist security, sport related activities, non-sport related activities.

DEDICATION

I would like to dedicate this research to my parents, Kadri Cecen and Rabia Cecen, my sister Elvan Cecen, and my husband Ahmet Celik for their endless love, support, and encouragement.

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CHAPTER I

INTRODUCTION

Recently researchers have become interested in explaining the causes and consequences of bullying (Carbone-Lopez, Esbensen, & Brick, 2010; Peguero, 2013; Nansel et al., 2001; Felix, Furlong, & Austin, 2009; Turner, Exum, Brame, & Holt, 2013; Moon, Hwang, & McCluskey, 2008; Turner, Finkelhor, Hamby, Shattuck, & Ormrod, 2001). Olweus defines bullying as a specific form of aggression, which occurs intentionally and repeatedly, and involves an imbalance of power between a perpetrator and a victim (Olweus, 2003). Bullying can be direct, which involves a relatively open attack to a person such as hitting, kicking, spitting, and taking someone's belongings, or can be indirect including such behaviors as making fun of, spreading rumors about someone, and social exclusion (Carbone- Lopez, Esbensen, & Brick, 2010).

Although bullying among students is not a recent phenomenon, researchers began to study bullying systematically in the 1970s, mainly focusing on schools in Scandinavia (Olweus 1970). In 1983, three male students in Norway committed suicide as a result of being a victim of bullying ("violencepreventionworks.org", n.d). Therefore, the government decided to initiate a national campaign against bullying in schools by developing bullying prevention programs ("violencepreventionworks.org", n.d).

During the 1980s and early 1990s, research on bullying among students started to attract broader attention in many countries including the United States (Olweus, 2003).

Increasing incidents of school shootings during the 1990s brought growing attention on bullying research in the United States because most of the offenders reported that they were frequent targets of bullying (Leary, Kowalski, Smith, & Phillips, 2003; Kimmel & Mahler, 2003). Anderson et al. (2001) analyzed approximately 220 school shooting incidents between 1994-1999 within the US, which resulted in 253 deaths. They found that homicide perpetrators were more than twice as likely to have been bullied compared to homicide victims (Anderson et al., 2001).

In addition to these consequences of bullying, bully victims also suffer from important social, psychological, and emotional problems, including a higher risk of depression, suicide ideation, lower self-esteem, poorer emotional and social adjustment, and a higher risk of dropping out of school (Olweus, 1997; Vanderbilt & Augustyn, 2001; Turner, Exum, & Holt 2013). As a result, concern about the bullying victimization of students within school settings has increased dramatically in recent years (Olweus, 2003; Time, & Payne, 2008; Burrow, & Apel, 2008; Welsh, 2001).

Researchers report varying prevalence rates of bullying. Nansel et al. (2001) analyzed data from a representative sample of 15,686 students who were in grades six through ten in both private and public schools in the U.S. during the 1998 school year. They reported that 29.9 percent of students indicated involvement in bullying. Specifically, 10.6 percent of students were bully victims, 13 percent of students were bullies, and 6 percent of students were both bully and victim (Nansel et al., 2001). According to the School Crime Supplement data from 2007, 31.7 percent of students reported that they were bullied at school while 28 percent of students were bullied in 2009 (U.S Department of Education, 2011).

Given the increasing prevalence and detrimental consequences of bullying, it is important to understand who is more likely to be targeted for bullying victimization. Both routine activity theory and social bond theory will be used to understand the causes of victimization in school settings. According to routine activity theory there are three essential elements of crime, which are; suitable targets, motivated offenders, and capable guardians. Suitable targets refer to someone or something that draws motivated offenders that intend to commit crime. A capable guardian is someone or something that prevents motivated offenders from committing crime. Routine activity theory is well suited to explain the causes of bullying victimization given its focus on the environment and how changes in guardians and targets of crime can affect victimization. Routine activity theory has been utilized to explain how routine activities are effective in assessing victimization risk at school (Popp, & Peguero, 2011; Peguero, 2013). This research will use routine activity theory to explore whether it can be specifically employed to explain individuals' risk of bullying victimization.

Social bond theory emphasizes the importance of social bonds because it assumes that strong bonds with conventional society prevent individuals from committing crime (Hirschi, 1969). Although social bond theory is usually used to understand what causes crime, a large overlap exists in offenders and victims of crime, which indicates the causes of offending and being a victim may be similar (Higgins, Khey, Dawson- Edwards, & Marcum, 2012). Social bond theory is a beneficial framework for understanding bullying victimization because stronger bonds with conventional others have been found to reduce criminal involvement and victimization (Catalano, Oesterle, Fleming, & Hawkins, 2004;

Payne, Gottfredson, & Gottfredson, 2003). Therefore, by extension, bonds with others should also reduce the likelihood of bullying victimization.

Routine activity and social bond theory will be applied to understand who is more likely to be a victim of bullying by analyzing such factors as gender, school security measures, and extracurricular activities within these theoretical frameworks. This study is important because of the negative consequences of bullying victimization. In addition, very few studies utilize routine activity and social bond theory to analyze bullying victimization in school settings (Cunningham, 2007).

This study also examines security measures from a unique approach. Specifically, security measures are divided into interactionist measures, which refer to close and positive relationships between students and adults in school, and physical measures, which include security cameras, locker checks, and security guards (Time & Payne, 2008). Physical security measures will be used to test routine activity theory because it emphasizes the importance of capable guardians in terms of preventing bullying victimization. Interactionist security measures will be used to test social bond theory because these measures overlap with social bonds. Additionally, this study adds to the literature through dividing extracurricular activities into sport and non-sport related activities in order to analyze whether students' risk of bullying victimization changes based on types of activity involvement from routine activity and social bond perspectives.

In this study, the 2011 School Crime Supplement (SCS) of the National Crime Victimization Survey (NCVS) will be used to examine the causes of bullying victimization. The first part of the study presents a review of the literature including the definition and consequences of bullying. The second part provides information about

factors that affect the likelihood of victimization, including gender, security measures, and extracurricular activity involvement. The third part provides information about the theoretical background. The fourth part presents information on the sample, measures, and analytical analyses to be used in this study. The last part provides information on the results, discussion, conclusion, and limitations of the study.

CHAPTER II

LITERATURE REVIEW

Definition of Bullying

Although bullying research has been conducted for many years, there is no one common definition of bullying among researchers or state and national governments. Olweus (2003) defines bullying as a form of aggression, which occurs intentionally and repeatedly and involves an imbalance of power between the perpetrator and victim. Vanderbilt and Augustyn (2010) describe bullying as the assertion of power through aggression, which includes a bully who intentionally and repeatedly targets weaker victims through emotional, social, and physical means (p. 315). Additionally, the U.S. Department of Health and Human services defines bullying as “unwanted, aggressive behavior among school aged children that involve a real or perceived power imbalance. The behavior is repeated, or has the potential to be repeated, over time” (“stopbullying.gov”, n.d).

“Bullying includes actions such as making threats, spreading rumors, attacking someone physically or verbally, and excluding someone from a group on purpose” (“stopbullying.gov”, n.d). Furlong et al. (2003) state that although there have been efforts by the federal government to develop a common definition of bullying, individual states have not realized all three components of bullying as defined by Olweus (1997). For instance, Washington and New Jersey define bullying as a “hate crime,” “peer

intimidation,” or “peer harassment” (Furlong, Morrison, & Greif, 2003). Despite the fact that bullying has been defined in different ways, most definitions include three main points, which are the presence of an imbalance of power, the repeated occurrence, and that the acts are intentionally inflicted.

In addition to providing the definition of bullying in general, researchers also define the different forms of bullying, which include physical, verbal, and social bullying. Physical bullying includes physical aggression toward the victim such as kicking, pushing, shoving, stealing, and threatening with a weapon (“stopbullying.gov”, n.d). Verbal bullying includes verbal aggression such as name-calling, taunting, teasing, and threatening with harm (Olweus, 1978; Vanderbilt & Augustyn, 2011; “stopbullying.gov”, n.d). Finally, social bullying includes social rejection, embarrassing someone in public, spreading rumors, and excluding from peer groups, (“stopbullying.gov”, n.d). Additionally, according to Carbone-Lopez and colleagues (2010), kicking, pushing, shoving, stealing, and threatening with harm are defined as direct bullying while name calling, spreading rumors, and excluding others from activities are defined as indirect bullying. This study will also be looking at direct and indirect bullying victimization.

Additionally, with advances in technology, forms of bullying have expanded to include ‘cyber bullying.’ Patchin and Hinduja (2006) define cyber bullying as a repeated and intentional harm inflicted through ways of electronic texts, which may include mean emails or text messages and rumors posted on social networking sites (“stopbullying.gov”, n.d). Patchin and Hinduja (2008) also define cyber bullying as an “unfortunate by-product of the union of adolescent aggression and electronic communication” (2008, p. 131) and suggest that people can easily bully others in several

ways, including sending e-mails and text messages or posting embarrassing pictures through social networks to make victims feel embarrassed or threatened.

In sum, although there is not a universally accepted definition of bullying, many researchers agree on the three main points defined by Olweus (1997). Bullying takes various forms, including physical, verbal, social, and cyber bullying. These types of bullying have numerous negative effects on individuals who are involved in bullying. In the following section, the literature on the consequences of bullying involvement will be discussed.

Consequences of Bullying Involvement

Researchers examine different categories of bullying victimization and the consequences of bullying involvement for each group. “Victim-only” includes individuals who are a target of bullying but do not bully others while “bully-victim” is defined as those who are both a victim and an aggressor in the bullying cycle (Vanderbilt & Augustyn, 2011). Given that this study is limited because it cannot be determined whether one is a victim-only or a victim and a bully, it is important to examine the consequences of both given the possible overlap in bullies and victims. For instance, Nansel et al. (2001) reported an association between bullying and being bullied and victimized, finding a 6 percent overlap in bullies and victims.

Researchers find a number of negative emotional, psychological, and behavioral consequences of bullying victimization. Bullying involvement has negative long-term effects such as greater health problems, poorer emotional and social adjustment (Vanderbilt & Augustyn, 2011), and poorer psychosocial adjustment for youth who are

involved in bullying compared to those who are not involved in bullying (Nansel et al., 2001; Vanderbilt & Augustyn, 2011).

The victim-only group includes participants of bullying who are the targets of bullying but do not bully others. These passive types of victims are generally physically weak and emotionally vulnerable (Olweus, 1997; Vanderbilt & Augustyn, 2011). Victims are more insecure and anxious than other students who are not involved in bullying (Peskin, Tortolero, & Markham 2006; Richard, Schneider, & Mallet, 2011). They also tend to be lonely and feel abandoned in school because both physical and relational bullying is negatively related to friendships and peer acceptance (Richard et al., 2011). When victims are bullied, they generally react by withdrawing and crying (Olweus, 1997). Olweus (1997) found that “the behavior and the attitude of the passive/ submissive victims signal to others that they are insecure and worthless individuals who will not retaliate if they are attacked or insulted” (p. 499). Therefore, Olweus (1997) characterizes victims by an anxious or submissive reaction pattern combined with physical weakness. Importantly, psychological factors such as being passive and being psychologically, emotionally, and physically weak can contribute to and result from bullying victimization (Peskin et al., 2006).

In addition to these submissive reactions, being a victim of bullying increases the risk of depression (Vanderbit & Augustyn, 2001; Turner et al., 2013), suicide ideation (Turner et al., 2013), and poor social and psychological adjustment (Nansel et al., 2001). The long-term consequences are an increased risk of low self-esteem and being in an abusive relationship during adulthood (Vanderbilt & Augustyn, 2011). Furthermore, Wallace et al. (2005) explored the relationship between peer victimization and school

delinquency considering bullying as a source of strain. They found that youth who were victimized by their peers have a higher risk of experiencing anger and frustration, which was related to increased involvement in school delinquency (Wallace, Patchin, & May, 2005).

Those who are bully-victims, or those who engage in bullying and are also victimized, may experience a “combination of both anxious and aggressive reaction patterns” (Olweus, 1997, p. 500) at the same time (Vanderbilt & Augustyn, 2011). McCallion and Feder (2013) reported, “‘Bully-victims’ were found to be the most at risk— containing risk factors associated with both of the other two groups” (p. 5). For instance, bully-victims have high rates of depression, loneliness, are more likely to carry weapons, and have higher rates of anxiety and antisocial personality disorder (Vanderbilt, & Augustyn, 2011). The findings are consistent in that being both a bully and a victim of bullying cause psychological difficulties and social relationship problems (Vanderbilt & Augustyn, 2011; McCallion & Feder, 2013) and mental health problems (anxiety, depression, suicide) (Peskin et al., 2006). Importantly, bully-victims “may learn maladaptive behaviors of using bullying strategies to cope with their victim status” (Vanderbilt, & Augustyn, 2011, p.31). For instance, Nansel et al. (2003) found that involvement in bullying was associated with weapon carrying and violent behavior. In addition, Nansel et al. (2003) reported that 36 percent of males and 15 percent of females who had been bullied reported weapon carrying in school while 50 percent of males and 30 percent of females who had bullied others reported weapon carrying in school. It seems that individuals who are involved in bullying often, choose to carry weapons to minimize their fear or stress, which may cause later delinquency.

Sigfusdottir et al. (2010) explored the relationship between bullying, bullying victimization, and delinquency and focused on whether this association was mediated by anger. They reported significant and direct associations between bullying involvement and delinquency, which was significantly mediated by anger. In other words, involvement in bullying leads to anger, which then leads to delinquency. They also found that both bullying and bullying victimization increase the likelihood of delinquent behavior, but the effects for bullying were stronger than bullying victimization (Sigfusdottir, Gudjonsso, & Sigurdsson, 2010).

In sum, bullying involvement has detrimental social, psychological, and physical consequences for being a victim of bullying or being both a victim of bullying and bullying others. Those consequences can be immediate, such as higher levels of depression, aggression, drug and alcohol use, suicide ideation, and violent behavior, or the consequences can also be long lasting such as greater health problems, poorer self-esteem, and being in abusive relationships during adulthood. In the following section, factors related to bullying victimization will be discussed.

Factors Related to Bullying Victimization

Gender

Past research has shown discrepancies in the prevalence of direct and indirect bullying victimization based on gender. Most studies have found that male students were more likely to become victims of direct bullying than females (Turner et al., 2011; Bradshaw, Sawyer, & O'Brennan, 2009; Nansel et al., 2001; Carbone-Lopez et al., 2010; Richard et al., 2011; Wang, Iannotti, & Nansel, 2009) although Peskin et al. (2006) found gender similarities in most types of bullying and victimization.

In addition, Carbone-Lopez et al. (2010) show how bullying victimization effects differ for females and males depending on the type of bullying. They found that males were significantly more likely to become repeat victims of direct bullying than females. In contrast, females were significantly more likely to become repeat victims of indirect bullying than males. They also discovered relationships between bullying victimization and delinquency, drug use, and gang membership. Specifically, Carbone-Lopes et al. (2010) found that intermittent direct bullying victimization was associated with delinquency for males while repeated indirect bullying reduced drug use among males, but increased drug use among females. Finally, males who experience intermittent direct bullying victimization, and females who experience repeated indirect bullying victimization, were more likely to report membership in gangs (Carbone-Lopez et al., 2010).

Although there are some contradictions in the prevalence of types of bullying victimization based on gender, most researchers agree that female students are more likely to become victims of indirect bullying while male students are more likely to be victims of direct bullying.

School Security Measures

Earlier research revealed that many school shooters were bullied, and bullying has detrimental physical, social, psychological, and emotional effects for individuals who are involved in bullying. Based on these findings, researchers began to work on the risk factors related to violence and tried to develop efficient school-based prevention programs in order to decrease violence and bullying among school children. For instance, Time and Payne (2008) tested the usefulness of different methods for preventing school

violence in the Commonwealth of Virginia. They classified strategies to prevent school violence into three categories; legal, interactionist, and physical remedies. Laws or strategies that enable school officials to perform certain actions in order to prevent school violence are referred to as legal remedies. Interactionist remedies are referred to as practices that motivate staff and students to communicate openly in order to prevent violence in school. Last, physical remedies to reduce violence at school include structural changes such as metal detectors, spiked fences, emergency alert systems, blast-proof doors and windows, and electrical controlled gates (Time & Payne). The results show that the most useful strategy to reduce school violence was the interactionist strategy, while legal strategies were not quite as effective, and the least effective strategy to reduce violence was physical remedies (Time & Payne, 2008).

Additionally, there are also several researchers who show how interactionist security measures are effective in preventing bullying victimization at school (Popp, 2012, Gregory et al., 2010; Cunningham, 2007). For instance some research emphasizes the importance of the teachers' role in preventing bullying victimization at schools (Olweus, 1992, 1994; Richard, 2011). Olweus (1992, 1994) argues that teachers, school officials, and administrators must be involved with students in order to prevent bullying incidences. This involvement should lead to improvements of the emotional connection between teachers and students, the guardianship which they provide, and also encourage students to talk to them when they have a problem (as cited in, Popp, 2012). In support of this idea, Richard et al. (2011) found that "there was less bullying in schools that are perceived as safer, that have higher achieving students, and that have more positive student-teacher relationships" (p.276).

Popp (2012) explored the impact of guardianship, which included social support networks, school rules, and school security on the student's risk of bullying victimization. The social support network included friends and adults the students can talk to, and adults who cared about them and would help with problems if needed. School security included the security guards and/or assigned police officers, locked entrance or exit doors, locker checks, security cameras, adults supervising the hallways, and metal detectors. Popp (2012) argues that school rules must be clearly defined and publicized to students and those faculties need to specify and prohibit unacceptable behaviors in school. Popp (2012) found that as the students' level of social support increased, their risk of being a victim of physical bullying decreased. In addition, as students' perceptions of school rules as fair decreased, their risk of physical bullying victimization increased. Gregory et al. (2010) found similar results when exploring the relationship between structure and support and school safety. Structure referred to "student perceptions of the rules as fair and consistently enforced for common problems such as cutting class, smoking, fighting, and speaking sarcastically to a teacher" (p. 49), and support referred to positive relationships between teachers and students, and having supportive adults in school. They found that structure and support were associated with less victimization and bullying at school (Gregory et al., 2010).

On the other hand, Blosnich and Bossarte (2011) also explored whether physical school security measures were associated with students' report of peer victimization related to bullying, and they found that students were less likely to become victims of bullying when adults or staff supervise hallways but not when schools have security guards. In contrast, Schreck et al. (2003) and Burrow and Apel (2008) found that physical

security equipment, such as cameras, metal detectors, and security personnel were ineffective in reducing victimization risk at school.

In sum, although several security measures were proposed to prevent students' bullying victimization, the most effective strategies to reduce bullying in schools, emphasize the importance of social support from teachers and peers, positive and open communication between students and adults at school, and belief in fairness of the rules (Gregory et al., 2010; Popp, 2012).

Extracurricular Activity Involvement

Several studies have examined the importance of positive and negative outcomes that occur as a result of participating in extracurricular activities in school. These positive outcomes, which are associated with extracurricular activity involvement, may prevent students from bullying victimization. For instance, Clark (2011) found that extracurricular activity involvement provides students with the opportunity to develop social skills and establish supportive and positive relationships, which could protect them from becoming a victim of violence at school (Clark, 2011). While being a victim of violence may not necessarily be classified as bullying, many of the causes of violent victimization and bullying victimization may be similar, so supportive and positive relationships may also protect students from bullying victimization. Popp (2012) reported the risk of being a victim of physical bullying decreased as students' level of social support increased. Davalos et al. (1999) examined the association between involvement in any type of extracurricular activity (i.e., band, athletics, or other extracurricular activity) and school enrollment. They revealed that students who were involved in extracurricular activities were more likely to stay in school and were less likely to drop

out than those who were not involved in these activities (Davalos et al., 1999; Mahoney, 2000; Mahoney & Cairns, 1997). Involvement in extracurricular activities provides protective factors for both risky behavior and academic achievement during high school (Eccles, & Barber, 1999) because constant extracurricular activity involvement was related to high educational status at young adulthood, and it gives opportunities for individuals to advance their life goals, and promotes educational success (Mahoney, Cairns, & Farmer, 2003, p. 410). Darling et al. (2005) also found that students who participate in extracurricular activities had higher grades, higher academic aspirations, and more positive attitudes toward school than other students who did not participate in those activities (Darling, Caldwell, & Smith, 2005). These studies show the importance of extracurricular activity involvement in terms of protecting students from risky behaviors and providing better educational achievement, social skills, and social networks. Extracurricular activity involvement may also protect students from bullying victimization by providing social support from their peers as well as their teachers.

Although the vast majority of the existing studies examine the link between extracurricular activities and its positive effects, it is also important to explore the relationship between extracurricular activity involvement and possible negative effects. Most studies examine the relationship between extracurricular activities and student's risk of violent victimization, property victimization, and sexual harassment, while very few studies of students' victimization have focused on bullying victimization. Given that the causes of victimization may be similar for criminal victimization and bullying victimization, the literature is reviewed for both outcomes.

Numerous studies have found an association between involvement in extracurricular activities and a higher risk of victimization at school (Welsh, 2001; Burrow & Apel, 2008; Popp, 2012; Peguero, 2009; Popp & Peguero, 2011). For instance, Peguero (2009) examined the relationship between extracurricular activity involvement in school and exposure to school violence and victimization for children. Peguero (2009) reported that as involvement of students in classroom-related activities and school clubs increased, their likelihood of property victimization and violent victimization increased. However, when students' involvement in interscholastic school activities increased, their risk of being violently victimized while at school decreased. In addition, Peguero (2013) examined whether and how the relationship between routine activities and life-styles and school-based victimization differ across immigrant generations. Three categories of school-based activities including academic related activities, sports, and club activities were used to test differences among generations. Findings indicate that first and second generations of immigrants reported lower victimization than the third generation because first and second generations have relatively lower engagement in sport and academic activities than the third generations, which shows how differences in lifestyle and routine activities affect the risk of being victimized at school. Additionally, third generations reported that as involvement in academic activities increased, the risk of being violently victimized at school increased, but the risk of being violently victimized at school decreased as involvement in sport activities increased (Peguero, 2013).

Another possible negative consequence of extracurricular activity involvement is an increased risk of bullying victimization. For instance, Popp (2012) found an association between participation in classroom related activities such as academic clubs,

including English, math, science, technology, performing arts, and student government and experiencing a higher risk of bullying victimization. Popp (2012) reported that individuals who participated in classroom related activities were 1.7 times more likely to experience physical bullying and 1.8 times more likely to experience social bullying than other students who did not participate in those activities.

In sum, extracurricular activity involvement can protect students from being a victim of bullying because it may foster a student's relationship with their peers and adults at school. On the other hand, depending on the type of extracurricular activity involvement, students may be at a higher risk of bullying victimization especially those who are involved in classroom related activities.

As mentioned earlier, bullying victimization has several detrimental consequences for its victims. This study aims to analyze whether gender, school security measures, and extracurricular activity involvement affect a student's risk of bullying victimization in schools with routine activity and social bond theories. In the following section, routine activity and social bond theory will be explained and tied to these predictors of bullying victimization.

Theoretical Background

Routine Activity Theory

Cohen and Felson (1979) developed the routine activity approach to analyze increasing crime rates in the United States from 1947 to 1974, which they argued were as a result of changes in routine activity patterns in American society. Routine activities were defined as “any recurrent and prevalent activities, which provide for basic population and individual needs” (Cohen & Felson, 1979, p. 593). Those activities that

individuals involve in their daily routines may occur at home or away from home. Activities away from home include attending school, childbearing, leisure, social interaction, acquisition of shelter and food, and employment. Unlike other mainstream theories, which focus on explaining individual offender characteristics, Cohen and Felson (1979) focus on circumstances in the environment such as the opportunity to commit crime, which affect whether crimes occur. They argue that changing social trends and people's routine activity patterns, such as increasing proportions of female college attendance, working women, single households, and traveling are linked to increasing crime rates post World War 2 in the United States (Cohen & Felson, 1979).

Routine activity theorists argue that the three necessary elements for crime are motivated offenders, a suitable target, and the absence of capable guardians (Cohen & Felson, 1979; Felson, 2002). Cohen and Felson (1979) define a motivated offender as someone who is intent to commit crime and is able to act on that intention. A suitable target is anything or anyone that draws motivated offenders to commit crime, and a capable guardian is anyone or anything that prevents motivated offenders from committing crime (Cohen & Felson, 1979; Felson, 2002). Importantly, Felson (2002) argues that guardians are not only police officers or security guards but the most important guardians are ordinary citizens. Routine activity theory suggests that crime is more likely to occur when motivated offenders and suitable targets meet in the absence of capable guardian, but any of those three elements might be sufficient to affect criminal acts. Importantly, through the course of routine activities, people become available targets for motivated offenders (Cohen & Felson, 1979).

According to Cohen and Felson, since World War 2, people in the United States have experienced shifts in their routine activities, especially an increasing shift from household activities with family members or friends to non-household activities with non-household members which has led to an increased risk of victimization. Therefore, Routine activity theory assumes that activities which are performed near the home or occur among family members, reduce the risk of criminal victimization because of better guardianship opportunities (Cohen & Felson, 1979).

Routine activity theory proposes that crime occurs when motivated offenders, suitable targets, and the absence of capable guardians meet in the same place and time. Routine activity theory provides an important framework for examining bullying victimization within a school setting because it attempts to explain why crime is more likely to occur in certain situations and affect certain people. In the case of bullying, a motivated offender is a bully who takes advantage of power differentials to harm others intentionally and repeatedly. Target suitability could be affected by several factors such as psychological factors, race/ethnicity, and gender. Students who were more likely to be a target of bullies are commonly emotionally and physiologically weaker than other students (Olweus, 1997). Bully victims were more likely to feel sad, anxious, nervous, and lonely (Peskin et al., 2006) and they were less likely to stand up for themselves and have fewer friends, which make them a more suitable target for a motivated offender (Jerals, 2011). Those with fewer friends may lack guardianship, which makes them suitable targets for motivated offenders. Additionally, in the case of bullying victimization in school, guardianship can be anyone or anything that prevents students from becoming victims of bullies such as metal detectors, spiked fences, electrical

controlled gates, security personnel, and adults supervising the hallways. This study will examine a number of important factors such as gender, school security, and involvement in extracurricular activities, which may influence bullying victimization from a routine activity perspective. In the next section, these factors and their effect on individuals' risk of bullying victimization will be discussed from a social bond perspective.

Social Bond Theory

Hirschi (1969) emphasizes the importance of bonds individuals have to conventional society and assumes that when bonds to society are broken or weakened, deviant acts occur because the motivation to engage in deviant acts is constant. This is because people have “natural” urges and hedonistic drives, which may cause them to act in aggressive or selfish ways that lead them to criminal behavior. Hirschi (1969) claims that social bonds control those “natural” urges. Therefore, it is important to ask not why people are motivated to commit crime, but why do we not all do it?

Hirschi (1969) defines four elements of bonds to society, which are attachment, commitment, involvement, and belief. These bonds prevent individuals from committing crime. Attachment, according to Hirschi (1969), refers to individuals' sensitivity to the opinion of other people and institutions. Hirschi (1969) argues that parents' interactions with youth have a significant role in terms of the formation of attachment. Hirschi (1969) explained that, “the emotional bond between the parent and the child presumably provides the bridge across parental ideas and expectations” (p. 86). These bonds between parents and the child should be strong enough to help the child to learn moral rules and develop the superego, which demands people to act in a moral and socially appropriate manner. Hirschi (1969) reported that youth who tell their parent what they are doing are

less likely to engage in delinquent activities because their parents are psychologically present. These youth think their parents know what they are doing and where they are. He claimed that youth are less likely to engage in delinquent activities when they spend time with their parents because their parents directly supervise them. Thus, weaker or no attachment to parents cause a greater risk of the youth engaging in delinquent acts while closer attachment to parents lowers the chances of delinquency. This is because youth care about what their parents think and do not wish to disappoint them.

Similarly, Hirschi (1969) emphasizes the significance of attachment to school in terms of preventing youth from engaging in delinquent acts. The higher attachment bond within school may lower the risk of deviant acts because youth are concerned about the opinion of others such as teachers. For instance, Hirschi (1969) reported that the youth who do care about what teachers think about them were less likely to engage in delinquent acts. In sum, the greater attachment level results in increased social control on individuals, which prevents them from engaging in delinquent acts.

Commitment is a second type of bond in which Hirschi (1969) emphasizes the importance of investment in conventional society, such as getting an education, working, and saving money for the future. He argues that how much individuals have to lose when they break the law is significant because people need to think about the costs of their deviant acts when they consider engaging in deviant acts (p. 21). When individuals engage in deviant acts, they endanger those investments that they have made for their future. Therefore, people obey rules of society in order to protect what they have. For instance, education and employment are important activities that protect people from committing deviant acts. Hirschi (1969) reported that “the higher students’ educational

aspirations... the less likely he is to commit delinquent acts” (p. 171) because those who have higher educational aspirations do not want to jeopardize their future. It is clear that education and possible career plans serve as an important source of social control, which prevents people from engaging in deviant acts.

Involvement is the third type of social bond where Hirschi (1969) argued that participating in conventional activities decreases the opportunity of deviant acts. For instance, the child who is doing his homework, swimming, or playing Ping-Pong does not have too much time to engage in deviant acts. Additionally, Hirschi (1969) emphasized the importance of the quality of activities and reported that youth who are involved in “working-class-adult” activities such as riding around, smoking, drinking, and dating are more likely to commit delinquent acts than youth who are involved in conventional activities such as homework (p. 196).

Belief is the final type of social bond, which refers to the existence of a shared common value system within society. Hirschi (1969) argues, “There is variation in the extent to which people believe they should obey the rules of society” (p. 21) which means the importance of those values may depend on the person. Therefore, the less important such values are to individuals, the more likely they will engage in deviant behavior. For instance, Hirschi (1969) reported that youth, who have a lack of respect for the police and have a lack of respect for the law, were more likely to engage in deviant acts.

Although Hirschi’s theory was mainly created to explain delinquent acts and not victimization, it can be linked to victimization and bullying victimization in particular because there is a strong overlap between offending and victimization, which indicates that the causes of offending and victimization may be similar. For example, Lauritsen and

Quinet (1995) reported that a deviant lifestyle is the main cause of increasing larceny, vandalism, and robbery victimization. Lauritsen et al. (1991) also found that adolescents' risk of personal victimization was strongly related with delinquent behavior. Nansel et al. (2003) reported that bullying involvement, for both bully and victim, was associated with weapon carrying and violent behavior, which might cause further delinquency or victimization.

Several researchers used a social control perspective to examine the roles of social bonds for offending. For instance, Hirschi (1969) argues that the strong attachment with parents prevents youth from engaging in delinquent acts because they are more likely to be supervised by their parents. In the case of school bonds, many researchers agree that strong school social bonds play a significant role in terms of preventing deviant acts (Stewart, 2003; Catalano et al., 2004; Payne et al., 2003; Welsh, 2001). Stewart (2003) examined individual and school related factors in order to explain variation in school misbehavior among high school students and found that lower levels of misbehavior in school was significantly and negatively related to higher levels of school attachment, commitment, and belief in school rules. Stewart (2003) reported that belief in school rules was the strongest social bond, which prevents students from engaging in delinquent behaviors. Students who feel supported and cared about by friends and teachers are less likely to engage in delinquent behavior and instead show socially acceptable behaviors and have stronger ties to school. Well-defined educational goals are also important to protect students from engaging in delinquent acts (Stewart, 2003).

Additionally, some researchers used social control theory to explain how social bonds might be important in preventing victimization. Payne et al. (2003) reported that

higher levels of student bonding to school are related to lower levels of victimization and delinquency. They emphasized the importance of communal school organizations, which are based on collaboration, participation, shared expectations, social relations, and positive teacher and student relations. These elements lead to higher levels of academic achievement, higher levels of social control, and lower levels of delinquency and misbehavior. Payne et al. (2003) argue that students, who have a higher sense of community, have greater bonds to school including attachment to teachers, commitment to the school, and acceptance and compliance with the norms of school.

Additionally, Catalano et al. (2004) explored the relationship between school attachment and commitment and behavioral outcomes for students and reported that strong school bonding contributes to positive outcomes, such as academic performance, social competence, less criminal involvement, gang membership and lower school dropout (Catalano et al., 2004).

This study will examine a number of important factors such as gender, school security measures, and involvement in extracurricular activities, which may influence bullying victimization from a social bond perspective. In the next section, these factors and their relations to risk of bullying victimization will be explained separately based on both routine activity and social bond theories and then the hypotheses of this study will be stated.

Current Study

Gender

Various studies found that females are less likely to become a victim of direct bullying than male students while males are less likely to become a victim of indirect

bullying (Turner et al., 2011; Bradshaw et al., 2009; Nansel et al., 2001; Carbone-Lopez et al., 2010; Richard et al., 2011; Popp, 2012). Routine activity theory might explain these differences through differential gender experiences in socialization and norms. Specifically, society creates gender specific expectations that males should be masculine which includes traits such as being strong, aggressive, dominant, and competitive (Padavic & Reskin, 2002). Therefore, for male students, bullying other male students might be a way to assert their masculinity and dominance. On the other hand, females are expected to act feminine which includes traits such as frailty and virtuous (Padavic & Reskin, 2002). These gender norms specify that males should protect females given stereotypes of their weaker nature. Therefore, males may not view females as a suitable target for direct bullying. Also, females may be less likely to see males or females as suitable targets for direct bullying because this behavior would be inconsistent with femininity and because they are socialized to believe males are dominant, powerful and physically stronger than females.

In support of these ideas, Popp and Peguero (2001) examine how individuals' routine activities are shaped by gender and how it affects their victimization. They examined student's school activity involvement and their likelihood of victimization. Popp and Peguero (2011) found that females who participate in sports were more likely to be targeted because they were violating traditional gender norms. However, those women are less likely to be victimized when teachers, coaches, and other staff were present.

Social bond theory may also be applied to explaining gender differences in bullying victimization. In support of this idea, Jenkins (1997) found race/ethnicity and

gender indirectly influenced school misbehavior through social bonds. For instance, white students and female students have stronger bonds to school, which was related to less misbehavior at school (Jenkins, 1997). Researchers reported that attachment and emotional bonds (Heubner & Betts, 2002) and commitment (Laundra, Kiger, & Bahr, 2002) to the parents have more protective effects on females compared to males. Therefore, it can be argued that female students are less likely to be a victim of bullying because they may be more likely to be supervised by adults resulting in higher attachment and more guardianship, and may have stronger commitment, involvement, and belief bonds with school. However, social bonds may not protect female students from indirect bullying because of the norms surrounding indirect bullying and gender. This is because it is considered acceptable for girls to gossip, tease, and exclude others from social events (Bjorkquvis, Lagerspetz, & Kaukiainen, 1992).

Therefore based on the routine activity and social bond framework, I hypothesize:

- Hypothesis 1: Males will be more likely to be a victim of direct bullying than females.
- Hypothesis 2: Females will be more likely to be a victim of indirect bullying than males.

School Security Measures

School security measures are important to reduce victimization in general and bullying victimization in particular at school. There are several researchers that discuss the effectiveness of two main categories of security measures in terms of preventing school violence and bullying victimization including physical and interactionist security measures (Time, & Payne, 2008; Popp, 2012; Richard et al., 2011; Gregory et al., 2010;

Twemlow et al., 2001). Physical security measures include security cameras, security guards, and locker checks while interactionist security measures include positive and open communication between students and school staff.

Based on routine activity theory, guardians are important to prevent victimization because crime occurs in the absence of capable guardians. In addition, reducing the attractiveness of targets can prevent victimization. Physical security measures such as capable guardians may play an important role in terms of preventing direct bullying victimization. For example, security cameras or security guards can be used to reduce physical bullying because students are aware that they are being watched. However physical security measures might not to be related to indirect bullying because security cameras, guards, or teachers are unlikely to see or be able to prevent a rumor from starting. Therefore, I hypothesize:

- Hypothesis 3: Physical security measures will reduce the likelihood of direct bullying victimization.
- Hypothesis 4: Physical security measures will not be related to indirect bullying victimization.

Social bond theory, on the other hand, emphasizes the importance of individuals' bonds in preventing delinquent acts. For instance, Jenkins (1997) reported students who have stronger bonds to school engaged in less misbehavior at school. It is possible that these students may experience less bullying victimization than other students because they have stronger bonds. In other words, bonds may protect them from engaging in misbehavior as well as being a victim of bullying. The closer and more positive relationships between students and their peers and teachers may provide stronger bonds

and an important social support. These bonds might allow students to open up to teachers and their friends, which may reduce a student's likelihood of bullying victimization. This is because stronger bonds might affect whether individuals tell of their experiences, as well as how their teachers and friends respond to them. In support of these ideas, Pop (2012) reported that student's social support reduces their likelihood of bullying victimization. According to Catalano et al. (2004) strong school bonds inhibit behavior that is inconsistent with the values and rules of the school. They add that if school rules are negative, problem behaviors are the likely result, but if the rules are positive, positive behaviors are the likely result. To support this idea, Cunningham (2007) found that students who reported no or low levels of bullying victimization and bullying have stronger bonds to school and greater investment in prosocial behaviors and beliefs. Therefore, it is possible that students who are victims would have more negative perceptions of school rules and they would be bonded less strongly to school than non-bullied students.

It is likely that physical security measures will be more effective at reducing physical bullying given the overt nature of these acts, but security guards and cameras may not prevent indirect bullying because it is difficult to detect gossip or prevent it by security guards or cameras. However, bonds with others may provide an important social support of teachers or friends in terms of protecting individuals from direct and indirect bullying. Therefore, social bond theory will be used to test the effectiveness of interactionist security measures in terms of preventing direct and indirect bullying victimization. Therefore, I hypothesize:

- Hypothesis 5: Interactionist security measures will reduce the likelihood of direct bullying victimization.
- Hypothesis 6: Interactionist security measures will reduce the likelihood of indirect bullying victimization.

Extracurricular Activity Involvement

Several studies find that student's involvement in extracurricular activities and the types of extracurricular activities affect their likelihood of victimization (Popp & Peguero, 2011; Peguero, 2009; Welsh, 2001; Burrow, & Apel, 2008). Based on routine activity theory, crime is more likely to occur in the absence of capable guardians. Therefore, involvement in school activities in the absence of adults in the school environment may increase the risk of bullying victimization. In addition, target suitability is important for explaining who is more likely to be a victim of bullying. Popp (2012) found students who attend classroom related activities, including performing arts, academic clubs, and student government have a higher risk of bullying victimization than those who attend sport related activities. This is because they may be perceived as weak, and so they are more likely to be perceived as suitable targets for motivated offenders (Peguero, 2008).

However, based on social bond theory involvement may protect students from bullying victimization because those who bully and the victims will be occupied in conventional activities reducing the time available to engage in bullying. As reviewed earlier, involvement in activities may provide potential victims with social support from friends and teachers or other adults in the school increasing attachment and commitment

to school, which may prevent students from experiencing bullying victimization.

Therefore, I Hypothesize:

- Hypothesis 7: Sport related extracurricular activities will decrease the likelihood of direct bullying victimization.
- Hypothesis 8: Sport related extracurricular activities will decrease the likelihood of indirect bullying victimization.
- Hypothesis 9: Non-sport related extracurricular activities will increase the likelihood of direct bullying victimization.
- Hypothesis 10: Non-sport related extracurricular activities will increase the likelihood of indirect bullying victimization.

CHAPTER III

DATA AND METHODS

Sample

The 2011 School Crime Supplement (SCS) of the National Crime Victimization Survey (NCVS) data are used in this study (United States Department of Justice, 2011). The NCVS is the primary source of statistical information about criminal victimization in the United States and is conducted by the Census Bureau for the Bureau of Justice Statistics (BJS). It is a self reported survey that includes detailed statistical information about the frequency and the nature of criminal victimization in the United States, including robbery, sexual assault, aggravated assault, simple assault, rape, burglary, motor vehicle theft, or other theft (US DOJ, 2011). The NCVS provides information about crime that is both reported and unreported to the police. The NCVS includes surveys of people ages 12 and older from a nationally representative sample of households in the US (US DOJ, 2011). The 2011 NCVS consisted of approximately 79,800 households, which are selected by using a stratified multi-stage cluster design. Individuals in households included in the NCVS sample are interviewed every 6 months over three years for a total of seven interviews in order to determine the extent of their victimization during the 6 months preceding the interview. These interviews are conducted by face-to-face interview via computer-assisted personal interviews (US DOJ, 2011).

In addition to the regular information collected in the NCVS, some supplemental surveys also are used to obtain information about specific issues that relate to crime (US DOJ, 2011). Given the focus on bullying victimization, I rely on the School Crime Supplement (SCS) of the NCVS. The SCS was conducted first in 1989, and then in 1995, 1999, 2001, 2003, 2005, 2007, 2009, and 2011. The primary purpose of the SCS is to obtain additional information on school-related victimization on a national level (US DOJ, 2011). The SCS includes questions related to “student’s experiences with, and perception of crime and safety at school” (US DOJ, 2011, P.5), including school security measures employed in schools, a student’s participation in after school activities, their perception of school rules and enforcement of these rules, the presence of drugs, alcohol, weapons, gangs in school, hate related incidents, student bullying, and attitudinal questions relating to fear of victimization at school (US DOJ, 2011).

The 2011 SCS was administered to 10,341 eligible NCVS respondents ages 12 through 18 within households between January through June of the year of data collection (US DOE, 2013). To be eligible for the SCS, respondents must be enrolled in primary or secondary education for at least some part of the school year and also be in grades six through twelve. Also, students were included in the survey even if they were homeschooled during the school year, had quit school, were suspended, or were absent as long as they had attended school any time during the 6 months prior to the month of an interview (US DOJ, 2011). In 2011, 10,341 respondents were screened for the SCS supplement and 6,547 (63.3%) of them completed an interview while 3,794 (36.7%) of them were non-interviews (US DOJ, 2011). Because these analyses mainly focus on

bullying victimization in the school setting, 237 homeschooled students were excluded from the sample.

Dependent Variables

Bullying victimization

The likelihood of a student's bullying victimization was measured by whether or not the student experienced any form of *direct* or *indirect bullying victimization*. *Direct bullying* includes such behaviors as hitting, kicking, spitting, and taking someone's belongings, and *indirect bullying* includes making fun of, spreading rumors about someone, and social exclusion (Carbone-Lopez, Esbensen, & Brick, 2010). To measure *direct bullying*, respondents were asked whether they have been threatened, have been pushed, shoved, tripped, or spit on, had their personal property destroyed, and were made to do things that they did not want to do. The *indirect bullying* variable includes responses to whether students had been made fun of, had rumors spread about them, or been excluded from activities by their peers. Because the prevalence of bullying was low, both direct and indirect bullying victimization were coded *yes* if the student experienced at least one of these bullying behaviors and were coded *no* if the student did not experience any of these bullying behaviors during the school year.

Independent Variables

Gender

The first key independent variable for this study is *gender*. *Gender* is derived from responses to the main NCVS instrument. *Gender* is captured by the sex of the respondent, which was coded as 0 for females and 1 for males.

School Security Measures

Security measures were divided into *interactionist* measures (Time & Payne, 2008), which refer to open and positive relationships between students and school administration and teachers, and *physical* measures (Time & Payne, 2008), which include measures to prevent school violence and bullying such as locker checks, security guards, and security cameras. Physical *security* measures were used to test routine activity theory because it emphasizes the importance of capable guardians in terms of preventing victimization while the *interactionist security* measures were used to test the elements of social bond theory given the focus on the quality of relationships.

Physical security measures were used to assess the impact of security measures on students' risk of direct bullying victimization. The physical security measures indicate whether a student reported the school had "security guards or assigned police officers," "Locker checks," and "One or more security cameras to monitor the school." Response options include yes (coded as 1), no (coded as 0), and don't know (coded as 0). Don't know was coded as 0 for two reasons. If the student were unaware of a security measure, then the effect on them would be similar to the security measure not being present. Additionally, large percentage of values would be lost if unknown was coded as missing. *Physical security* measures range from 0 (none of these security measures are present) to 3 (all of these security measures are present).

In this study, *interactionist security* measures, which related to the attachment bond, were used to estimate the effect of security measures on student's risk of bullying victimization. The attachment bond was captured through five items, including whether students reported they had an adult or friend who care about them, they can talk to, and

help them if they needed, and how much respondents believe school rules are clear, fair, or strictly enforced ranging from 1 (strongly agree) to 4 (strongly disagree). These items were reverse coded and summed so that a higher number represents student's greater attachment to school. Based on factor analysis and the high alpha reliability score for the attachment items, all items were combined into a single scale with a higher score indicating more interactionist security measures present. For the interactionist security measures, five items of the interactionist security measures were used to estimate the reliability of those measures, which was found to be 0.68.

Extracurricular activity involvement.

From a social bond perspective, total *involvement* should reduce bullying victimization. However, from a routine activity perspective, certain members of groups such as academic clubs and band may be more likely to be viewed as suitable targets because these students are viewed as weaker than those involved in sports. Therefore, the types of activities were separated into two types, athletic teams and spirit groups in one group with performing arts, academic clubs, student government, performing arts, volunteer clubs and others in a second group. Each of these variables was coded as *yes* (1) if a student reported attending at least one of these activities and *no* (0) if they were not involved in any of these activities.

Control variables

Although some studies have not found significant correlations in bullying victimization based on race/ethnicity (Seals & Young, 2003), many studies have found significant correlations between race/ ethnicity and bullying victimization. (Carbone-

Lopez et al., 2010; Wang et al., 2009; Popp, 2012; Felix et al., 2009). Therefore, *race* was used as a control variable because it was considered one of the factors, which might affect bullying victimization. Four dummy variables for race were created including White, Black, Asian, and Other. Other included American Indian, Asian, and Hawaiian. Black was used as the reference category. *Hispanic origin* was coded as 1 and non-Hispanic origin was coded as 0.

The type of the school, whether public or private, might affect the likelihood of bullying victimization in schools. The *school variable* was coded 1 for public and 0 for private, which indicates the types of school the student attended during the 2010-2011 school year. Household income was included as a control and ranged from 1 indicating income less than \$5,000 to 11 indicating income more than \$75,000. The final control variable is age, which ranged from 12 to 18 years of age.

Analytical Procedure

First, descriptive statistics will be provided including the key dependent and independent variables as well as the control variables. The correlation matrix will be presented in order to assess the bivariate relationships. Next, logistic regression will be used to analyze the effects of gender, security measures, extracurricular activity involvement, and the controls on bullying victimization. Binary logistic regressions will be completed for each of the bullying measures because most students reported they had not experienced any form of bullying. Therefore, the bullying variables are dichotomized to indicate whether any of the types of bullying occur. For each type of bullying victimization (direct and indirect), two models are presented. The first model includes

only the key independent variables while the second model includes the independent variables as well as the controls.

CHAPTER IV

RESULTS

Descriptives

Descriptive statistics for the dependent, independent, and control variables are presented in Tables One, Two and Three. It should be noted that the sample size for each variable varies slightly. This is to give an accurate measure of the breakdown of the respective variables before certain cases were deleted due to listwise deletion in the regression models.

To examine the frequency of the types of bullying (See Table 1), the mean for each type of bullying victimization were reported. The most frequently reported types of direct bullying victimization were being pushed, shoved or tripped (8.0%) and being threatened with harm (5.1%), while the least frequently reported direct bullying victimization were being coerced (3.3%) and having property destroyed by another (2.8%). Respondents reported that they were a victim of direct bullying .19 times on average, and overall 12 percent of students experienced at least one type of direct bullying.

The most frequently reported types of indirect bullying victimization include the spread of rumors (18.6%) and being made fun of or called names (17.9%), while the least frequently reported were being excluded from activities (5.5%). Additionally,

respondents reported that they were a victim of indirect bullying .42 times on average, and overall 25 percent of students experienced at least one type of indirect bullying.

Table 1 Descriptive Statistics for Dependent Variables

Variables	N	Min	Max	Mean	S. D.
<i>Dependent Variables</i>					
<i>Direct Bullying</i>					
Threatened with Harm	5,695	0	1	0.051	0.220
Pushed, Shoved, Tripped	5,693	0	1	0.080	0.271
Coerced	5,691	0	1	0.033	0.178
Destroyed Property	5,688	0	1	0.028	0.164
Total Direct Bullying	5,685	0	4	0.191	0.573
Dichotomous Direct Bullying	5,685	0	1	0.120	0.333
<i>Indirect Bullying</i>					
Spread Rumors	5,687	0	1	0.186	0.389
Excluded from Activities	5,689	0	1	0.055	0.228
Made Fun of, Called Names	5,696	0	1	0.179	0.383
Total Indirect Bullying	5,680	0	3	0.420	0.797
Dichotomous Indirect Bullying	5,680	0	1	0.250	0.430

Min = Minimum

Max = Maximum

S. D. = Standard Deviation

Second, with regard to the distribution of the independent variables (See Table 2), gender was evenly distributed within the sample with about 50 percent of the sample being male and 50 percent of the sample being female. In regards to other key independent variables pertaining to physical security measures, the most frequently reported physical security measures were the presence of security cameras (76.4%) and security guards (68.8%) while the least frequently reported physical security measure was

the locker checks (53.3%). On average respondents reported that their school had about 2.0 physical security measures. Overall, 94.0 percent of students reported that their school had at least one of the physical security measures.

Regarding the interactionist security measures, participants responded affirmatively to the presence of caring adults (3.3) and friends (3.5), knowledge of school rules (3.3), fairness of school rules (3.2), and enforcement of school rules (3.1). These factors were assessed on a four point Likert-type scale with four indicating strongly agree and one indicating strongly disagree.

For extracurricular activities, regarding sport related activities, participants most frequently reported participation in athletic teams (39.4%) with approximately 9 percent participating in spirit groups. Additionally, 43.0 percent of students participated either in athletic teams or spirit groups. For non-sport related activities, participants most frequently reported participating in performing arts (27.7%), academic clubs (20.7%), and volunteer or community service (17.0%), while the least reported activity was involvement in student government (6.6%). Students reported being involved in non-sport related activities .74 on average. Overall, 49.0 percent of students participated in at least one non-sport related activities.

Table 2 Descriptive Statistics for Independent Variables

Variables	N	Max.	Min.	Mean	S. D.
<i>Independent Variables</i>					
<i>Gender (Male)</i>	6,017	0	1	0.504	0.500
<i>Security Measures</i>					
<i>Physical Security</i>					
Security Guard	5,723	0	1	0.688	0.463
Locker Checks	5,328	0	1	0.533	0.499
Security Camera	5,724	0	1	0.764	0.425
Total Physical Security	5,327	0	3	1.99	0.892
Dichotomous Physical Security	5,327	0	1	0.94	0.246
<i>Interactionist Security</i>					
Caring Adults	5,679	1	4	3.279	0.602
Caring Friends	5,694	1	4	3.459	0.572
Knowledge of School Rules	5,705	1	4	3.281	0.606
Fairness of School Rules	5,702	1	4	3.167	0.588
Enforcement of School Rules	5,687	1	4	3.114	0.628
Total Interactionist Security	5,641	9	20	16.303	1.998
<i>Extracurricular Activities</i>					
<i>Sport Related Activities</i>					
Athletic Teams	5,724	0	1	0.394	0.489
Spirit Groups	5,723	0	1	0.093	0.291
Total Sport Related Activities	5,722	0	2	0.487	0.599
Dichotomous Sport Related Activities	5,722	0	1	0.430	0.490
<i>Non-Sport Related Activities</i>					
Performing Arts	5,721	0	1	0.277	0.448
Academic Clubs	5,722	0	1	0.207	0.405
Student Government	5,721	0	1	0.066	0.248
Volunteer or Community Service	5,721	0	1	0.170	0.376
Other School or Club Activities	5,720	0	1	0.018	0.132
Total Non-Sport Related Activities	5,717	0	5	0.737	0.903
Dichotomous Non-Sport Related Activities	5,717	0	1	0.490	0.500

Max. = Maximum

Min. = Minimum

S.D. = Standard Deviation

Finally, reporting the frequency of the control variables (See Table 3), regarding the racial categories, the majority of students were White (79.4%), Black students were about 12 percent of the sample, Asians were 3.8 percent of the sample, and other races comprised 4.3 percent of the sample. Students of Hispanic origin comprised 22.4 percent of the sample. Most participants reported attending public schools (92.1%). The average of household income fell between \$35,000 - \$49,999. Finally, the average of respondents' age was approximately 14.8 year.

Table 3 Descriptive Statistics for Control Variables

Variables	N	Minimum	Maximum	Mean	Standard Deviation
<i>Control Variables</i>					
<i>Race</i>					
White	6,017	0	1	0.794	0.404
Black	6,017	0	1	0.124	0.330
Asian	6,017	0	1	0.038	0.192
Other	6,017	0	1	0.043	0.203
<i>Ethnicity</i>					
Hispanic Origin	6,014	0	1	0.224	0.417
Public School	5,749	0	1	0.921	0.269
Household Income	4,770	1	11	8.490	2.933
Age	6,017	12	18	14.843	1.931

Correlations

The Pearson correlation matrix was run to determine the bivariate relationships between the dependent, independent, and control variables of the study (See Table 4). The correlation coefficient ranges from positive 1.0 to negative 1.0. If a positive 1.0 is found, this indicates a perfect positive correlation, and a negative 1.0 indicates a perfect negative correlation and 0 indicates no correlation. Agresti (2007) suggests that values of Pearson's r ranging from 0.00 to 0.29 refer to a weak relationship, values from 0.30 to 0.70 refer to a moderate relationship, and values from 0.70 to 1.0 refer to a strong relationship. Based on the results obtained from this study, there were variations in terms of strengths and the directions of the relationships between the variables.

With regard to the key independent variables, there was a negative and weak, but statistically significant relationship between being male and indirect bullying victimization ($r = -0.10$). This means that males are less likely to experience indirect bullying than females. No significant bivariate relationship was found between gender and direct bullying contrary to expectations. For school security measures, there was a positive and weak, but significant relationship between physical security measures and direct ($r = 0.04$) and indirect bullying victimization ($r = 0.02$), implying physical security measures increase the likelihood of both direct and indirect bullying victimization. On the other hand, there was a weak and negative, but statistically significant relationship between interactionist security measures and direct bullying ($r = -0.13$), and indirect bullying, ($r = -0.10$), implying interactionist security measures decrease the likelihood of both direct and indirect bullying victimization. Regarding extracurricular activities, there was a weak and positive, but significant relationship

between non-sport related activities and direct ($r = 0.03$) and indirect bullying ($r = 0.09$), which means that those who are involved in non-sport related activities are more likely to report being a victim of direct and indirect bullying.

Finally, with regard to the demographic control variables of this study, there was a positive and weak, but significant relationship between White students and indirect bullying victimization ($r = 0.03$). There was a negative and weak, but statistically significant relationship between Asian students and direct bullying ($r = -0.04$) and indirect bullying victimization ($r = -0.06$). There was also a weak and negative, but significant relationship between students of Hispanic origin and direct ($r = -0.04$) and indirect bullying victimization ($r = -0.08$).

The school type (public versus private) also was found to be related to direct and indirect bullying victimization. There was a positive and weak, but statistically significant relationship between public schools and direct bullying ($r = 0.04$), and indirect bullying victimization ($r = 0.04$), which means students in public schools are more likely to experience direct and indirect bullying victimization than those in private schools. There was a negative and weak, but statistically significant relationship between household income and direct bullying victimization ($r = -0.03$), implying that those with higher household incomes have a reduced likelihood of direct and indirect bullying victimization. Finally student's age was found to be related to both direct and indirect bullying victimization. There was a negative and weak, but statistically significant relationship between age and direct bullying ($r = -0.09$), and indirect bullying victimization ($r = -0.08$), implying that older youth are less likely to be a victim of both direct and indirect bullying.

Table 4 Correlations Among Variables

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Direct Bullying	1														
2. Indirect Bullying	.483**	1													
3. Male	0.02	-.098**	1												
4. Physical Security Measures	.036**	.029*	0.014	1											
5. Interactionist Security Measures	-.125**	-.104**	-.069**	0.022	1										
6. Sport Related Activities	-0.01	0.02	-.044**	.034*	.065**	1									
7. Non-Sport Related Activities	.031*	.086**	-.148**	.037**	.104**	.207**	1								
8. White	0.00	.031*	0	-.041**	0.019	.030*	0.016	1							
9. Black	0.02	0.004	-0.016	.056**	-0.017	-0.024	-.037**	-.760**	1						
10. Asian	-.044**	-.056**	0.017	-0.019	0.002	-.033*	.053**	-.387**	-.080**	1					
11. Other Race	0.01	-0.016	0.012	0.008	-0.012	0.01	-0.02	-.385**	-.080**	-.041**	1				
12. Hispanic	-.039**	-.078**	0.002	.045**	-.027*	-.053**	-.070**	.203**	-.174**	-.092**	-.030**	1			
13. Public School	.055**	.041**	.030*	.217**	-.108**	-.094**	-.057**	-.026*	0.011	-0.007	.040**	.058**	1		
14. Household Income	-.034*	-0.012	0.014	-.056**	.087**	.141**	.147**	.186**	-.219**	.034**	-.045**	-.197**	-.126**	1	
15. Age	-.090**	-.081**	0.01	.190**	-0.004	0.015	.043**	-0.001	0.004	0.007	-0.012	0.002	0.02	-0.017	1

**Correlation is significant at the 0.01 level (2-tailed).

*Correlation is significant at the 0.05 level (2-tailed).

Direct Bullying

Binary logistic regression was used to predict the likelihood of a student's direct and indirect bullying victimization. Odds ratios ($\text{Exp}[B]$) were used for the interpretations of binary logistic regression analysis of direct and indirect bullying victimization. Odds ratios were interpreted as for each unit change in independent variables, the odds are expected to change by a factor of ($\text{Exp}[B]$), holding all other variables constant (Long & Freese, 2003).

For each dependent variable, two models were presented: the first model shows the main effects of the independent variables, and the second model, additionally, includes control variables. Due to discrepancies in case-by-case reported data, and list wise deletion the final models for the two dependent variables are of slightly different sizes for analyses of the likelihood of direct bullying victimization ($N = 4, 147$) and indirect bullying victimization ($N = 4,145$).

Table 5 shows whether or not the independent variables of gender, physical security, and interactionist security, sport related activities, non-sport related activities, and race, ethnicity, school, household income, and age as control variables affect the likelihood of direct bullying victimization. Given that Model 1 and Model 2 are similar, the results of Model 2 will be interpreted. Contrary to Hypothesis 1, results were not significant for direct bullying in terms of gender. While the direction of the coefficient was positive as expected, males and females do not differ significantly in the experience of direct bullying victimization.

Regarding the security measures, physical and interactionist security measures have different effects on the likelihood of direct bullying victimization. Contrary to

Hypothesis 4, the results show that there was no significant relationship between physical security measures and direct bullying victimization. However, as hypothesized, the results for interactionist security measures indicate that there was a significant relationship between interactionist security measures and direct bullying victimization. The results show that the interactionist security measures significantly reduce the risk of direct bullying victimization ($B = -.966, p < .001$). In particular, for each unit increase in interactionist security, the odds of students experiencing direct bullying victimization decreases by .380 times.

Looking at the relationship between sport related and non-sport related activities, and direct bullying victimization, contrary to expectations in Hypothesis 8, the results indicate that sport related activities were not related to direct bullying victimization, which means that involvement in sport related activities have no effect on experiencing direct bullying victimization. However, as expected, non-sport related activities significantly increase the risk of bullying victimization ($B = .240, p < .05$). In particular, for each unit increase in non-sport related activities, the odds of students experiencing direct bullying victimization increases by 1.272 times.

Finally, looking at the control variables, student characteristics of race, ethnicity, and age as well as household income show a statistically significant effect on the likelihood of being a victim of direct bullying. The analysis indicates that Asian students were .443 times less likely to experience direct bullying victimization than African American students ($B = -.814, p < .05$). In addition, results indicate that Hispanic students are .696 times less likely to experience direct bullying victimization than non-Hispanics ($B = -.362, p < .01$). The results show that age was significantly related to direct bullying

victimization. In particular, for every unit increase in age, a student's risk of direct bullying victimization decreases by .820 times. For household income, results indicate that increasing the household income decreases the likelihood of direct bullying victimization ($B = -.038, p < .05$).

Table 5 Logistic Regressions for Direct Bullying Victimization (N = 4,147)

Variables	Model 1		Model 2	
	B (SE)	OR	B (SE)	OR
Physical Security Measures	.176 (.211)	1.093	.299 (.218)	1.349
Interactionist Security Measures	-.934 (.109)***	0.393	-.966 (.111)***	0.38
Sport Related Activities	-.084 (.094)	0.92	-.036 (.097)	0.965
Non-Sport Related Activities	.223 (.095)*	1.25	.240 (.097)*	1.272
Male	.089 (.094)	1.093	.85 (.095)	1.089
White			.066 (.148)	1.068
Asian			-.814 (.359)*	0.443
Other Race			.034 (.247)	1.035
Hispanic			-.362 (.129)**	0.696
School Household Income			.288 (.200)	1.33
Age			-.188 (.026)***	0.82
Constant	-1.427 (.236)***	2.996	1.285 (.488)**	3.614
-2 Log Likelihood	3160.273		3085.945	
χ^2	74.283		148.612	
Cox & Snell R-square	0.018		0.035	

Note: OR= Odds Ratio

* p < .05 **p < .01 ***p < .001.

Note: African American Reference Category

Indirect Bullying

Binary logistic regression was also used to predict the likelihood of a student's indirect bullying victimization. Two models were presented for indirect bullying: the first model shows the main effects of the independent variables, and the second model includes both independent and control variables. Table 6, Model 2 shows whether or not the independent variables of gender, physical security, interactionist security, sport related activities, non-sport related activities, and race, ethnicity, school type, household income, and age affect the likelihood of indirect bullying victimization.

Given that Model 1 and Model 2 are similar, the results of Model 2 will be interpreted. The results shown in Table 6 reveal that gender was significantly related to indirect bullying victimization, as hypothesized. Based on the results, being male significantly decreases the likelihood of indirect bullying victimization ($B = -.440$, $P < .001$), which means males are less likely to experience indirect bullying victimization than females by .644 times.

Regarding the security measures, as hypothesized there was not a significant relationship between physical security measures and indirect bullying victimization. As expected, the results for interactionist security measures indicate that there was a significant relationship between interactionist security measures and indirect bullying victimization. The results show that the interactionist security measures significantly reduce the risk of indirect bullying ($B = -.778$, $p < .001$). In particular, for each unit increase in interactionist security measures, the odds of the students experiencing indirect bullying victimization decreases by .459 times.

Looking at the relationship between sport related and non-sport related activities, as can be seen in Table 6, Model 2, contrary to Hypothesis 9, the results indicate that there was not a significant relationship between sport related activities and indirect bullying. On the other hand, as expected, there was a significant relationship between non-sport related activities and indirect bullying. The results show that non-sport related activities significantly increase the likelihood of indirect bullying victimization ($B = .463$, $p < .001$). In particular, for each unit increase in non-sport related activities, the odds of students experiencing indirect bullying victimization increases by 1.588 times.

Finally, I assess the impact of the control variables on indirect bullying. The results show that students' characteristics of race, ethnicity, and age as well as household income have statistically significant effects on the likelihood of being a victim of indirect bullying victimization. The analyses indicate that students of Asian descent were .560 times less likely to experience indirect bullying victimization than African American students ($B = -.579$, $p < .05$). Results indicate that Hispanic students were .558 times less likely to experience indirect bullying victimization than non-Hispanic students ($B = -.583$, $P < .001$). While school type did not affect direct bullying victimization, those who attended public schools were significantly more likely to experience indirect bullying victimization. The results show that students in public schools were 1.333 times more likely to experience indirect bullying victimization than students in private schools ($B = .287$, $p < .05$). There was a significant relationship between household income and indirect bullying ($B = -.033$, $p < .05$, which means for every unit increase in household income, the risk of indirect bullying victimization decreases by .967 times. For age, the

results show that for every unit increase in age, students' risk of indirect bullying victimization decrease by .900 times.

Table 6 Logistic Regressions for Indirect Bullying Victimization (N = 4,145)

Variables	Model 1		Model 2	
	B (SE)	OR	B (SE)	OR
Physical Security Measures	.070 (.154)	1.072	.135 (.160)	1.145
Interactionist Security Measures	-.744 (.093)***	0.475	-.778 (.095)***	0.459
Sport Related Activities	-.057 (.073)	0.944	-.030 (.074)	0.97
Non-Sport Related Activities	.454 (.074)***	1.574	.463 (.075)***	1.588
Male	-.427 (.073)***	0.653	-.440 (.073)***	0.644
White			.216 (.118)	1.242
Asian			-.579 (.252)*	0.56
Other Race			-.007 (.202)	0.993
Hispanic			-.583 (.101)***	0.558
Public School			.287 (.144)*	1.333
Household Income			-.033 (.014)*	0.967
Age			-.105 (.020)***	0.9
Constant	-.476 (.179)**	0.621	1.001 (.370)	2.72
-2 Log Likelihood	4662.258		4582.613	
χ^2	138.481		218.126	
Cox & Snell R-square	0.033		0.051	

Note: OR= Odds Ratio

* p < .05 **p < .01 ***p < .001.

Note: African American Reference Category

In sum, the results show that there was not a significant relationship between gender and direct bullying while there was a significant relationship between gender and indirect bullying as expected. Unexpectedly, physical security measures were not significantly related to direct bullying victimization. As expected, physical security measures were not related to indirect bullying victimization. In addition, interactionist security measures significantly decrease the likelihood of both direct and indirect bullying victimization as expected. Results also show that sport related activities were not significantly related with direct and indirect bullying victimization contrary to expectations while non-sport related activities significantly increase the risk of direct and indirect bullying victimization as expectations.

CHAPTER V

DISCUSSION AND CONCLUSION

The purpose of this study was to explore whether a number of important factors such as gender, security measures, and extracurricular activities affect a student's likelihood of direct or indirect bullying victimization with routine activity and social bond perspectives. This study is unique and important because very few studies use routine activity or social bond theory to examine bullying victimization among school aged children, and because it adds to the literature through applying a new framework to the cause of being a victim of bullying. More specifically, security measures are divided into interactionist measures, which Time and Payne (2008) used to explain students' risk of victimization at school. An important contribution made by this study is that I use these security measures to examine students' risk of direct and indirect bullying victimization. Additionally, this study adds to the literature through dividing extracurricular activities into sport and non-sport related activities in order to examine whether a student's risk of direct and indirect bullying victimization changes based on the types of activity involvement from routine activity and social bond perspectives.

It was hypothesized that females would be more likely to be a victim of indirect bullying while males would be more likely to be a victim of direct bullying. Similar to previous research (Turner et al., 2011; Bradshaw, Sawyer, & O'Brennan, 2009; Nansel et al., 2001; Carbone-Lopez et al., 2010; Richard et al., 2011; Felix et al., 2009; Wang,

Iannotti, & Nansel, 2009), this study shows that females were significantly more likely to be a victim of indirect bullying than males. However, contrary to expectations, there were not significant gender differences in direct bullying, which replicates a previous research finding that males were not significantly more likely to be directly bullied compared to females (Peskin et al., 2006). One might think that male students may not want to report that they were physically bullied. This possible underreporting by males may occur because they may not want to be seen as weak due to gendered expectations of what it means to be male such as powerful and strong. Thus, this may explain the lack of gender differences in direct bullying victimization.

Regarding the physical and interactionist security measures, it was hypothesized that physical security measures would reduce the likelihood of direct bullying victimization while it would not be related to indirect bullying victimization. However, results show that physical security measures were not effective in reducing the likelihood of direct bullying. As expected, physical security measures was unrelated to indirect bullying victimization. These findings are similar with a previous research finding that physical security equipment were not effective in reducing victimization at school (Schreck et al., 2003; Burrow & Apel, 2008). These findings contradict the routine activity perspective because, based on routine activity theory, the existence of capable guardians should reduce the risk of bullying victimization. One might argue that the amount and implementation of physical security measures requires more attention. For instance, the amount of security cameras and the number of security guards or adults supervising hallways might be important in terms of reducing victimization based on the school size. One security camera or security guard cannot reduce bullying victimization

in a highly populated schools. In this study, it is not possible to know the school size as well as how many security measures exist in those schools, so this situation might explain why physical security measures seem unimportant in reducing bullying at school.

On the other hand, it was hypothesized that interactionist security measures would reduce the likelihood of both direct and indirect bullying victimization. The results point out that interactionist security measures significantly reduce the risk of both direct and indirect bullying. This finding replicates previous research, which linked the effect of interactionist security measures in reducing the risk of victimization at school (Time & Payne, 2008). These findings support the social bond theory, which proposes the importance of individual bonds in preventing criminal involvement and victimization. It can be said that the students who have stronger bonds with teachers and a greater belief in school rules have lower risks of both direct and indirect bullying victimization, which replicates a previous research finding that students who have stronger bonds to school have no or low levels of bullying victimization (Cunningham, 2007).

Additionally, it was hypothesized that sport related extracurricular activities would decrease the likelihood of both direct and indirect bullying victimization. Contrary to expectations and previous findings that sport related activities reduce victimization risk (Peguero, 2009; Peguero 2013), the results here indicate that sport related activities were not related to the likelihood of direct or indirect bullying victimization. Endresen and Olweus showed (2005) that involvement in sports increases level of violence. One might say that those who are involved in sports may not perceive some of these behaviors as bullying because those behaviors might seem to be part of the culture of sport itself. Based on social bond theory, it might be assumed that involvement in sport related

activities might protect students from being victims of bullying because bullies would be busy engaging in conventional activities, which might reduce their available time to engage in bullying.

On the other hand, it was hypothesized that non-sport related extracurricular activities would increase the likelihood of both direct and indirect bullying victimization. The results indicate that non-sport related activities significantly increase the risk of both direct and indirect bullying victimization in school. This finding supports Peguero's (2009) findings that involvement in classroom related activities and school clubs increases the likelihood of victimization, and Popp's (2012) findings that classroom related activities increase the risk of bullying victimization. The target suitability is important to understand these results because students who attend non-sport related activities may be perceived as a weaker target for motivated offenders (Peguero, 2008), which increase their risk of bullying victimization.

For the control variables of the study, it was found that student characteristics such as race and ethnicity, age, and household income have a statistically significant impact on the likelihood of being a victim of both direct and indirect bullying, while the characteristics of school (public or private) was significant for only indirect bullying victimization. The results show that Asian students have a lower risk of experiencing both direct and indirect bullying victimization than African American students, which replicates a previous research finding of Felix and colleagues (2009) who reported that Asian students have lower victimization rates than other students. Additionally, Hispanic students have a lower risk of bullying victimization than non- Hispanics, which contradict Wang et al. (2009) findings that Hispanic students report being bullied more

than African Americans. One might argue that these differences originate from immigration generations. For example, Peguero (2013) found that first and second generations were less likely to be victimized than third generations because the third generation immigrants were more likely to be involved in school than other generations. Those Asian and Hispanic students' experiences might be similar to the ones Peguero (2013) reported. In this study, it is not possible to know what generation those students are, but Peguero's study gives some important ideas of why these bullying victimization experiences can be different based on different immigrant generations. Finally, students with lower household income families have a higher risk of both direct and indirect bullying victimization. One might think that students of higher income families might have a chance to go to a school with better resources, where better interactionist security measures are in use for reducing bullying victimization.

Limitations

While this study has made numerous contributions to the literature, it is important to note a few limitations. One of the important limitations of the SCS data is the measurement of bullying victimization. Specifically, the measures may not capture the definition of bullying, which includes an imbalance of power, a repeated occurrence, and an intentional act. While it is likely that the acts captured in this survey are intentional, it is impossible to know whether bullying is repeated over time or whether it is based on an imbalance of power given that students just reported whether they experienced the event or not.

Furthermore, students may misinterpret the survey questions, which means they may not accurately report the bullying victimization because they answer them based on

their perceptions. For instance, students who participate in athletic teams may not consider shoving or pushing or teasing as a bullying behavior because this behavior might be part of the sport culture itself because increasing violent behavior was found to be related to participation in sport activities (Endresen, & Olweus, 2005), which might explain why physical bullying was not found to be significant.

Additionally, because the data only focus only on victims' experiences, it is not possible to know who is a victim of bullying and also who is a bully. As mentioned earlier, research on school shooting incidents showed that most of the shooters were bullies and victims (Anderson et al., 2001) and studies show that bullying involvement causes several detrimental problems such as lower self-esteem, loneliness, poorer psychological and social adjustment, higher risk of depression, and suicide ideation (Olweus, 1997; Vanderbilt & Augustyn, 2001; Turner, Exum, & Holt 2013). Therefore, it is also important to know which students also bully in order to create effective strategies for reducing bullying behavior.

Another important limitation of this study is that the School Crime Supplement does not provide information about the school size. For instance, having information about school size might be an important factor in terms of understanding why physical security measures are not effective in preventing direct bullying victimization because the numbers of physical security measures such as cameras or security guards must be high enough to monitor all students in order to prevent direct victimization at school. Additionally, the SCS provides information of school security measures, but these measures are reported by students, which may cause validity problems because students may not know about security measures in the school.

Despite the limitations of the data, this study contributes to the literature by examining the relationship between school security measures and students' risk of bullying victimization at school from a unique approach relying on routine activity and social bond perspectives. Additionally, this study contributes to the literature by dividing extracurricular activities into two categories in order to analyze students' risk of bullying victimization based on type of activity assessing target suitability within routine activity theory. Results show that physical security measures have no effect on student's risk of bullying victimization while interactionist security measures significantly reduce students' bullying victimization at school. This is an important finding for future researchers to look at why those physical security measures are not effective in reducing bullying victimization. In sum, policy makers should focus on reducing bullying victimization based on the findings from this study.

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APPENDIX A
VARIABLE DESCRIPTIONS

Dependent Variables

Bullying Victimization Measures

Direct bullying

Coding: 0) No, 1) Yes

- Threatened you with harm?
- Pushed you, shoved you, tripped you, or spit on you?
- Tried to make you do things you did not want to do, for example, give them money or other things?
- Destroyed your property on purpose?

Indirect bullying

Coding: 0) No, 1) Yes

- Made fun of you, called you names, or insulted you, in a hurtful way?
- Excluded you from activities on purpose?
- Spread rumors about you or tried to make others dislike you?

Independent Variables

Gender

Coding: 0) Female, 1) Male

Security Measures

Physical security measures

Coding: 0) No, and don't know, 1) Yes

- Security guards or assigned police officers.
- Locker checks.
- One or more security cameras to monitor the school.

Interactionist security measures

Original Coding: 1) strongly agree, 2) strongly disagree, 3) disagree, 4) strongly disagree

Recoding: 1) strongly disagree, 2) disagree, 3) agree, 4) strongly agree

- There is an adult at school who really cares about you?
- At school, you have a friend you can talk to, who cares about your feelings and what happens to you?
- Everyone knows what the school rules are?
- The school rules are fair?
- The school rules are strictly enforced?

Extracurricular Activity Involvement

Sport related activities

Coding: 0) No, 1) Yes

- Athletic teams at school?
- Spirit groups, for example, Cheerleading, Dance Team, or Pep Club?

Non- sport related activities

Coding: 0) No, 1) Yes

- Performing arts, for example, Band, Choir, Orchestra, or Drama?
- Academic clubs, for example, Debate Team, Honor Society, Spanish Club, or

Math Club?

- Student government?
- Volunteer or community service clubs sponsored by your school, for example, Peer Mediators, Ecology Club, or Recycling Club? / Volunteer or community service clubs sponsored by your school, for example, Peer Mediators, Ecology Club, Key Club, or Interact? Do not include community service hours required for graduation.
- Other school clubs or school activities.

Control Variables

Race

White

Coding: 1) White, 0) Other race (Other, Black, Asian)

Black

Coding: 1) Black, 0) Other race (Other, White, Asian)

Asian

Coding: 1) Asian, 0) Other race (Other, Black, White)

Other

Coding: 1) Other, 0) White, Black, Asian

Ethnicity

Hispanic

Coding: 1) Hispanic, 0) Non- Hispanic

School

Coding: 1) Public, 0) Private

Household income

Coding:

- 1) Less than \$5,000
- 2) \$5,000– 9,999
- 3) \$10,000–14,999
- 4) \$15,000–19,999
- 5) \$20,000–24,999
- 6) \$25,000- 29,999
- 7) \$30,000- 34,999
- 8) 35,000- 39,999
- 9) \$40,000- 49,999
- 10) \$50,000- 74,999
- 11) More than \$75,000

Age

Coding:

- 12 years old
- 13 years old
- 14 years old
- 15 years old
- 16 years old

- 17 years old
- 18 years old