

IMMIGRATION STATUS, PEER VICTIMIZATION, AND NEGATIVE EMOTIONS AS
THEY RELATE TO BULLYING BEHAVIOR AMONG SCHOOL-AGED CHILDREN

by

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ABSTRACT

Bullying encompasses aggressive behaviors in a situation where an individual experiences negative actions from one or more individuals repeatedly and over time in the forms of emotional, verbal, physical, race-based, and cyber aggressiveness. Anti-bullying research and interventions ensure healthy school climate for students as well as promote individual development and academic success. The current dissertation study investigated bullying perpetration and its association with risk factors identified by general strain theory (GST): limited financial resource, parental rejection, peer victimization, chronic disease, and negative school experience. The mediating role of negative emotions identified by GST was also tested in this study. In addition, guided by minority stress theory, this study investigated whether a student's immigration status affected the relationship between risk factors and bullying perpetration. Using the Health Behavior in School-Aged Children (HBSC) study 2009-2010 cycle, four groups of weighted least squared linear regression models were conducted to examine hypothesized relationships.

Study results indicated that bullying was associated with negative emotions, peer victimization, immigration status, being Hispanic, negative school experience, the interaction between immigration status and peer victimization, and the interaction between immigration status and negative emotions. The mediating role of negative emotions was not supported by this study. The association between negative emotions, peer victimization, and bullying perpetration varied across different immigrant status groups. It was concluded that, generalizing from this nationally representative sample, bullying among immigrant children was clearly a rich and

complex problem that merited further study. The implications for cultural-sensitive interventions in bullying behaviors, as well as the limitations of the study and directions for future research were presented.

DEDICATION

This dissertation is dedicated to my children who pleasantly distract me with their shining eyes and silly laughs. Their curiosity towards the world inspires me to make the world a better place with my contribution to the knowledge base.

LIST OF ABBREVIATIONS AND SYMBOLS

β	Beta
Coeff.	Coefficient
Df	Degrees of freedom
F	F ratio
H	Hypothesis
M	Mean
n	Number
%	Percent
p	Probability
Sig	Significance
SES	Socioeconomic status
S.E.	Standard error
S.D.	Standard deviation
<	Less than
=	Equal to
\leq	Less than or equal to
Log	Logarithmic

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CHAPTER 1 - INTRODUCTION AND RESEARCH PROBLEM

Background

Since the late 20th century, the numbers of immigrant children and children of immigrant parents have been growing rapidly and have become the most extraordinarily diverse segment of America's child population (Zong & Batalova, 2017). Scholarly attention has been mainly focused on adult immigrants, neglecting their offspring and creating a profound gap between the strategic importance of the new generation and the knowledge about their well-being (Suárez-Orozco & Suárez-Orozco, 2009). There are few interventions and community supports designed for this particular group to help with the challenges they are facing, and little is known about the effectiveness and transferability of these interventions.

These challenges confront immigrant populations during various physical and psychological developmental stages. They experience challenges in their socialization process in different social systems and in their ways to dealing with social stresses (Zhou, 1997). In addition, their orientation toward their homeland has been changing during their development. In certain stages, their homeland might become the source of negative emotions and stress (Zhou, 1997). Moreover, because immigrants have different cultural backgrounds of their origins, interventions and research need to be culturally sensitive for this group, given the fact that cultural origins may have significant impacts on every aspect of this population. Last but not the least, all of these interventions and research studies should be regionally sensitive as well, given different levels of acceptance, different cultural norms and values, and even different political will of various regions in the United States.

Justification for This Paper

Among various stressful events and conditions related to immigrant youth and children, my interest lies in bullying behaviors of immigrant children and youth. Bullying refers to a situation in which an individual experiences negative actions from one or more individuals repeatedly and over time (Olweus, 1993). In this dissertation study, I am using the term *bullying* to refer to bullying behaviors experienced by my target population as perpetrators and/or victims.

A great deal of attention in recent years has been paid to violence within schools, particularly bullying (Cook, Williams, Guerra, Kim, & Sadek, 2010; Hinduja & Patchin, 2010; Koo, Peguero, & Shekarkhar, 2012; Modecki, Minchin, Harbaugh, Guerra, & Runions, 2014). This is likely due, at least in part, to intense media coverage following a number of school shooting incidents in the United States and Europe. The research community has sought a greater understanding of bullying with the goal of preventing such tragedies (Modecki et al., 2014). These accumulating studies suggest that school bullying is both serious and widespread.

More attention is called for immigrant students with respect to bullying, who are exposed to more risk factors than native born students (Pottie, Dahal, Georgiades, Premji, & Hassan, 2015). Conflicts often arise when immigrant school children make efforts to adapt to school life in the United States (Mena, Padilla, & Maldonado, 1987). Negative treatment, including discrimination and harassment from peers, teachers, and school administrators, is a major challenge for immigrant youth and children across the United States (Cozza, 2012; Koo et al., 2012; Stacey J Lee, 2005; Stacy J Lee, 2015). In addition, immigrant children and youth are subjected to negative perceptions of low academic ability, peer rejection and isolation, and safety concerns, which can reflect the experience of immigrant youth and children in the U.S. school system (Stacey J Lee, 2005; Suarez-Orozco, Suarez-Orozco, & Todorova, 2008). However, in

the school bullying literature, despite considerable research about peer victimization in general, systematic investigations in multicultural contexts are limited, and researchers reveal inconsistent results with respect to bullying behaviors of immigrant youth. Some studies reported no differences in the prevalence of bullying between native-born and immigrant youth (Eslea & Mukhtar, 2000; McKenney, Pepler, Craig, & Connolly, 2006; Moran, Smith, Thompson, & Whitney, 1993; Verkuyten & Thijs, 2006). Some studies find native-born youth to be at a higher risk for bullying others (Graham & Juvonen, 2002; Strohmeier & Spiel, 2003) and/or being victimized (Hanish & Guerra, 2000; Strohmeier & Spiel, 2003). Also, some studies found immigrants to be at a higher risk for victimization (Bjereld, Daneback, & Petzold, 2015; S. Graham & Juvonen, 2002; Maynard, Vaughn, Salas-Wright, & Vaughn, 2016; Strohmeier, Kärnä, & Salmivalli, 2011). Limited studies found that immigrants are at higher risk for bullying others (Fandrem, Strohmeier, & Roland, 2009). More importantly, research has largely neglected the role of immigrant status and how it might impact the bullying behaviors of this group. Immigrant children and youth are particularly vulnerable to bullying because school is where immigrant youth spend most of their time after arriving in the U.S. (Esbensen & Carson, 2009; Espelage, Aragon, Birkett, & Koenig, 2008; Muschert & Peguero, 2010). In addition to serving as educational institutions, schools are also institutions to acculturate immigrant youth and children (Koo et al., 2012). In this major process of acculturation within schools, immigrant children and youth are not only exposed to mainstream American culture and acquire American values, beliefs, and behaviors but also learn their social and cultural role in the context of American society.

The significance of detrimental involvement of school bullying may impact students' attitudes toward school and possibly the whole society, result in academic failure, lower the self-

esteem of immigrant children, confuse their self-positioning in the society, and form lifelong consequences; thus, further marginalizing this already vulnerable population (Esbensen & Carson, 2009; Muschert & Peguero, 2010) . Therefore, understanding and addressing bullying in schools is essential for establishing a safe and healthy learning environment for all youth (Esbensen & Carson, 2009; Muschert & Peguero, 2010). Understanding the bullying experience of immigrant school children can help break the chain of bullying involvement, unlocking the full potential of immigrant students. If we fail to do this, the vulnerability of this population, with respect to being bullying perpetrators and victims, might be reinforced and passed down through generations resulting in continued and/or increased rates of bullying as victims and perpetrators for this population. Thus, the loss to society will be incalculable.

Purpose Statement

Via this dissertation study, I sought to fully delineate the role of immigration in complex relationships among stressful events and conditions and bullying. The goals of the study were to: 1) increase knowledge of the relationships between stressful events and conditions, including peer victimization and bullying perpetration, and 2) evaluate immigration status's moderating role on this relationship, yielding policy and practice implications that can potentially reduce the vulnerability of immigrants.

This study examined if and how stressful events and conditions were linked to bullying; especially, this study looked into the group of perpetrator/victim, examining how the peer victimization experience can result in bullying perpetration. This study also addressed whether immigration status moderated the association between bullying perpetration and stressful events and conditions. The aims were addressed through a secondary data analysis of the 2009-2010 Health Behavior in School-Aged Children (HBSC), including U.S. born and non-U.S. born

school children, to investigate whether stressful events and conditions affected bullying behaviors, how they did so, and if this relationship differed by immigration status. The HSBC was suited for this study, because it contained a nationally representative sample and has been utilized substantially by bullying researchers. In addition, measures related to bullying perpetration and victimization were derived prominently from the social work, counseling, and school psychology literature and demonstrated that they were psychometrically sound with good reliability and validity.

Significance of the Study to Research

A significant amount of literature focuses on bullying. Additionally, the literature on bullying among minorities is growing. Immigrants are often classified as minorities, although there is less research focused on immigrants. Gibson and Ogbu (1991) divided minorities into immigrant minorities and involuntary minorities. Immigrant minorities voluntarily migrate to the U.S., while involuntary minorities involuntarily join the U.S. through slavery, conquest, or colonization. As a result, on one hand, immigrants hold some characteristics that are different from minorities. Classifying immigrants as minorities might lose the opportunity to look into their unique characteristics. On the other hand, some immigrants who are not ethnic minorities are still treated as a subgroup of minorities.

Many of the existing studies do not examine the factors leading to bullying. Consequently, the bullying experiences of immigrants (e.g., their roles with respect to peer victimization and perpetration) and the factors involving them in bullying are not specifically studied. Without acknowledging the unique identity and characteristics of immigrants, it is impossible to understand the mechanics of their bullying behaviors and develop culturally sensitive anti-bullying programs for this already vulnerable population. Thus, the identification

and understanding of the processes and mechanisms that lead children and adolescents to perpetrate bullying holds importance in preventing bullying incidents.

This dissertation study contributed to the knowledge base in a number of ways. First, this study addressed factors and conditions that relate to bullying among immigrant youth through a nationally representative data set. This provided generalizable findings and information to represent U.S. children and youth in an effort to understand the reasons why school children engage in bullying behaviors. Secondly, this study can provide an in-depth picture of how immigration status relates to the mechanics of bullying behaviors, attracting the attention of the research community to the benefits and well-being of immigrants.

Significance of the Study to Social Work Practice

A bullying-free environment is essential for children's healthy development and learning, which is the goal of every parent, educator, and school social worker alike. Therefore, bullying is a problem that is relevant to the social work profession. By identifying risk factors leading to bullying and its underlying mechanisms, this study can guide social workers' practice to effectively prevent bullying. Social workers can work with other helping professions to address risk factors examined in this study and prevent bullying. Social-context related variables examined in this dissertation study can provide guidance to various forms of service(e.g. family therapy, anger management training) to prevent bullying by different means.

Additionally, this dissertation study contributes to social work practice by bringing attention to the role of immigration status in bullying behaviors. The cultural background and the acculturation process differentiate immigrants from U.S. citizens, making their bullying experience unique. Therefore, the helping profession, including social workers, should pay special attention to this group when dealing with bullying behaviors.

Significance of the Study to Policy

There is sufficient research about the effectiveness of public policy interventions for protecting children and youth. Increasing attention is being paid to racial and ethnic minority groups in multiple policies. However, there is no anti-bullying policy specifically designed for immigrant students, as victims or perpetrators. Yet, certain federal civil rights laws can be relevant for immigrant students when they are involved in bullying as victims. Due to the immigrant nature of this population, we can use laws that protect school children from some harassment based on their race and national origin to reduce the stresses they are experiencing. Schools are obligated by certain civil rights laws to take actions when some behaviors are overlapped with discriminatory harassment, which is defined as "severe, pervasive, and persistent conduct -- based on an individual's race, color, national origin, sex, disability, religion, age, disability, and/or sexual orientation -- that creates a hostile environment ".(Department of State, 2008). Federal civil rights laws enforced by the U.S. Department of Education and the Department of Justice include: Title IV of the Civil Rights Act of 1964 (can be used to deal with religion-based harassment, also can apply to discrimination related race, color, and sex); Title VI of the Civil Rights Act of 1964 (sex-based harassment); Title IX of the Education Amendments of 1972 (sex-based harassment); Section 504 of the Rehabilitation Act of 1973 and Titles II and III of the Americans with Disabilities Act; and Individuals with Disabilities Education Act (disability-based harassment).

Additionally, this dissertation study contributes to social work policy by bringing attention to the role of social support in bullying behaviors. Accumulating research indicates that bullying is moving beyond the interaction between the perpetrator and victim and is posited within larger systems including peers, families, and schools (Craig, Pepler, & Atlas, 2000;

Salmivalli, 1999). Therefore, bullying becomes a complex social dynamic involving a variety of levels, including the individual, family, school, and policy. Farrington and Ttofi (2009) identified that the involvement of parents is a feature possessed by effective bullying prevention programs. However, parental support in bullying education and prevention programs are not covered in many anti-bullying policies. This dissertation study looked into the effect of social support on bullying and how it differs across immigrant/U.S.-born groups. The lack of parental support and parental education might diminish the effectiveness of anti-bullying interventions.

Definitions of Key Terminology

In order to understand the risk factors leading to bullying behaviors, it is necessary to build the vocabulary used to discuss and describe this population and related issues.

Definition of *bullying*.

There is no universal agreement on the definition of bullying (Monks & Smith, 2006), but there is some degree of consensus that bullying is regarded as a specific form of aggressive behavior, and it refers to a situation where an individual experiences negative actions from one or more individuals repeatedly and over time (Olweus, 1993). These negative aggressive actions take place as a result of an imbalance of power existing between the victim and the perpetrator when the victims have difficulties defending themselves (Farrington, 1993; Olweus, 1993; Rigby, 2002; Smith & Sharp, 1994). In this dissertation study, I am using the terminology *bullying* to refer to bullying behaviors perpetrated by and the victimization of the study's target population. Multiple aggressive behaviors fall into the category of bullying, such as physical attacks, including: hitting, pushing, and kicking; verbal harassment (e.g. name-calling, provoking, spreading rumors, and making threats); and other behaviors, such as making faces and social exclusion (Fekkes, Pijpers, & Verloove-Vanhorick, 2005). Basically, bullying can be

roughly divided into four types: emotional/relational, verbal, physical, and cyber (Brank, Hoetger, & Hazen, 2012). Cyberbullying is a form of bullying that in recent years has received much attention. Cyberbullying is defined as an aggressive and intentional behavior carried out using electronic forms of contact repeatedly and over time by a group or individual against a victim who cannot defend himself or herself (Smith, Mahdavi, Carvalho, & Tippett, 2006).

Definition of peer victimization.

Another term that is related to bullying is *peer victimization*. *Peer victimization* refers to the abuse of victims by perpetrators in the forms of emotionally, verbally, physically, racist, and cyber (Graham & Bellmore, 2007; Olweus, 1993). It is usually used interchangeably with *bullying victimization* (Graham & Bellmore, 2007).

Definitions of bullying participant roles.

Bullies refer to individuals who reported as perpetrators in bullying incidents; *victims* are individuals who reported victimization in bullying incidents; *bully/victims* or *victim/perpetrators* are individuals who reported to be both perpetrators as well as victims of bullying perpetrated victimized (Olweus, 1993).

Definition of immigrant.

The term *immigrants* (also known as *foreign born*) refers to people residing in the United States who were not U.S. citizens at birth. This population includes naturalized citizens, lawful permanent residents (LPRs), certain legal non-immigrants (e.g., individuals on student or work visas), those admitted under refugee or asylee status, and persons illegally residing in the United States.

CHAPTER 2 - LITERATURE REVIEW

Current State of Bullying in the United States

Even though issues related to bullying have received attention in recent decades, there is still inconsistent evidence related to its prevalence rate. Prevalence rates of peer victimization in Europe and Australia are roughly similar across studies, generally ranging from 7-22% (Modecki et al., 2014; Zapf, Escartín, Einarsen, Hoel, & Vartia, 2011). Reported prevalence rates from the United States vary across studies, depending upon methodology and definition of *bullying* used. The first large-scale study of bullying in the United States was published by Nansel, et al. (2000). By surveying more than 15,000 school children in grades 6-10, they found the prevalence of bullying involvement among American teens and preteens was approximately 30%.

Researchers conducted analysis of data from a representative sample of 15,686 students in grades 6-10 in public and private schools throughout the United States who completed the World Health Organization's Health Behavior in School-Aged Children survey. They found that a total of 29.9% of the sample reported moderate or frequent involvement in bullying as a bully perpetrator (13%), as a victim (10.6%), or both (6.3%) (Nansel et al., 2001). In a more recent study, which is part of a population-based survey on 6,379 children, researchers found that one-third of the children were involved in bullying, most of them as bullies (17%) or bully-victims (13%) and less as pure victims (4%) (Jansen et al., 2012).

Researchers reported a victimization rate of 15-20% of all U.S. students and stated they experience some forms of bullying under the broad definition during their school years (Batsche

& Knoff, 1994). Another study indicated a prevalence of 8-46% for regularly bullied children, with 5-30% of students as regularly and actively bullied victims (Nansel et al., 2001; Olweus, 1991). *Regular bullying* is hereby narrowly defined as recurrent behavior with a frequency of *several times a month, sometimes, or on a weekly basis*. All of the data above is based on students' self-report, reflected by questionnaires they answered.

Researchers identified some characteristics that distinguish perpetrators and victims from their peers. Findings of earlier studies generally agree that bullying victims are prone to be socially non-assertive (Patterson, Littman, & Bricker, 1967). In addition, bullying victims tend to cry easily (Patterson et al., 1967; Perry, Williard, & Perry, 1990; Pierce, 1990), withdraw from social interactions (Pierce, 1990), are often physically weak, and have low self-esteem (Olweus, 1991; Perry et al., 1990; Schwartz, Dodge, & Coie, 1993). There is evidence of strong linkages between submissive social behavior and peer victimization (Schwartz et al., 1993). Moreover, body image (e.g. body mass index) is associated with the likelihood of being victimized (Schwartz et al., 1993). The victimized children and youth perpetuate their roles by rewarding the perpetrators through both tangible resources, such as money, and intangible resources, such as signs of fear and distress (Schwartz et al., 1993).

Perpetrators are characterized by an aggressive personality, having fairly weak control against aggression and violence (Olweus, 1980). They are noncompliant with authority figures (Dodge, 1983; Pellegrini & Smith, 1998), process social information and environmental cues differently (Crick & Dodge, 1994), generate more hostile reactions towards neutral stimuli (Crick & Dodge, 1994), and are in favor of adopting physically assertive behaviors to gain dominance over weak peers (Pellegrini & Smith, 1998).

Compared to research about victims and perpetrators, there are less studies investigating the concurrent and long-term problems of victim/perpetrators of bullying (Moore et al., 2014). *Bully/victims* are a subgroup of victims who use aggressive bullying perpetration to avoid the stigma of being bullying victims and to protect themselves from future victimization (Moore et al., 2014). Bully/victims demonstrate the detrimental effects of both bullies and victims (Ivarsson, Broberg, Arvidsson, & Gillberg, 2005). This group reported the highest level of psychiatric problems (Kumpulainen & Räsänen, 2000), and they reported the worst psychosocial functions when compared with bullies and victims (Veenstra et al., 2005).

Some research has found that bullying roles remain relatively stable across time. Relying on 48 participants sampled from 516 middle school students, Espelage, Bosworth, and Simon (2000) found the continuity of the bullying experience: individuals who perpetrate bullying and who are victims continued their status across multiple years. Even though this conclusion is reached from a small sample of 516 middle school students (grades 6-8) in one middle school, it has been replicated with other settings and populations to support its generalization (Scholte, Engels, Overbeek, De Kemp, & Haselager, 2007).

Not only is bullying's pervasiveness cause for concern, its detrimental effects also exacerbate peer victimization as a severe social problem (Qin, Way, & Rana, 2008). Previous research findings show a significant relationship between peer victimization and multiple health complaints (Fekkes, Pijpers, Fredriks, Vogels, & Verloove-Vanhorick, 2006). Research investigating the consequence of bullying has revealed that children who are bullied suffer more often than their peers from negative health symptoms such as sleeping problems, headache, stomach ache, bedwetting, and depression (Forero, McLellan, Rissel, & Bauman, 1999). They have worse psychological well-being than their peers who are not bullying victims. They

experience higher levels of depression (Kumpulainen & Räsänen, 2000; Rigby & Slee, 1993) and anxiety (Olweus, 1978; Slee, 1994), lower self-esteem (Boulton & Smith, 1994), and report feelings of loneliness (Boulton & Underwood, 1992). Behaviorally, they report more occurrence of suicidal thoughts (Kaltiala-Heino, Rimpelä, Marttunen, Rimpelä, & Rantanen, 1999), more school absenteeism (Reid, 1983), and relationship problems in later stages of life (Gilmartin, 1987).

There are also adverse impacts on bullying perpetrators. Those who bully others are more likely to come from homes with negative family dynamics. In these homes, family members usually adopt aggression to solve problems and lack communication and warmth (Glover, Gough, Johnson, & Cartwright, 2000). Growing in these families, perpetrators are more likely to engage in violent and other risky behaviors in their adulthood. They tend to suffer from substance abuse problems, engage in early sexual activity, have criminal convictions, and be abusive to family members including spouses and children in their adulthood (MacKenzie et al., 2014). Based on in-depth interviews, Pyke (2000) found that immigrant children described their parents, Asian parents in particular, as overly strict, emotionally distant, lacking in communication, and deficient. Therefore, the family dynamics put immigrant school children at high risk of bullying perpetration. Prevention of bullying is therefore an important goal for health, social work, and education professionals.

Despite considerable research about bullying, in general, there is not a rich literature that examines bullying behaviors perpetrated by and the victimization of the immigrant children and youth. Not every individual is at equal risk of bullying perpetration and peer victimization. On one hand, several studies indicate that immigrant students have a higher risk level for bullying perpetration than those without immigration status (Fandrem et al., 2009; S. Graham & Juvonen,

2002). On the other hand, multiple research studies indicate that immigrant children report higher levels of peer victimization than their peers, among whom children and adolescents migrated from China are more often targets of bullying (Kohatsu et al., 2000). More specifically, researchers reported that 98% of Asian-American college students have been targets of aggressive behaviors (Alvarez, Juang, & Liang, 2006).

Impacts of Socio-Cultural Contexts on Bullying

Experiences with bullying among immigrant students differ from U.S.-born students because of their home country, cultural background, and their unique acculturation process. Cultural factors may also put immigrant students at greater risk for becoming both perpetrators and victims, making their role in peer victimization unique and different. Even though there has not been much research explaining the mechanics of how immigrant students become perpetrators of bullying, there are some possible reasons. The first possible reason lies in the various cultural definitions of bullying. Individuals might hold different understandings of bullying and define this behavior differently based on their cultural background. This leads to a situation of some individuals defining a behavior as bullying while others will not categorize it as bullying. Behaviors that are normal in the culture of immigrants' home country might be interpreted as inappropriate and even considered as bullying in the U.S. culture. For instance, people's reactions towards weight-related name calling can differ in different cultures. In Chinese culture, calling overweight people fat sometimes can be a way of expressing affection, especially when it is used towards children; however, in American culture, it is considered as an aggressive behavior. This topic of culturally-appropriate definition of bullying is in need of further study and clarification.

Secondly, students who are deviating in appearance or other ways are more likely to be

involved in bullying (Bjereld et al., 2015). Immigrant school children are usually perceived as being different from their peers in appearance, language, diet habit, and other behaviors, especially when they are not well acculturated yet (Bjereld et al., 2015).

The third reason potentially lies in the acculturation process that immigrant students need to go through but may contribute to their vulnerability in bullying. Being unfamiliar with the mainstream society's culture and norms might impact this immigration group and put them at high risk of becoming attackers. Previous research shows that perpetrators tend to process social and environmental information differently (Crick & Dodge, 1994; Dodge, 1983). Immigrants might have limited knowledge about the host culture, so they are more likely to have a different understanding of social information. In certain situations, immigrants might misinterpret the social information delivered by their peers and take aggressive actions, including bullying, to protect their authority and self-esteem. This is also the reason why immigrant students are more likely to get involved in bullying (Fandrem et al., 2009). In addition, being unfamiliar to the school system might indicate that immigrant students are not familiar with the administration rules of when teachers will be present and take record of so-called bullying behaviors. Being easily caught due to their unfamiliarity to the school system might result in reported bullying perpetration. Therefore, the acculturation process experienced by immigrants can potentially put them at risk of becoming bullying perpetrators.

The contribution of age has been widely studied. A wealth of research has documented age changes in the rates of bullying or victimization. It is well documented that changes occur in bullying/victim as a function of age (Olweus, 1993; Smith, Madsen & Moody, 1999; Solberf & Olweus, 2003). Researchers conducted a study using existing data from a nationally representative dataset. They found that the frequency of bullying was higher among 6th- through

8th-grade students than among 9th- and 10th-grade students (Nansel et al.). These might be due to actual experiential changes among different age groups, but the changing definitions of bullying provided by research participants who respond to interviews or questionnaires could be another part of the reason (Monks & Smith, 2006). The cognitive developmental changes of individuals result in changing understanding and definitions of bullying (Monks & Smith, 2006; Sentse, Kretschmer, & Salmivalli, 2015). As children mature, they develop physically and cognitively. As a consequence, they might have a changing understanding of bullying depending on their age. At young age, students might regard some behaviors as bullying. However, their cognitive development might lead to different age-appropriate definition of bullying, omitting and adding behaviors in the range of their definition.

Evidence suggests that males are more likely than females to be both perpetrators and targets of bullying (Nansel et al., 2001). However, research on bullying also reveals that females are more likely to experience indirect forms of bullying, such as teasing.

Accumulating research indicates socioeconomic inequality in exposure to bullying, leaving economically disadvantaged children at higher risk of peer victimization. Due and his colleagues (2009) documented the contribution of the family socioeconomic status and the macroeconomic environment. They found that low socioeconomic status is associated with higher prevalence of victimization. Adolescents who attend schools with wide disparities in affluence are at higher risk of being bullied (Due et al., 2009). At the same time, national disparities in affluence make students vulnerable to bullying behaviors (Due et al., 2009). This point of view has been advanced in details by a more recent study. Researchers found that individuals from families with low family socioeconomic status and poor school neighborhood

SES reported higher prevalence of bullying. Socioeconomically disadvantaged children have a particularly high risk of involvement in bullying (Jansen et al., 2012).

Framework and Theory

Immigrant students are at risk of bullying experiences within schools and communities. A number of theories are useful in explaining the bullying experiences of these children and youth as they take on a variety of disparate roles in bullying experiences. With an eye towards explaining the causes of bullying, general strain theory and minority stress theory will be explored and discussed.

General strain theory.

In current dissertation study, *general strain theory* is used to explain the mechanics of how risky and stressful factors result in bullying perpetration. This theory also provides insights into how peer victimization can invoke bullying victims to become bullying perpetrators.

Strain theories evolved over the past decades into one of most sophisticated and complicated criminological theories. In recent years, however, a wealth of research in several fields has questioned certain assumptions underlying those theories and pointed to new directions for the development of strain theory. Robert Agnew played an important role in making the contemporary version of strain theory that is capable of overcoming the criticisms of previous strain theories. In brief, Agnew's General Strain Theory (GST) examines how strains can pressure individuals into committing acts of deviance. In particular, GST provides insights to understand the process of how strains (and stress) increase the likelihood of negative emotions (e.g., anger and frustration), and perpetuate crime as a means of coping with these emotions.

GST has provided theoretical explanations about the role of negative emotions. GST argues that strains and stressors result in and increase crime through their effect on negative emotions. GST posits that when exposure to strain gives rise to negative emotions, delinquent responses increase. Negative emotions, according to GST, is a critical component in the processes leading to crime and delinquency, because negative emotions increase the feeling of being hurt and generate the need for adaptive responses and coping strategies including delinquency and crime (Agnew, 1992, p. 60). For instance, parental rejection is a factor that is identified by Agnew as a strain that is more likely to result in crime. When individuals experience parental rejection, they may feel angry, upset, and frustrated. All of these negative feelings make the individuals feel bad and turn to things that can comfort them; crime is one of the ways to cope. Therefore, working through negative emotions, strains lead to crime.

Immigrants have limited resources when compared with U.S. born individuals. When immigrants experience negative emotions, they might not have resources to assist the emotional coping process. For instance, their close friends might be in their home countries and unable to listen and buffer their negative emotions. Perhaps there were some activities the immigrant children enjoyed attending in their home countries which might be able to distract their attention and thus help to cope. However, because they are in a different country, this resource is no longer available.

In addition, Agnew expanded the scope of strains. In earlier versions of strain theory, criminologists defined strain theory largely as the inability to achieve their financial or status goals; Agnew defined strain as “relationships in which others are not treating the individual as he or she would like to be treated” (Agnew, 2006, p. 4). Agnew has attempted to conceive strains in a wider range. GST suggests that there are three primary forms of strains that lead to crime. The

first is the failure to achieve positively valued goals, which is in line with traditional strain theories. The second strain is the removal of a positively valued stimulus, such as when individuals lose something that is valuable to them (e.g., loss of property, loss of a relative, loss of a romantic partner). The third form of strain is the presentation of a negative stimulus. Undesirable school experiences, such as bullying or rejection by peers, represent negative stimuli. Any of these forms of strain potentially produce negative emotions that may be linked to criminal offenses and juvenile delinquency.

The specification of these new categories of strain is the greatest strength of GST; however, at the same time, this strength is also GST's greatest weakness. GST has identified broad resources of strains, which have been widely employed in multiple studies (Agnew, Cullen, Burton Jr, Evans, & Dunaway, 1996). However, there is little guidance provided by GST for researchers to decide which type of strains to be used in their studies (Agnew, 2001). In an effort to fully explain the relationship between strain variables and criminal /delinquent behaviors, Agnew has made further efforts to identify what types of strains are more likely to result in criminal/delinquent behaviors than other types of strains and the characteristics of these types of strains (Agnew, 2001). Agnew began this work by making more precise definitions of strains. He defined strains as *objective strains* and *subjective strains*.

Objective strains refer to "event or conditions that are disliked by most members of a given group" (Agnew, 2001). Many events and conditions are disliked by majority group members, for instance, earthquake and transmissible disease. When measuring objective strains, it is important to consider group characteristics and how these group differences could lead to different reactions to the same objective strains (Agnew, 2001). For instance, females might have a different perspective from males towards the same strains (e.g., chronic disease of a child).

Subjective strains are events or conditions that are disliked by individuals who are experiencing them. Different individuals might have different reactions to the same stressful event, such as the death of a parent (Agnew, 2001). Individuals who have positive and close relationships with the parent might view this as a great source strain and might turn to delinquency as a means of coping. However, for individuals who have had a negative relationship with the parent (e.g., severely abused by the parent), the death of the parent might be a relief for them rather than a strain. Therefore, it is important to examine subjective strains and their subjective meanings for individuals in order to better evaluate its impact on delinquency and deviancy.

Agnew (2001) has identified several factors to distinguish strains that are more likely to result in crime and delinquency from strains that are less likely to result in crime and delinquency. These characteristics of strains: 1) are seen as unjust, 2) are seen as high in magnitude, 3) are associated with low social control, and 4) create some pressure or incentive to engage in criminal coping. Drawing on these characteristics, several types of strains that have a greater likelihood of leading to crime and delinquency are identified.

The first of these strains is the failure to achieve core goals that are not the result of conventional socialization and that are easily achieved through crime (Agnew, 2001). These goals include money, because accumulating research reveals that crime is frequently used to acquire money (Cernkovich, Giordano, & Rudolph, 2000), thrills and excitement, as well as high levels of autonomy or masculine status.

The second type of strain that is more likely to result in delinquency is *parental rejection* (Agnew, 2001). Research indicates that social support plays a protective role among adolescents (Holt & Espelage, 2007; Lawson, Alameda-Lawson, Downer, & Anderson, 2013). Social

support can be utilized as a coping mechanism to buffer bullying (Holt & Espelage, 2007). Agnew (2001) identified parental rejection as a form of low social support. Parental rejection reflects the state of parents inability or unwillingness to demonstrate love and interest to their children, provide little support, and maintain a closed attitude (Agnew, 2001). Parental rejection is more likely to lead to crime, because it severely impacts the goals, values, needs, and activities of the children (Agnew, 2001, 2006; Agnew et al., 1996). It is unjust in nature due to societal expectations that parents have a loving and nourishing relationship with their children. Empirical research has supported the strong link between parental rejection and delinquency (Johnson, Giordano, Manning, & Longmore, 2011).

Negative school experiences, including poor school performance, negative interactions with teachers, and the perspective that school is boring, is the third type of strain. Children and adolescents spend most of their time at school, making school an essential part of their life. Therefore, the negative school experience is highly influential (Agnew, 2001).

Abusive peer relationships, especially for youth, is a type of strain. Research has demonstrated that abusive peer relationships, including those consistent with bullying, have a dramatic negative impact on victims (Cross, Lester, & Barnes, 2015). This is also an important social justice issue. Experiences with prejudice and discrimination based on ascribed characteristics, including race/ethnicity, can reduce social control and perpetuate social injustice (Agnew, 2001). The experience of peer victimization might push the individuals to become victims who also perpetrate bullying (bully/victims), who might use bullying perpetration to avoid “losing face” and future victimization (Moore et al., 2014).

Empirical research has tested GST and supported its statement that exposing to different forms of strains are likely to pressure an individual to engage in delinquent behaviors as a way to

correct and cope (Agnew, 2013; Eitle & Eitle, 2016; Thaxton & Agnew, 2017; Zweig, Yahner, Visher, & Lattimore, 2015). Consistent with the prediction of GST, several studies have found that to some extent, negative emotions, especially anger, mediate the connection of strain and delinquency (Botchkovar & Broidy, 2013; Francis, 2014; Moon & Morash, 2017).

Bullying and delinquency.

There are commonalities and differences between delinquency and bullying. It is hard to draw a line between physical aggressive bullying and delinquent behaviors (Moon, Hwang, & McCluskey, 2011). However, bullying differs from delinquency in several aspects. Bullying can happen in the forms of isolation or rumors, which do not fall into the category of delinquency but can have dramatic effects on the victims as well. Another difference is that bullying happens among peers, based on the definition most widely used in the research community (Olweus, 1993). However, delinquency can be perpetrated by any individual against any other individual outside or within their peer group. With the similarities and differences in consideration, it is necessary to test GST and examine its effect to explain bullying behaviors.

Bullying and GST.

Theoretically, GST can predict and explain why individuals choose to bully others when they experience stressful events and conditions. Agnew (2001) stated that strains are events and conditions disliked by an individual or a group. Experiencing strains can generate negative emotions, such as anger, frustration, depression, or anxiety. In order to cope with these negative emotions, individuals might choose crime and delinquency to make themselves feel better. In terms of strained children and adolescents, bullying others seem to be a highly possible way to adapt (Moon et al., 2011). Bullying involves a power imbalance among the perpetrator and the victim (Olweus, 1993), and bullying provides the perpetrator a sense of power and superiority

they cannot otherwise obtain (Olweus, 1993; Rigby & Slee, 1993). Therefore, it is reasonable to hypothesize that strained youth who wish to ameliorate certain negative feelings might engage in this behavior to improve the way they feel about themselves.

The applicability of elements of GST to the bullying phenomenon is tested and demonstrated by several empirical studies. For example, researchers revealed that the experience of childhood physical and emotional abuse are significantly related to bullying (Browne & Falshaw, 1996). Other studies found that bullies were more likely to suffer physical punishment, maltreatment, and rejection by parents, peers, and teachers (Duncan, 2011; Kokkinos, 2013; Mohapatra et al., 2010). There are several studies demonstrated anger has impact on bullying (Hein, Koka, & Hagger, 2015; Rieffe, Camodeca, Pouw, Lange, & Stockmann, 2012; Sigfusdottir, Gudjonsson, & Sigurdsson, 2010). Overall, these findings are consistent when considering GST as an explanation, because they indicate that individuals who experienced different forms of strains and negative emotions are more likely to engage in bullying.

Minority stress theory.

Gibson and Ogbu (1991) divided minorities in the United States into two types: immigrant minorities and involuntary minorities. Immigrant minorities refer to those who migrate to the United States while involuntary minorities are those who were forced to join the American society through slavery, conquest, or colonization (Gibson & Ogbu, 1991). Therefore, even though there are immigrants who are not ethnic minorities, immigrants are usually treated as a subgroup of minorities. Minority Stress Theory (MST) to providestress theory provides a theoretical base for looking into the difference between immigrants and U.S. born students with respect to bullying.

Immigrants and U.S. born children might differ in many ways, making these two groups unique. Therefore, it is important to attract the attention of the scholarly community to immigrant children and youth, analyzing how the immigration status impacts them. Since immigrants are usually categorized as minorities, MST minority stress theory will be used to guide the inclusion of immigrants in this dissertation study. MST stress theory is an important theory that helps to explain how stress confronts minorities. This theory suggests that being a minority is inherently stressful (Bowleg, Craig, & Burkholder, 2004; Meyer, 1995) and this stressful status might strain individuals psychologically and lead to negative health outcome (Hatzenbuehler, 2009). S. Lee et al. (2009) identified several common sources of stress that affect minorities: pressure to meet high parental expectation; pressure from the racial and minority stereotype; challenges of balancing two cultures; family obligation based on strong family values; and discrimination or isolation due to racial or cultural background.

In addition to the stressors that confront minorities, how minorities deal with stressors might increase their vulnerability as well. Due to their cultural background and values that differ from the mainstream society, minorities might view the same objective strains in different subjective perspectives. Therefore, the same strains might have different effects on immigrants from U.S. citizens. Minority stress theory helps explain why minorities experience high levels of stress and how stress results differ for minorities, implicating that helping professionals like social workers and health experts should advocate to reduce the stress and oppression this group faces, look into their unique coping methods of stress, and promote the overall wellness for this group. Minority stress theory helps to explain the stress an immigrant adolescent is experiencing, and general strain theory explains how these stressors are transferred into negative behaviors. Minority stress theory complements general strain theory by suggesting that

immigrants do not inherently perpetrate others, but the external environment in which the new generation lives, in addition to their unique processing mechanisms, causes stressful reactions that might result in bullying behaviors.

This Study's Conceptual Framework

The combination of GST and minority stress theory guided this dissertation study. GST guided the association of strains and bullying perpetration as well as the mediating role of negative emotions. Minority stress theory guided the inclusion of immigration status as a moderator to test the difference between immigrants and native students.

Accumulating studies have tested the GST, indicating the relationship between strains and multiple forms of deviant and delinquent behaviors. Many studies have examined peer victimization as a form of strain, which is supported by Agnew (2007) as a form of strain more likely to lead to delinquency due to its characteristics. However, few researchers have specifically investigated bullying as the outcome of strains. Therefore, further study is warranted to ascertain whether strains can result in bullying perpetration, a special type of deviant behavior that is rarely examined under the guideline of GST. This study will seek to investigate the aforementioned link.

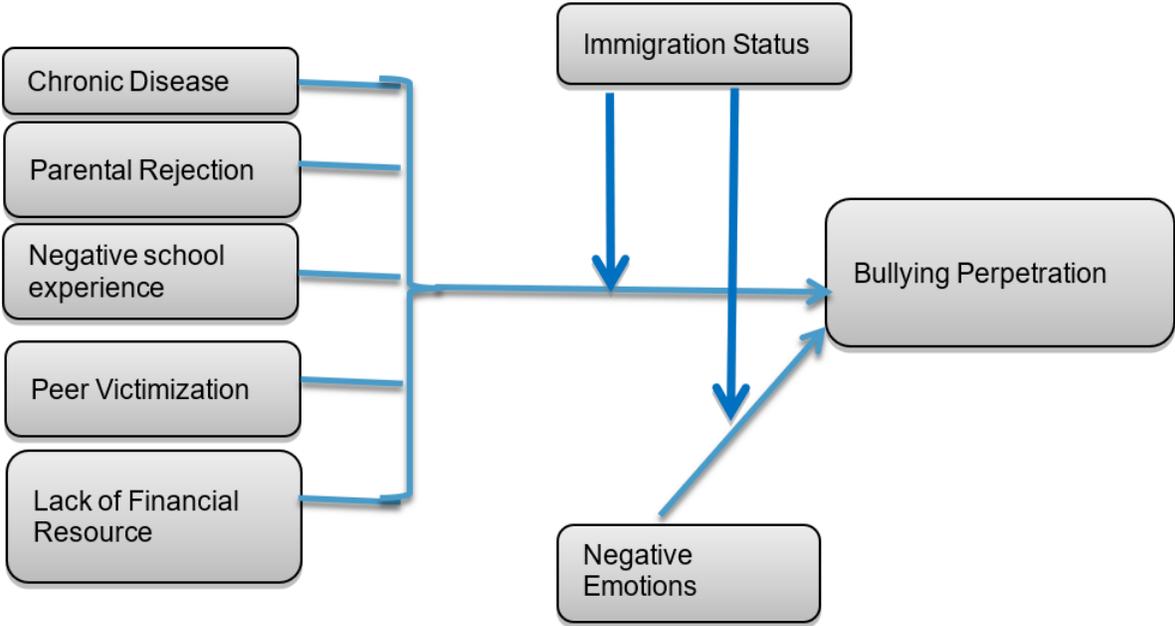
The mediating role of negative emotions has been stated in GST and supported by empirical studies. However, when the deviant behavior becomes bullying perpetration, whether or not the negative emotions would play a mediating role has not been studied. This dissertation study will look into this relationship as well.

Furthermore, whether this missing link may differ by immigration status is unknown. For example, immigration students might demonstrate more bullying perpetration than U.S. citizens,

because they are more vulnerable to strains. This study will investigate this relationship.

Relationships are illustrated below (See Figure 1).

Figure 1. Relationships Tested in the Study



CHAPTER 3 - METHODOLOGY

Research Questions and Hypotheses

This study examines the relationship between different stressful events and conditions and bullying perpetration and the role of immigration status in this relationship. Understanding these relationships would open avenues for interventions to reduce adverse behaviors in students.

Research questions.

General strain theory provides a clear and testable explanation for bullying perpetration. Stressful social dynamics should increase an individual's feelings of negative emotionality, which, in turn, should increase the likelihood of committing or contemplating an act of bullying perpetration. Guided by GST, the dissertation study seeks to answer the following questions.

1. Is experiencing parental rejection associated with the frequency of bullying perpetration?
2. Is experiencing peer victimization associated with the frequency of bullying perpetration?
3. Is chronic disease associated with the frequency of bullying perpetration?
4. Are negative experiences in school associated with the frequency of bullying perpetration?
5. Is financial stress associated with the frequency of bullying perpetration?
6. Is the relationship between strains and bullying perpetration mediated by negative emotions?

7. Do the effects of strains and negative emotions on bullying perpetration differ based on immigration status?

Hypotheses.

Based on the strains identified by GST, the dissertation study tested the impact of several strains on one type of deviant behavior: bullying perpetration. First, this study hypothesized that experiencing parental rejection should be significantly and positively associated with bullying perpetration (H₁). The second form of strain is victimization, which leads to the second hypothesis: victimization is a risk factor for bullying perpetration (H₂). The third hypothesis is that chronic disease should be significantly and positively associated with bullying perpetration (H₃). The fourth hypothesis is that negative school experience is positively associated with bullying perpetration (H₄). The fifth hypothesis is that financial stress is positively associated with bullying perpetration (H₅). In testing these hypotheses, the HBSC 2009-2010 data allows me to examine the implications not only of traditional notions of bullying (physical and verbal bullying), but also cyber bullying, which has recently received significant attention (Hinduja & Patchin, 2010). It has rising prevalence (Hinduja & Patchin, 2010), but little is known about its consequence and how it impacts behaviors (Hay & Meldrum, 2010). In addition, based on the fact adolescents carry their phones at all time and have easy access to the internet, the vulnerability of adolescents to cyber bullying is high (Hay & Meldrum, 2010). Therefore, including cyber bullying in the hypothesis is significant in its practical implication.

The present study further hypothesized that negative emotions mediate the effects strains have on bullying perpetration (H₆). GST states that strains generate negative emotions which provide motivations for delinquent behaviors to cope because these negative emotions pressure and force into corrective behaviors (Agnew, 2006). Drawing from GST, I hypothesize that

negative emotional experiences of individuals who experience strains mediated the relationship between strains and bullying perpetration. The negative emotional experience includes anxiety, depression, sadness, and irritability. Accounting for these negative emotions should help explain any previously observed association between experiencing strains and engaging in bullying.

Another core hypothesis involves the immigration status. Guided by the minority stress theory (Agnew, 2006), I hypothesized that immigration status moderated the effects of strains and negative emotions on bullying perpetration (H7). Because the cultural background and values of immigrants differ from American children, they often differ in their subjective evaluation of the same objective strains. Therefore, immigrant children demonstrate different responses to strains, including deviant behaviors, to same objective strains (Agnew, 2001). Therefore, the relationships between strains and bullying perpetration should differ for immigrants and U.S. students. In addition, because of the limited resources compared to native-born individuals, immigrants might be more likely to engage in bullying perpetration as a coping strategy, because there are not enough alternative coping strategies. Therefore, I hypothesized that I would find differences among immigrants and U.S. students in negative emotions' relationship with bullying perpetration based on the differences in coping resources when encountering negative emotions and the differing cultural perspectives of bullying as legal and appropriate. I expected negative emotions to have a stronger relationship with bullying for immigrants. In the present study, age, grade, gender, race, and family socioeconomic status were employed as control variables. The literature has well documented the role of these variables on bullying perpetrations.

Advantages of this study.

I anticipate this study to prove significant in two ways. First, I include social-status and demographic factors as I examine the relationship between strains and bullying perpetration for the two different immigrant status groups. The controlled factors (gender, age, race, BMI, family SES, grade) are each linked in the literature to strains and particular levels of bullying/victim. I incorporate these factors in the models. I expect these factors to provide at least some clarification of immigration status' role in the strain–bullying perpetration relationship, yielding policy and practice implications with potential to reduce vulnerability of immigrants.

Another significant contribution from this dissertation study is its inclusion of cyberbullying as a form of bullying. Cyber bullying is a form of bullying that has been more apparent due to the increasing use of electronic devices (Boulton & Smith, 1994). There is a gap between research and the real world even though students are exposed to the internet and electronic devices, allowing cyberbullying to more easily occur. The research literature focuses mainly on traditional bullying, partly because of the insufficient data available. This dissertation study employed cyberbullying in the measures adopted, which will contribute knowledge to the area.

Methodology

Research design.

The data used in this research project is from the Health Behavior in School-Aged Children (HBSC) study, 2009-2010 (ICPSR 28241). The HBSC study included participants from 42 nations, including the United States, in the 2009-2010 cycle. The international HBSC study examines 11-, 13-, and 15-year-old children's attitudes and experiences concerning a wide range of health-related behaviors and lifestyle issues. This study uses U.S. data only. This survey was

administered to public, Catholic, and other private school students in grades 6, 7, 8, 9, and 10 or their equivalent in the 50 states and the District of Columbia. The samples were collected through a three-stage stratified design in which school districts were selected for the sample. Grade levels were then sampled from selected school districts, and classrooms were selected from those grade levels. Data was collected by The CDM Group, Inc., Bethesda, MD through a questionnaire administered to participants at their schools. To protect the anonymity of respondents, all variables with possible identifiable information have been collapsed or recoded. A total of 529 schools were contacted during data collection. Information was obtained from 327 schools, but only data from 227 schools is contained in this study. The remaining schools were identified as ineligible schools. Within these schools, 10,577 students were eligible and 9,227 participated, yielding a student response rate of 87.2 percent.

The 2009-2010 HBSC survey asked questions about nutrition; physical activity; violence; bullying; relationships with family and friends; perceptions of school as a supportive environment; and alcohol, tobacco, marijuana, and other kinds of drug use. The student survey, which took approximately 45 minutes to complete, was administered in a regular classroom setting to participating students by a school representative (e.g., teacher, nurse, guidance counselor, etc.). The school representatives read scripts that explained the survey procedures. Three versions of the self-report questionnaire were administered: one for 5th and 6th graders; one for students in 7th, 8th, and 9th grade; and one for students in 10th grade. The 10th grade questionnaire contained the complete set of questions. An auxiliary questionnaire was sent to a school administrator in the responding schools to obtain school-level information on the health-related topics, with a special focus on nutrition, meal services, physical activity programs, and violence prevention in addition to security practices employed by the school. This questionnaire

was designed to take no more than 15 minutes for completion, which is appropriate for the age and development of participants.

Sampling strategy.

The sampling plan was designed to support three overlapping study probability sample designs and target populations, each with different sampling requirements. The samples were designed to provide precision estimates of $\pm 3\%$ at 95% confidence for student characteristics of either individual age groups (11.5, 13.5, and 15.5 years) or each individual grade (5-10). African-American and Hispanic students were oversampled to obtain better estimates for these groups. Precision estimates for the minority over-sample required a precision within 5% at 90% confidence for estimating African-American and Hispanic student characteristics.

The study employed a stratified random sample of U.S. youth. Stratified sampling is a probability sampling technique. To conduct stratified sampling, the entire population will be divided into certain numbers of subgroups or strata, and the final samples will be proportionally randomly selected from these subgroups/strata (Burchett, 2014). Sampling was conducted over three stages; first, districts were randomly selected. Schools were then randomly selected from districts; public and private schools were selected at random from identified school districts. Classrooms were then randomly selected then students were randomly selected from the classrooms.

In the first stage of sampling, school districts of public schools were selected randomly. The districts were classified as urban or rural using a comprehensive list of schools from Quality Education Data, - 2 - Inc. (QED). Generally, schools selected from the districts by grouping rural school districts within a county ensuring that there are at least 10 schools. A sample of 94 school districts was selected. A list of private and Catholic schools was also obtained from the QED.

These schools were assigned, based on their location in the 1,302 school districts created for the selection of public schools. All private and Catholic schools were eligible for inclusion into the sample of the 94 sampled school districts. The probability of selecting a private or Catholic school was the same as the probability of selecting a public school during this first stage of sampling. In the second stage of selection, schools were selected from the sampled school districts. In the end, there were 314 schools who participated in the study. Finally, in the third stage of sampling, classes were selected from the schools designated for sampling students from a specific grade. For example, in a school in which 6th grade students are to be sampled, a class was selected at random, and all of the students in that class were included in the sample. Most schools had two classes selected for participation, but the number of classes selected could range between one and four.

Variables

This study investigates the effect of several sources of strains on bullying perpetration, related to the receipt of special education services. Specific constructs and scales selected were included in the study based on an extensive overview of general strain theory and bullying literature, as well as my theoretical understanding of the topic. Within the current document, variable names as listed in the HBSC 2009-2010 are noted in parentheses following the explanation of the item. Table 1 lists the variables included in the study. All independent variables included in the study have been identified by (Agnew, 2001) as stressful events that are more likely to lead to crime, delinquency, or deviant behaviors.

Table 1
Variables Used in This Study

Independent Variables	Mediator	Moderator	Dependent Variables	Controlled Variables
<ul style="list-style-type: none"> ▪ Parental Rejection ▪ Peer Victimization ▪ Negative School Experience ▪ Chronic Disease ▪ Financial Resources 	<ul style="list-style-type: none"> ▪ Negative Emotions 	<ul style="list-style-type: none"> ▪ Immigration Status 	<ul style="list-style-type: none"> ▪ Perpetration 	<ul style="list-style-type: none"> ▪ Gender ▪ Race ▪ Family SES ▪ Grade

Measures in Study

Independent variable.

There are five independent variables in this study to predict the outcome variable. They are parental rejection, victimization, chronic disease, negative school experience, and financial resources.

Parental rejection.

The variable *parental rejection* measures the relationship in which parents reject their children, do not express love or affection for them, show little interest in them, provide little help and support to them, and often control them. In the HBSC survey, there was not an existing

parental rejection variable. Consequently, I created a scale measuring parental rejection based on the guidance provided by GST. Parental rejection was measured through an index using eight items from the original survey. The items ask “Parent/Guardian: helps me as much as I need”, “lets me do the things I like doing”, “is loving”, “understands my problems”, “likes me to make own decisions”, “tries to control everything I do”, “treats me like a baby”, “makes me feel better when upset”.

Item responses in the original survey are coded as: almost always = 1, sometimes = 2, almost never = 3, don't have or don't see parent/guardian = 4. To compute the index, I reverse-coded the six items below to make the higher value of the index indicating stronger parental rejection: “Parent/Guardian: helps me as much as I need”, “lets me do the things I like doing”, “is loving”, “understands my problems”, “likes me to make own decisions”, “makes me feel better when upset”. Next, I calculated a sum for the aforementioned variables. The final scores ranged from 8-32, with higher scores indicating less parental rejection. The sum was divided by the valid number of responses to these eight items. Internal consistency for the scale was obtained during preliminary analysis. Preliminary analysis revealed a Cronbach's alpha of .811, which indicates that together the items are a reliable measure of parental rejection.

Victimization.

An index measuring victimization is used to examine abusive peer relations, which is identified by Agnew (2001) as one of the stressful events and conditions that are more likely to lead to crime than other types of strains. This index was developed using eleven self-report questions for participants in the original survey. These questions elicited the frequency that the participants had been bullied in different forms: called names/teased, left out of things, hit/kicked/pushed, lied about, targeted for race/color, targeted for religion, subject of sexual

jokes, used a computer/email at and outside of school, and used a cell phone at and outside of school. Offered responses ranged from 1 (I have not been bullied in this way in the past couple months) to 5 (Several times a week). The final scores ranged from 11 to 55 in this study, with a higher score indicating a higher level of victimization. Then the sum is divided by the valid number of responses to these eleven items. With an alpha level of .896, the scale demonstrated internal consistency. Multiple studies have adopted this index and largely supported that responses to the HBSC self-report bullying items demonstrate structural validity for measuring student bullying perpetration and victimization behaviors (Roberson & Renshaw, 2017).

Negative school experience.

Negative school experience assesses the negative experience and perspectives about school as boring and negative, which is another factor identified by Agnew(2001) as a type of strain that is more likely to result in crime. Negative school experience was measured on a likert scale. The question states, “How do you feel about school at present?” Responses ranged from “I like it a lot”= 1 to “I don't like it at all” = 4.

Chronic disease.

Chronic disease examines the strain resulting from long-term disease. The question asked, “Do you have a long-term illness, disability, or medical condition (like diabetes, arthritis, asthma, allergy, ADHD, or cerebral palsy) that has been diagnosed by a doctor?” Each item’s response is coded as yes = 1 and no = 2 in the original survey. The variable was recoded, with 1 assigned to yes and 0 assigned to no.

Financial resources.

Financial resources measures the financial strain on an individual, because multiple research has supported that crime is frequently used to acquire money (Agnew et al., 1996; Cernkovich et

al., 2000; Colvin, 2000) and demonstrate or obtain autonomy (Moffitt, 2003; Tittle, 1995). In HBSC, a Family Affluence Scale was created by researchers based on five items. The questions read as follows: “How well off do you think your family is?”; “How many computers does your family own?”; “Do you have your own bedroom for yourself?”; “Does your family own a car, van, or truck?”; “During the past 12 months, how many times did you travel away on vacation with your family?” The Family Affluence Scale ranges from 0 to 9, with 0 indicating low family affluence and 9 indicating high family affluence. Then the sum is divided by the valid number of responses to these five items.

Dependent variable.

Perpetration.

One continuous dependent variable was used in this study – perpetration. An index measuring perpetration was developed using eleven self-report questions for participants taken from the original questionnaire. These questions elicited the number of times the participants bullied others in multiple ways including: calling names; hitting, kicking, and pushing; telling lies; bullying based on race; bullying based on religion; making sexual jokes; using computers; and using cellphones. Offered responses ranged from 1 (haven’t bullied others in this way in the past couple of months) to 5 (several times a week). The sum ranged from 11 to 55, with a higher score indicating a higher level of bullying. Then the sum is divided by the valid number of responses to these eleven items. The index demonstrates strong reliability ($\alpha = .941$). Both the victimization and perpetration items used in the analysis are consistent with items asked in the Olweus Bully/Victimization Questionnaire, a survey widely employed in bullying research (Solberg & Olweus, 2003).

Mediating variable.

Negative emotions.

Negative emotions measure the negative emotions that were caused by strains and could result in crime based on Agnew's statement (Agnew, 2006). Negative emotions measures the negative emotions students experience such as frustration, irritability, and sadness. A scale was created from five likert-type items. Responses range from 1 (about every day) to 5 (rarely or never). The questions read as follows: "In the last 6 months, how often have you been feeling low?"; "In the last 6 months, how often have you had irritability?"; "In the last 6 months, how often have you felt nervous?"; "Thinking about last week, have you felt sad?"; "Thinking about last week, have you felt lonely?" A sum was derived through adding scores. Then the sum was divided by the valid number of responses to these five items. Higher scores indicate less negative emotions. Agnew stated in GST that different sources of strains can lead to negative emotions, such as frustration and anger, and therefore individuals might turn to delinquency behaviors as a way to cope with these negative emotions. Therefore, negative emotions have an important mediating role.

Internal consistency for the scale was obtained during preliminary analysis. Preliminary analysis revealed a Cronbach's alpha of .818, which indicates that, together, the items are a reliable measure of negative emotions.

Moderating variables.

Immigration status.

Supported by MSTminority stress theory, minorities are vulnerable to strains. At the same time, the same strains might have different impact on immigrants compared to their native-born peers, because different cultural backgrounds generate different perspectives on the same

incident. Therefore, the relationship between stress and delinquency might differ based on immigration status. The relationship between stress and delinquency might be stronger for immigrants compared to their native-born peers. It is important to take the role of immigration status into consideration and test its moderating role. *Immigration status* was measured through the question, “Were you born in the United States?” Responses included yes = 1 and no = 2 for each of the items. During preliminary analyses, I recoded responses as no = 1 and yes = 0.

Control variables.

Several sociodemographic factors known to have significant effects on bullying in previous research was used as control variables: age, race, BMI, gender, grade, and family SES.

Gender

Gender was measured through a dichotomous variable. The question read: “Are you a boy or a girl?” Responses to this question are coded 1 = Male, 2 = Female. Therefore, 1 indicated the respondent is male, and 2 indicated the respondent is female.

Race

Race/ethnicity was measured through dummy variables created by the researcher. Six dummy variables were created based on current responses about races in the HBSC 2009-2010. The reference group is White. This will be done for parsimony. Variables included: African-American, Asian, American Indian or Alaska Native, Native Hawaiian or other Pacific Islander, Two or More Races, and Hispanic. Original categories as listed in the HBSC 2009-2010 questionnaire include African-American, White, Asian, American Indian or Alaska Native, Native Hawaiian or other Pacific Islander, and Other. Respondents were asked to choose *not marked* = 0 or *marked* = 1 to the categories and were allowed to select more than one. Ultimately, I used reference variable to indicate the primary race of the students, which is White.

Grade in school

Grade in school measures a child's grade in school at the time of the original survey's data collection. The item asked, "What grade or year is your child attending (GRADE)?" Response choices range from kindergarten up to twelfth grade (Senior). Additional responses included pre-first grade, ungraded, and special education. A continuous ratio-level variable was computed to indicate the number of years the child has spent in school.

Family SES

Family SES is a computed variable calculated by HBSC researchers. It was derived from "What is your mother or father's occupation?" This item was transcribed by the HBSC into 5 categories where 1 = low (restaurant worker, factory worker, transportation), 2 = skilled worker, military (craftsperson, construction, military, farm, mechanic), 3 = technical/office/sales (technical, office worker, sales worker), 4 = business person (business owner, executive, director), and 5 = professional work. The higher value indicated higher socioeconomic status. Family SES was then calculated by taking the average of the mother's and father's reported SES when both were present. Otherwise, the value for the available parent was used. Family SES was standardized in the analysis.

Analysis Plan

IBM SPSS Statistics 20 was used for data analysis. An alpha level of .05 was used to determine significance across the study.

Missing data.

In order to accurately reflect the situations of the participants using scales, missing data was carefully dealt with. In the scale of parental rejection, only cases on which participants answered at least 6 items out of the total 8 items in the scale were included in the model, and

other cases were treated as missing data. Similarly, cases where participants answered at least 8 items out of the total 11 items on the bullying perpetration and peer victimization scales were included in the model, and other cases were treated as missing data. Cases in which participants respond to at least 4 items out of the total 5 items on the negative emotions scale will be retained in the model.

Descriptive analysis.

I analyzed measures of central tendency, range, and variance in efforts to assess the distribution of values and responses as well as investigate patterns of responses for each variable. Specifically, for continuous variables (i.e., parental rejection, negative school experience, financial resources, victimization, perpetration) standard deviation, mean, median, range, minimum, and maximum were calculated. For categorical variables (i.e. race, gender, immigration status, chronic disease), frequencies were obtained.

Multivariate analysis.

For multivariate analysis, I used four groups of least square regressions to explain the outcome variable *bullying perpetration*. Linear least squares regression is one of the most extensively used modeling methods (Ramsey, 1969). In the least squares method, the unknown parameters are estimated by minimizing the sum of the squared deviations between the data and the model. The minimization process reduces the overdetermined system of equations formed by the data to a sensible system of p , in this case p is the number of parameters.

Conducting multiple least squares regression analysis has three advantages. First, it allowed me to evaluate the role of control variable by comparing one model with control variables and another model without control variables. Secondly, it allowed me to investigate the role of a mediator by comparing the coefficient in one model in which the mediator was not

included with the coefficient in another model in which the mediator was included. Thirdly, it allowed me to include interaction terms, which were used to test the moderator. The test statistic (F) was used to evaluate the significance of the hypothesized model. Adjusted R^2 , which ranges from 0 to 1, was used to assess the percent of the variance accounted for by the explanatory variables. The obtained coefficient (b) was used to indicate the strength and direction of the association for each variable. The p value indicated whether each effect is statistically significant.

Centering variables

It is important to center variables when an interaction term/moderation is included in a regression model. When a regression model contains an interaction term, the b parameters represent the relationship between the individual predictors they represent and the outcome when other independent variables are zero. However, the presence of the moderation effect might make the parameters for the main individual variables uninterpretable because a variable with a score of zero makes no sense in many situations (Field, 2013). For instance, heart rate, height of students, or weight of students cannot be zero. This makes the b parameters of other variables in the same model uninterpretable, because these variables cannot be zero. In this case, we adopt grand mean centering. Centering transforms a variable into deviations around a fixed point. This fixed point could be any chosen value, but typically it is the grand mean, known as grand mean centering. In this dissertation study, the independent variables, including parental rejection, peer victimization, chronic disease, negative school experience, and financial resources, are grand mean centered. The hypothesized mediator is mean centered if it is found to be significant.

Assumption tests

Variable type.

The outcome variable in least squared regression model should be continuous. The independent variables in multiple regression model can be either continuous or categorical. Nominal or ordinal-level IVs that have more than two values or categories (e.g., race in this study) were recoded into dichotomous variables prior to conducting the analysis.

Normality assumption.

I examined the distribution of the independent variables and dependent variables that are continuous to check the normality assumption. As the graph in Figures 2 and 3 indicate, both victimization_c and perpetration are positively skewed. The distributions of victimization_c and perpetration are not normal and thus violate the normality assumption. We can also conclude from Figure 4 and Figure 7 that although emotions_c and rejection_c are slightly skewed in a negative direction; the normality assumption is not violated. As the graphs in Figure 5 and Figure 8 show, centered negative school experience and financial resources are slightly positively skewed, but not enough to violate the normality assumption. As the graph in Figure 6 shows, SES is normally distributed.

Figure 2. The Distribution of centered peer victimization variable

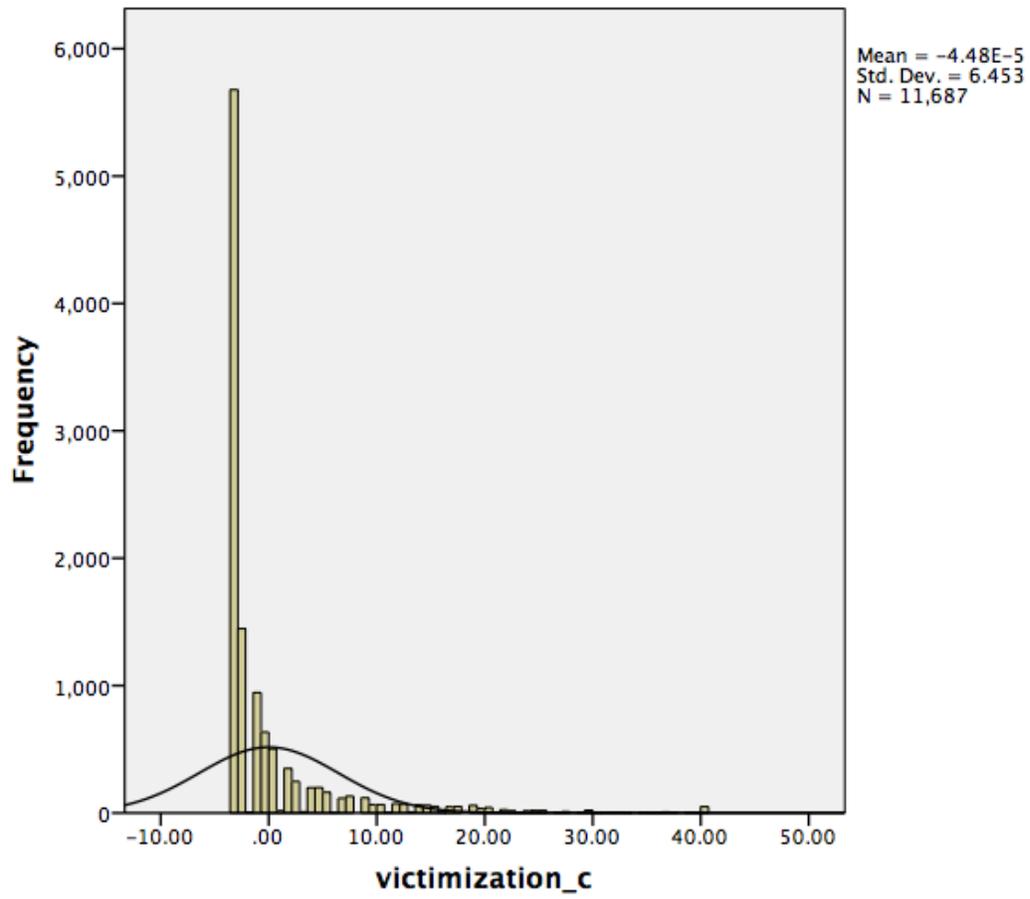


Figure 3. The Distribution of Perpetration

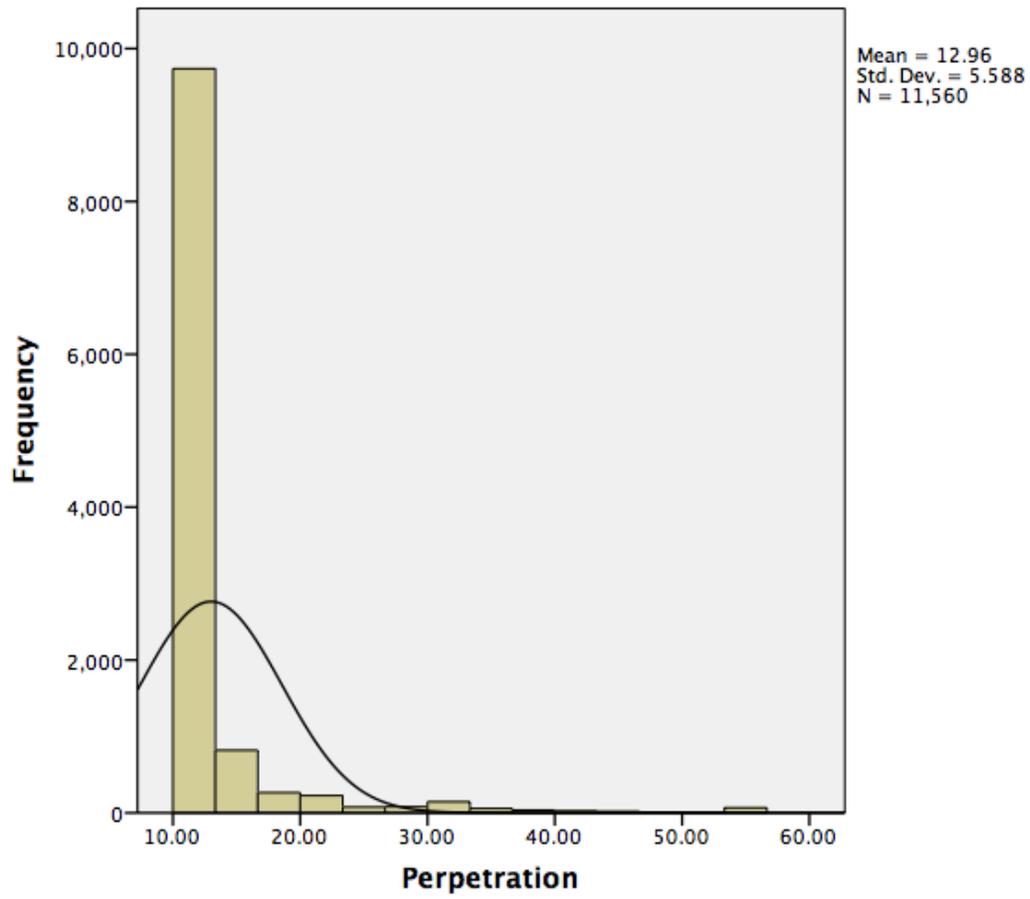


Figure 4. The Distribution of centered negative emotions variables

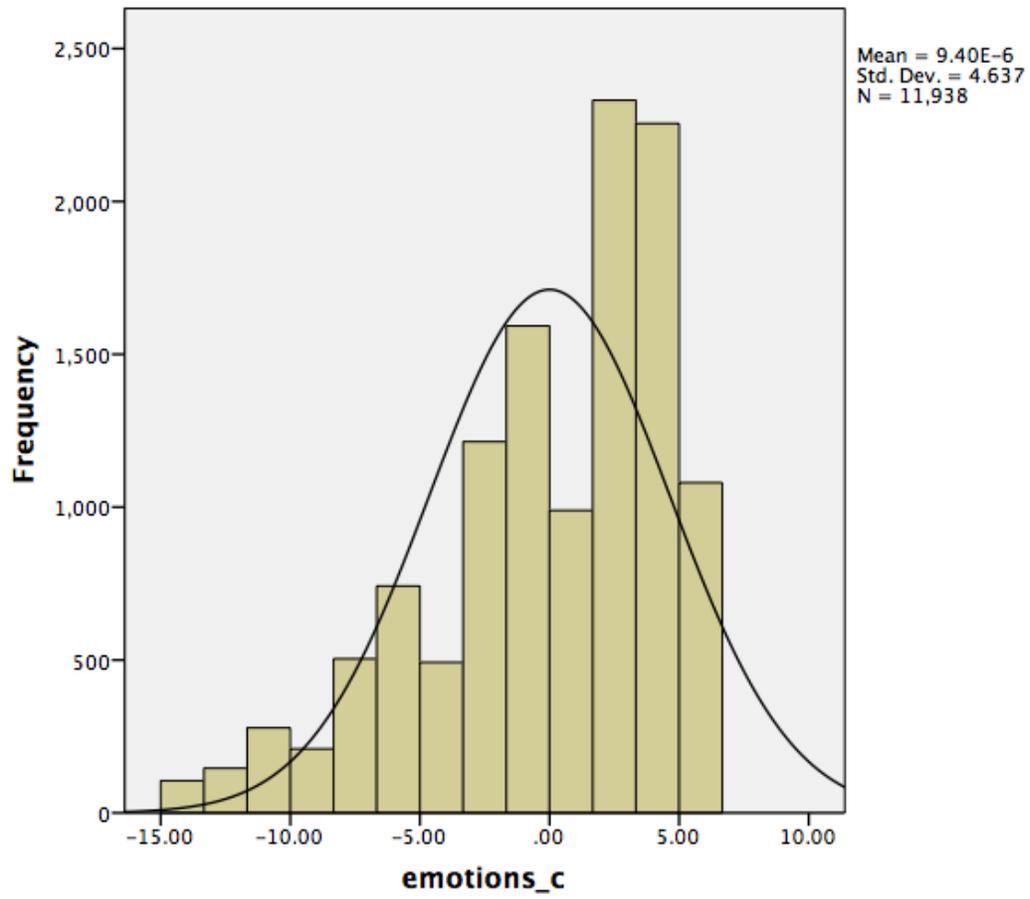


Figure 5. The Distribution of centered negative school experience variable

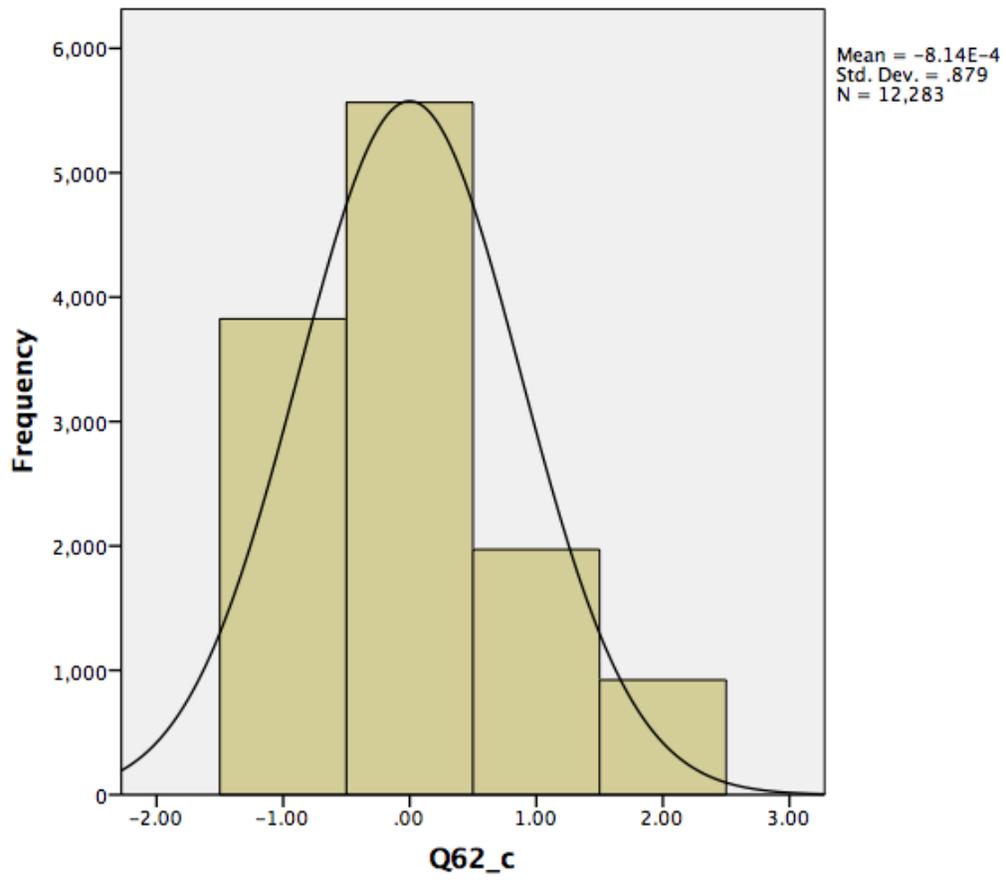


Figure 6. The Distribution of SES

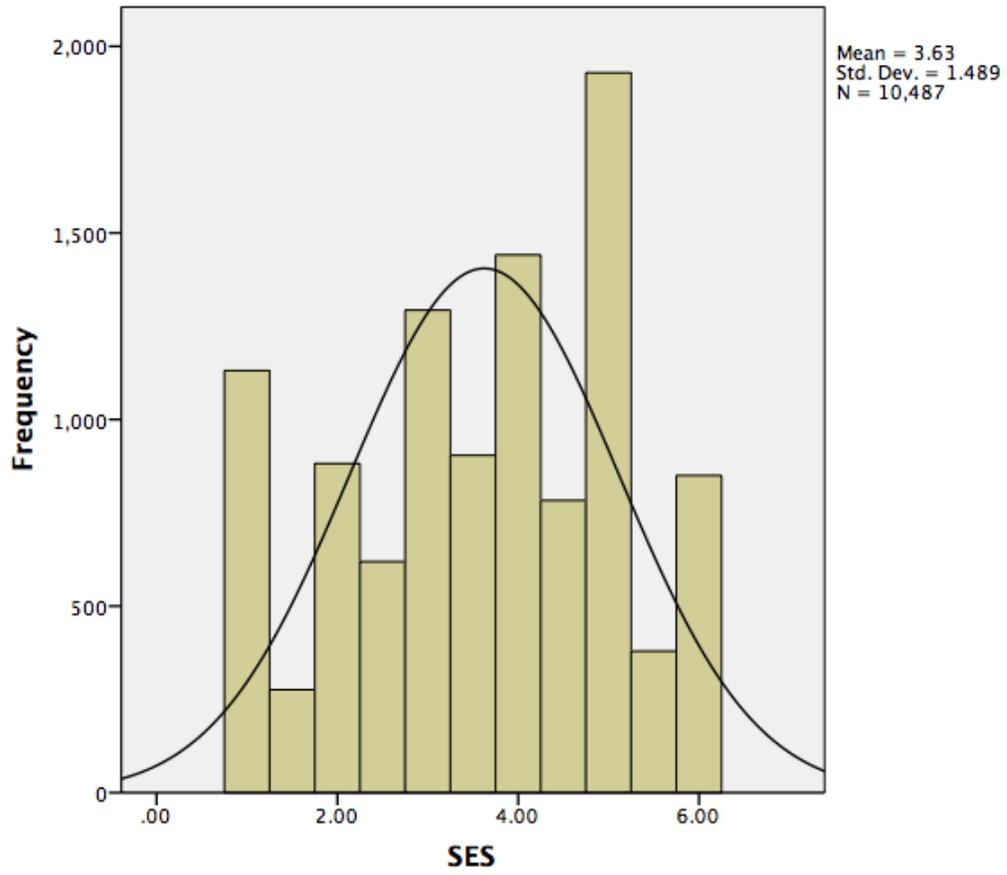


Figure 7. The Distribution of centered parental rejection variable

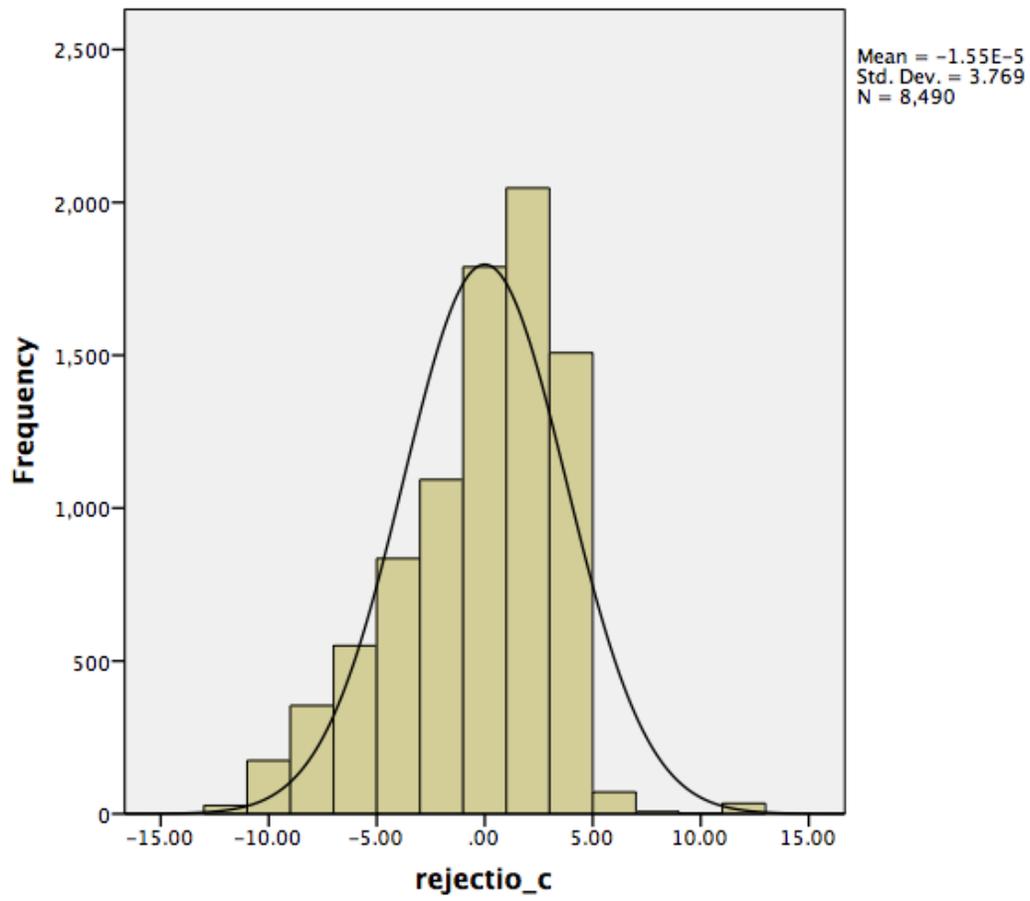
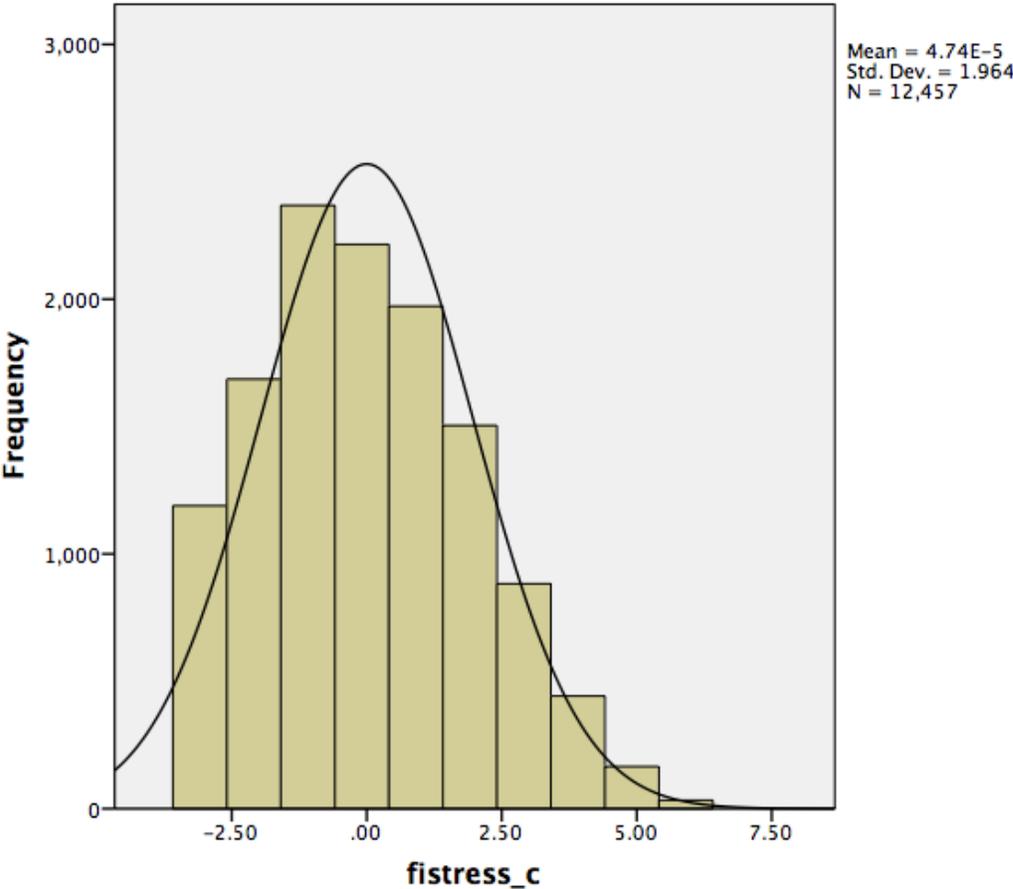


Figure 8. The Distribution of centered financial resource



Logarithmic transformation

Logarithmic transformation is one of the most commonly used transformations. A logarithmic transformation is used to normalize data that exhibits right skewness (positively skewed) and for data where the variability of residuals increases for larger values of the dependent variable (Field, 2013). Therefore, the skewed distributions of the two right skewed variables, centered peer victimization and perpetration, led us to employ their logarithmic transformations. The logarithmic transformation improved the distribution of these two variables and made them more symmetric.

Correlation between variables

Another linear regression assumption is that the relationship between the dependent and independent variables is linear. We can check this assumption by examining the Pearson correlation coefficients of the dependent and independent variables. Linearity assumption is checked, and the results indicate a negative correlation between stress and negative emotions; a positive correlation between bullying perpetration and peer victimization; and a positive correlation between fathers' education level and reading scores. The association between parental rejection, negative school experience, and bullying perpetration are not statistically significant, with P values of .697 and .088 respectively. Although the scatter graphs suggest that the linearity assumption may be violated, I kept the independent variables in the model, because their correlation with the outcome variables were significant, or they were supported by GST. However, this violation must be noted as a limitation of the model.

Independent errors and outliers

Durbin-Watson Statistic is adopted to test the presence of serial correlation among the residuals. When the Durbin-Watson statistic is approximately 2, the residuals are uncorrelated

(Field, 2013). In this study, the value of Durbin-Waston is 1.981, close to 2, indicating no serial correlation.

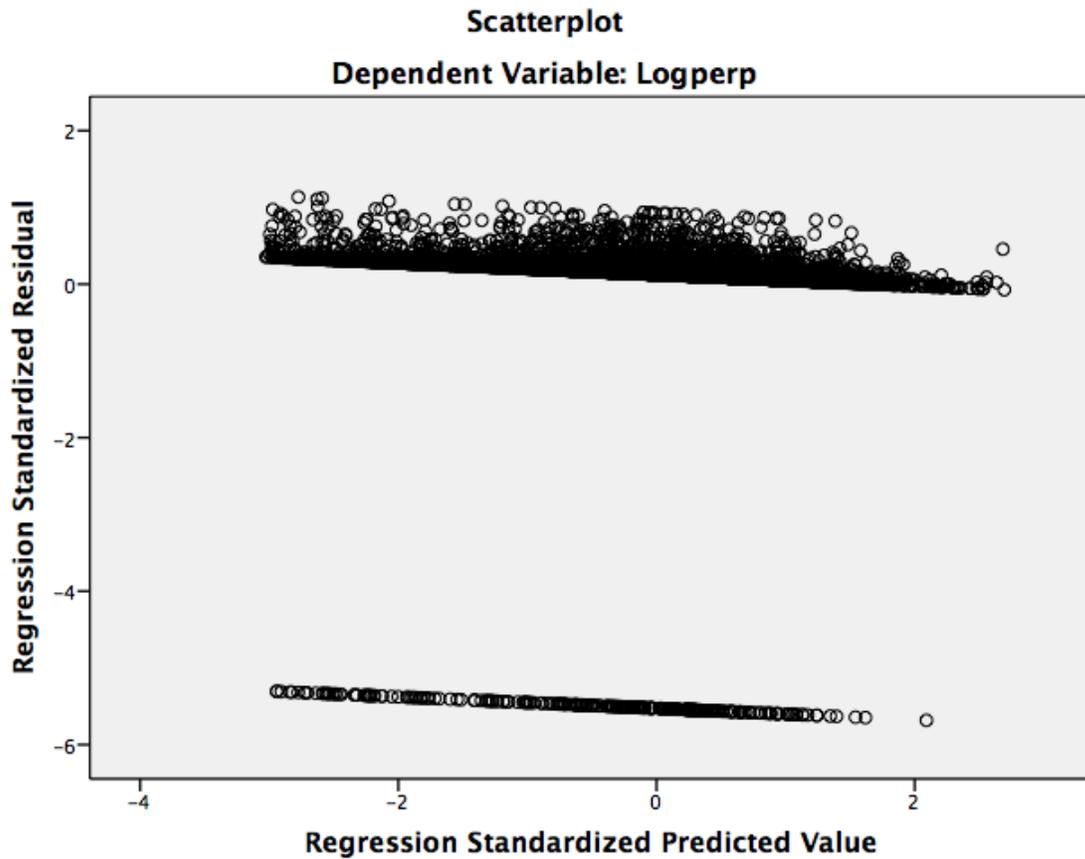
Multicollinearity

The largest VIF (Variance Inflation Factor) is 1.193, which is smaller than 10. The smallest Tolerance is .838. Both values show no evidence of multicollinearity (Bowerman & O'Connell, 1990, Menard, 1995).

Homoscedasticity

The scatter plot of standardized residual versus standardized predicted value in Figure 9 indicates that the variations are not constant and not the same for all values of the predictor variable. There is evidence of heteroscedasticity. Heteroscedasticity refers to a situation where the variation of a variable is unequal across the range of its predictor's values (Field, 2013).

Figure 9. Scatter Plot of Standardized Residual vs. Standardized Predicted Value



Weighted least squares regression.

Based on the assumption results above, weighted least squares (WLS) regression was chosen for this dissertation study. The purpose for using WLS was the oversampling of the African American and Hispanic students in the HBSC dataset. The estimate of the population projection might be distorted by the oversampling of minorities, which surely leads to an unrepresentative sample with respect to minorities. Therefore, weights can be used to achieve precise estimates. Instead of applying ordinary least squared regression model to the sample, which is a special case of WLS where all the cases are equally weighted, WLS can minimize the sum of squared residuals (Cunningham, 2016). The second reason for using WLS is that WLS can achieve

precise estimates by correcting for heteroscedasticity. WLS is used when the variances of the observations along the covariance matrix are not constant due to the unequal contribution of each case. By assigning different weights, WLS regression can be used when least square regression model is not appropriate. Therefore, the weight variable provided by the dataset was included in the WLS regression model to adjust weights of each case.

In the first model, the outcome variable, bullying perpetration, was regressed on the control and demographic variables. Specifically, I ran regression models for a) gender, b) race, c) grade, d) family SES, and e) immigration status. Next, I ran the aforementioned regression model a second time with the inclusion of independent variables: a) parental rejection, b) peer victimization, c) chronic disease, d) negative school experience, and e) financial resources. This second model investigated whether the independent variables significantly predict the outcome variable after controlling for gender, race, grade, and family SES.

In efforts to test the mediating effects of negative emotions, I ran the third model. A classic approach for testing mediation is provided by Baron and Kenny (1986). Their article has been cited over 72,000 times in scientific papers, which can demonstrate how influential this method has been. In order to test the mediation role of negative emotions, which is supported by general strain theory, negative emotion was added as an independent variable. If negative emotions proved to be a mediating variable, as hypothesized, the coefficient values associated with the independent variables in the third model would be reduced. The predictor must predict the outcome variable less strongly in this model than in previous models without the mediator. A reduction in the relationship between the predictors and outcome would present due to the

inclusion of the mediator. This method to test the effect of mediators has been adopted and supported by the literature (MacKinnon, Fairchild, & Fritz, 2007; Midgley & Lo, 2013).

To test the moderating effects of immigration status, I ran the fourth model. The interaction items, immigration status*strains and immigration status*negative emotions were added to the fourth model. Significant interaction effects would signal a moderating role for immigration status in the relationship between strains and negative emotions on the outcome variable bullying perpetration. If the interaction effects are not significant, they were dropped from the model to maintain parsimony. Table 3 shows the variables to be used in each regression model that I used to test each of the study hypotheses.

Following the aforementioned analyses and based on the results of them, a final model was created including dependent variables, independent variables, control variables, and interaction terms that proved significant. This final model was used to explain the relationship between the independent, dependent, control, mediating, and moderating variables.

Table 2
Models Used in This Study

	Model 1	Model 2	Model 3	Model 4
Independent Variable		parental rejection, peer victimization, chronic disease, negative school experience, and financial resources ,	parental rejection, peer victimization, chronic disease, negative school experience, and financial resources , and negative emotions.	parental rejection, peer victimization, chronic disease, negative school experience, and financial resources , and negative emotions (if needed).
Dependent Variable	Bullying Perpetration	Bullying Perpetration	Bullying Perpetration	Bullying Perpetration
Demographic and Control Variables	gender, race, grade, and family SES, immigration status	gender, race, grade, and family SES, immigration status	gender, race, grade, and family SES, immigration status.	gender, race, grade, and family SES, immigration status.
Interaction Terms	N/A	N/A	N/A	Immigration status*negative emotion; Immigration status*strain variables (added separately in submodels)

Institutional Review Board Approval

The data used for the current study was derived from a previously completed study and does not identify participants. The University of Alabama’s Institutional Review Board approved methods employed in this study on September 15, 2017.

CHAPTER 4 - RESULTS

Introduction

This chapter presents the results of the aforementioned analyses followed by a brief discussion. First, descriptive information for the sample of parents is presented. Next, using procedures described in the data analysis section, the regression models are compared and reported. Lastly, the following hypothesis are answered with the regression results.

1. Experiencing parental rejection is positively associated with bullying perpetration (H₁).
2. Victimization is positively associated with bullying perpetration(H₂).
3. Having chronic disease is positively associated with bullying perpetration (H₃).
4. Having negative school experience is positively associated with bullying perpetration (H₄).
5. Having limited financial resource is positively associated with bullying perpetration (H₅).
6. Negative emotions mediate the effects strains have on bullying perpetration (H₆).
7. The Immigration status moderates the effects of strains and negative emotions on bullying perpetration (H₇).

Descriptive Analysis

The means, minimum, and maximum are reported for the continuous variables, and the frequencies are reported for the categorical variables. Cronbach alpha for the scales are also provided. These descriptive results are shown in Table 3 and Table 4.

In this dataset, with respect with race/ethnicity, 48.8% (n=5903) were White; 17.9% (n=2164) were Black or African-American; 3.9% (n=469) were Asian; 19.8% (n=2392) were Hispanic; 1.8% (n=222) were American Indian or Alaska Native, 0.9% (n=111) were Native Hawaiian or Other Pacific Islander; 6.8% (n=828) were Two or More Races. There are generally equal numbers from both genders, with females composing 48.6% and males composing 51.4%. Most participants (91.2%) reported that they were born in the U.S. (91.2%), and 8.8% of participants were considered immigrants. Slightly more participants (58%) reported to have long-term disease. The grade level of participants ranges from grade 5 to grade 10. The numbers from each grade vary slightly. Grade 8 is the largest group, providing 19.6% students, while grade 5 is the smallest group, providing 13.6% students.

Table 3
Descriptive Statistics for Categorical Variables

	Frequencies
Race	White=48.8% Hispanic=19.8% Black=17.9% Hispanic=19.8% Two or more races=6.8% Asian=3.9% American Indian or Alaska Native=1.8% Native Hawaiian or other Pacific Islander=.9%
Gender	Male=51.8% Female=48.6%
Grade	Grade 5=13.6% Grade 6=16.2% Grade 7=19.2% Grade 8=19.6% Grade 9=16.4% Grade 10=15.1%
Chronic Disease	Have long-term disease=58% No long-term disease=42%
Immigration Status	Born in the U.S.=91.2% Born outside of the U.S.=8.8%

Students' self-reported bullying perpetration behaviors ranged from 11 to 55 and had a mean of 12.96. This indicates an overall low bullying perpetration rate. Similarly, the mean for peer victimization is 14.36 on a scale with the same range of bullying perpetration (11-55). The mean value for negative school experience is 2, on a scale ranging from 1 to 4. The mean for family SES is 3.62, based on a scale ranging from 1 to 6. Negative emotions ranged from 5 to 25 and has a mean of 19.14. The mean of financial resources is 3.09. The mean of parental rejection is 19.21 on an 8-32 scale.

Table 4
Descriptive Statistics for Continuous Variables

Variable	Mean	Cronbach alpha	Min	Max
Perpetration	12.96	.941	11	55
Parental Rejection	19.21	.811	8	32
Victimization	14.36	.896	11	55
Financial resources	3.09		0	9
Negative Emotions	19.14	.77	5	25
Family SES	3.62		1	6
Negative School Experience	2		1	4

Multivariate Analysis Results

Weighted Least Square Regressions were conducted to assess the relationship between each of the strain-related independent variables, demographic and control variables, mediating variable, the interaction terms, and the outcome variable.

Table 5 presents results found for the bullying perpetration outcome variable in Model 1 and Model 2. In Model 1, demographic and control variables, including gender, race, grade, family SES, and immigration status, are predictors. $R^2 = .007$, indicating that these variables account for 0.7% variation in the bullying perpetration scale. $F = 8.382$, which is significant at $p < .001$.

Based on Model 1, we incorporate the strain-related variables in Model 2. The independent variables include parental rejection, peer victimization, chronic disease, negative school experience, financial resources, and the demographic and control variables included in Model 1. The combination of these predictors account for 51.3% variation in the bullying

perpetration scale ($R^2 = .513$). $F = 515.385$, which is significant at $p < .001$. We can conclude that, with the inclusion of these strain-related predictors, the overall regression model is improved and better predicts the outcome variable.

In both models, immigration status (“Were you born in the US?”) was found to be statistically significant ($p \leq .05$), while in Model 2, peer victimization, parental rejection and race (Hispanic VS white) proved significant ($p \leq .05$). The two control variables SES and gender were not found to be statistically significant ($p \leq .05$).

Table 5
WLS Regression Model 1 VS Model 2

Variables	Model 1 N=10019				Model 2 N=6878			
	<i>Coeff</i>	S.E.	Beta	<i>P</i> value	<i>Coeff</i>	S.E.	Beta	<i>P</i> value
Constant	2.274	.133		.000*	1.927	.079		.000*
Black vs. White	-.316	.069	-	.000*	.048	.041	.010	.245
Asian vs. White	.213	.117	.019	.070	.109	.069	.014	.118
American Indian or Alaska vs. White	.257	.190	.014	.176	.089	.113	.011	.196
Native Hawaiian or Other vs. White	-.234	.224	-	.296	.172	.133	.011	.196
Two or More Races vs. White	.119	.089	.014	.179	.053	.051	.009	.298
Hispanic vs. White	.095	.073	.014	.191	.090	.043	.019	.036*
Gender	.151	.046	.033	.001*	-.006	.027	-.002	.832
SES	-.071	.016	-	.000*	-.009	.010	-.009	.330
Born in the US	-.205	.095	-	.030*	-.159	.055	-.025	.004*
centered log victimization			.046		.793	.009	.715	.000*
centered parental rejection					.007	.004	.017	.050*
centered chronic disease					.041	.027	.013	.135
centered financial resource					-.008	.008	-.009	.314
centered negative school experience					.025	.016	.013	.127

Notes. *N*'s range from 6878 to 10019 due to the handling of missing data. For gender, 1= male, 2 = female.

* $p < .05$.

Model 3 incorporates negative emotions while keeping the variables in Model 2. Model 3 was found to be statistically significant, with 48.3% of the variance in the bullying perpetration scale explained by the third regression model. In Model 3, the combination of these predictors account for 48.3% of the variation in the bullying perpetration scale ($R^2=.483$). $F=423.148$, which is significant at $p < .001$. There was a change of sample size for model 3, in comparison to model 2. In model 3, the variable added was *emotions_c*. This model only included participants who responded to at least 80% of the items on this scale. This resulted in a decrease in the sample size for model 3 in comparison to model 2. As a result, the R^2 in model 3 dropped by 3% in comparison to the R^2 for Model 2. The R^2 decreased in size due to the very small beta value (.028) of the added independent variable, *emotions_c*. Although this predictor was significant ($P=.005$), the change in the outcome variable due to the added variable was low. A one unit increase in *emotions_c* created a change of .025 in the outcome variable.

Negative emotions, while found to increase bullying perpetration among students, were not shown by this study to mediate strain-related variables' impact on bullying perpetration. The coefficient value for some strain-related variables (disease, financial resources, and negative school experience) actually increased slightly in Model 3, in comparison to Model 2, indicating that negative emotions did not mediate strains' impact on bullying perpetration. Therefore, there was no evidence for the mediation effect. The variable of negative emotions was retained in the model as an independent variable, because it is statistically significant in the model.

Table 6
WLS Regression Model 2 VS Model 3

Variables	Model 2 N=6878				Model 3 N=6804			
	<i>Coeff</i>	S.E.	Beta	<i>P</i> value	<i>Coeff</i>	S.E.	Beta	<i>P</i> value
Constant	1.927	.079		.000*	1.916	.078		.000*
Black vs. White	.048	.041	.010	.245	.049	.040	.011	.227
Asian vs. White	.109	.069	.014	.118	.105	.068	.014	.124
American Indian or Alaska vs. White	.089	.113	.011	.196	.119	.111	.009	.283
Native Hawaiian or Other vs. White	.172	.133	.011	.196	.174	.130	.012	.182
Two or More Races vs. White	.053	.051	.009	.298	.056	.050	.010	.266
Hispanic vs. White	.090	.043	.019	.036*	.101	.043	.022	.018*
Gender	-.006	.027	-.002	.832	.003	.027	.001	.900
SES	-.009	.010	-.009	.330	-.006	.009	-.006	.536
Born in the US	-.159	.055	-.025	.004*	-.160	.054	-.027	.003*
centered log victimization	.793	.009	.715	.000*	.780	.010	.697	.000*
centered parental rejection	.007	.004	.017	.050*	.003	.004	.007	.449
centered chronic disease	.041	.027	.013	.135	.043	.027	.014	.111
centered financial resource	-.008	.008	-.009	.314	-.005	.007	-.007	.471
centered negative school experience	.025	.016	.013	.127	.035	.016	.020	.031*
centered negative emotions					.009	.003	.028	.005*

Notes: *N*'s range from 6804 to 6878 due to the handling of missing data. For gender, 1= male, 2 = female.

* $p < .05$.

During the development of model 4, interaction terms were added separately to each of the sub-models. The first interaction term added in sub-model 4.1 was the interaction between immigration status and negative emotions. The second interaction term added in sub-model 4.2 was the interaction between immigration status and peer victimization. The third interaction term in sub-model 4.3 was the interaction between immigration status and financial resources. The fourth interaction term in sub-model 4.4 was the interaction between immigration status and having long-term disease. The fifth interaction term in sub-model 4.5 was the interaction between immigration status and negative school experience. The sixth interaction term in sub-model 4.6 was the interaction between immigration status and parental rejection. In these models, two statistically significant interaction terms ($p < .05$) were found: 1) the interaction between immigration status* negative emotions and 2) the interaction between immigration status* peer victimization.

Table 7

WLS Regression with Interaction between Immigration Status and Negative Emotions

Model 4.1 N=6804				
Variables	<i>Coeff</i>	S.E.	Beta	<i>P</i> value
Constant	1.900	.078		.000*
Black vs. White	.050	.040	.011	.211
Asian vs. White	.096	.068	.013	.160
American Indian or Alaska vs. White	.124	.111	.010	.264
Native Hawaiian or Other vs. White	.183	.130	.012	.159
Two or More Races vs. White	.053	.050	.009	.295
Hispanic vs. White	.101	.043	.022	.018*
Gender	.003	.027	.001	.904
SES	-.006	.009	-.006	.497
Born in the US	-.141	.054	-.024	.010 *
centered log victimization	.779	.010	.696	.000 *
centered parental rejection	.003	.004	.007	.468
centered chronic disease	.043	.027	.014	.116
centered financial resource	-.006	.007	-.007	.455
centered negative school experience	.034	.016	.019	.037*
centered negative emotions	-.031	.012	-.094	.012*
immigration status *negative emotions	.037	.011	.126	.001*

Notes: For gender, 1= male, 2 = female.

* $p < .05$.

Table 8

WLS model with Interaction between Immigration Status and Peer Victimization

	Model 4.2 N=6804				<i>Notes.</i> For gender, 1= male, 2 = female. * <i>p</i> < .05.
Variables	<i>Coeff</i>	S.E.	Beta	<i>P</i> value	
Constant	2.032	.086		.000*	
Black vs. White	.046	.040	.011	.250	
Asian vs. White	.107	.068	.014	.115	
American Indian or Alaska vs. White	.118	.111	.009	.288	
Native Hawaiian or Other vs. White	.171	.130	.012	.187	
Two or More Races vs. White	.054	.050	.010	.286	
Hispanic vs. White	.100	.043	.022	.019*	
Gender	.003	.027	.001	.913	
SES	-.006	.009	-.006	.540	
Born in the US	-.268	.063	-.045	.000*	
centered log victimization	.630	.046	.563	.000*	
centered parental rejection	.003	.004	.008	.420	
centered chronic disease	.045	.027	.015	.093	
centered financial resource	-.005	.007	-.007	.479	
centered negative school experience	.034	.016	.019	.036*	
centered negative emotions	.009	.003	.027	.006*	
immigration status *peer victimization	.142	.043	.138	.001*	

Table 9

WLS Regression with Interaction between Immigration Status and Financial Resources

Model 4.3 N=6804				
Variables	<i>Coeff</i>	S.E.	Beta	<i>P</i> value
Constant	1.918	.079		.000*
Black vs. White	.049	.040	.011	.227
Asian vs. White	.106	.068	.014	.122
American Indian or Alaska vs. White	.119	.111	.009	.283
Native Hawaiian or Other vs. White	.174	.130	.012	.182
Two or More Races vs. White	.056	.050	.010	.263
Hispanic vs. White	.100	.043	.022	.019*
Gender	.003	.027	.001	.900
SES	-.006	.009	-.006	.534
Born in the US	-.161	.055	-.027	.003*
centered log victimization	.780	.010	.697	.000*
centered parental rejection	.003	.004	.007	.448
centered chronic disease	.043	.027	.014	.109
centered financial resource	-.011	.030	-.014	.710
centered negative school experience	.035	.016	.020	.031*
centered negative emotions	.009	.003	.028	.005*
immigration status *financial resources	.005	.027	.007	.843

*Notes.*For gender,
1= male,
2 =
female.
* $p < .05$.

Table 10

WLS Regression with Interaction between Immigration Status and Chronic Disease

	Model 4.4 N=6804				<i>Notes:</i> For gender, 1= male, 2 = female. * $p < .05$.
Variables	<i>Coeff</i>	S.E.	Beta	<i>P</i> value	
Constant	1.916	.078		.000*	
Black vs. White	.049	.040	.011	.227	
Asian vs. White	.105	.068	.014	.125	
American Indian or Alaska vs. White	.119	.111	.009	.284	
Native Hawaiian or Other vs. White	.174	.130	.012	.181	
Two or More Races vs. White	.056	.050	.010	.267	
Hispanic vs. White	.101	.043	.022	.018*	
Gender	.003	.027	.001	.904	
SES	-.006	.009	-.006	.533	
Born in the US	-.159	.055	-.027	.004*	
centered log victimization	.780	.010	.697	.000*	
centered parental rejection	.003	.004	.007	.451	
centered chronic disease	.025	.118	.008	.835	
centered financial resource	-.005	.007	-.007	.475	
centered negative school experience	.035	.016	.020	.031*	
centered negative emotions	.009	.003	.028	.005*	
Immigration Status * Chronic Disease	.017	.108	.006	.872	

Table 11

WLS Regression with Interaction between immigration status and negative school experience

Model 4.5 N=6804				
Variables	<i>Coeff</i>	S.E.	Beta	<i>P</i> value
Constant	1.916	.078		.000*
Black vs. White	.049	.040	.011	.227
Asian vs. White	.105	.068	.014	.125
American Indian or Alaska vs. White	.119	.111	.009	.284
Native Hawaiian or Other vs. White	.174	.130	.012	.182
Two or More Races vs. White	.056	.050	.010	.266
Hispanic vs. White	.101	.043	.022	.018*
Gender	.003	.027	.001	.901
SES	-.006	.009	-.006	.536
Born in the US	-.160	.054	-.027	.003*
centered log victimization	.780	.010	.697	.000*
centered parental rejection	.003	.004	.007	.450
centered chronic disease	.043	.027	.014	.111
centered financial resource	-.005	.007	-.007	.471
centered negative school experience	.038	.067	.022	.569
centered negative emotions	.009	.003	.028	.005*
immigration status *negative school experience	-.003	.061	-.002	.960

Notes. For gender, 1= male, 2 = female.

* $p < .05$.

Table 12

WLS Regression with Interaction between immigration status and parental rejection

Model 4.6				
N=6804				
Variables	<i>Coeff</i>	S.E.	Beta	<i>P</i> value
Constant	1.917	.079		.000*
Black vs. White	.049	.040	.011	.227
Asian vs. White	.105	.068	.014	.123
American Indian or Alaska vs. White	.119	.111	.009	.283
Native Hawaiian or Other vs. White	.174	.130	.012	.182
Two or More Races vs. White	.056	.050	.010	.266
Hispanic vs. White	.101	.043	.022	.018*
Gender	.003	.027	.001	.899
SES	-.006	.009	-.006	.537
Born in the US	-.161	.055	-.027	.004*
centered log victimization	.780	.010	.697	.000*
centered parental rejection	.004	.016	.010	.786
centered chronic disease	.043	.027	.014	.110
centered financial resource	-.005	.007	-.007	.471
centered negative school experience	.035	.016	.020	.031*
centered negative emotions	.009	.003	.028	.005*
immigration status * parental rejection	-.001	.014	-.003	.937

Notes. For gender, 1= male, 2 = female.

* $p < .05$.

In the final model, interaction terms that were not statistically significant were dropped.

The overall model was found to be statistically significant, with 48.5% variance in the outcome

variable explained by the model ($R^2=48.5$). The table below presents results found for the bullying perpetration outcome variable in the final model. Hispanic, immigration status, peer victimization, negative emotions, the interaction between the immigration status and negative emotions, and the interaction between the immigration status and peer victimization proved significant ($p < .05$). The two control variables -gender and family socioeconomic status - were not found to be statistically significant ($p > .05$). As expected, students who experienced peer victimization were more likely than those who are not experiencing peer victimization to self-report bullying perpetration, with U.S. born students self-reporting more bullying perpetration than those who were immigrants. Experiencing more negative emotions was found to increase self-reported bullying perpetration among the student participants, but negative emotions were not shown by this study to mediate strain factors' impact on bullying perpetration.

The significant interaction effect involving the immigration status and negative emotions variable means that, in this study, the relationship between negative emotions and bullying perpetration differed by immigration status. Immigration status moderated the effect of negative emotions on bullying perpetration. The significant interaction effect involving the immigration status and peer victimization variable means the relationship between peer victimization and bullying perpetration is different in U.S. born children than in immigrant children. Immigration status moderated the effect of peer victimization on bullying perpetration. In Figure 11, the x-axis indicates immigration status and the y-axis indicates the score on the bullying perpetration scale. The blue column illustrates scores for those who report the most negative emotion with a score of 5 on the negative emotion scale. The orange column illustrates scores for those who report the least negative emotions with a score of 25 on the negative emotion scale. This figure shows that, among immigrants, those who report more negative emotions report more bullying

behaviors than those immigrants who report less negative emotions. Among nonimmigrants, those experiencing more negative emotions report less bullying behaviors, while those experiencing less negative emotions reported slightly more bullying behaviors.

In Figure 12, the x-axis and the y-axis remained the same. The blue group illustrates scores for those who report the least peer victimization with a score of 11 on the peer victimization scale; the orange group illustrates scores for those who report the most peer victimization with a score of 55 on the peer victimization scale. Figure 11 demonstrates that for both immigrants and nonimmigrants, those experiencing more peer victimization report a higher level of bullying perpetration. However, the relationship is slightly more dramatic for immigrants.

Bar charts provided a direct view of the differences in immigrants and US citizens in terms of these two relationships: victimization and bullying perpetration; negative emotions and bullying perpetration. However, the bar charts provided only the extreme values of the independent variables. Histograms can provide a comprehensive view of these relationships.

Figure 13 and Figure 14 provided overlapping histograms for the interaction terms. Figure 13 compared the two distributions. One group on the left includes participants who were US citizens and provided their negative emotions (red and black shown in the figure) and bullying perpetration data (orange and green in the figure), and the second group on the right includes participants who were immigrants and provided information about their peer victimization and bullying perpetration.

Figure 14 provided the comparison between two groups, US citizens and immigrants, in terms of their negative emotions and bullying perpetration. The negative emotions data was represented in red and black and bullying perpetration was represented in orange and green.

From the figure, we can see the relationship between negative emotions and bullying perpetration is more sharp and dramatic for immigrants comparing to their US born peers. Figure 15 provided the comparison between two groups, US citizens and immigrants, in terms of their peer victimization and bullying perpetration. The peer victimization data was represented in red and black and bullying perpetration was represented in orange and green. From the figure, we can see the relationship between peer victimization and bullying perpetration is basically the same for both groups but it is slightly dramatic for immigrants.

Table 14 provided a brief overview of the answers to the research questions. Please see below.

Table 13
Final Model

Final Model N=6804				
Variables	<i>Coeff</i>	S.E.	Beta	<i>P</i> value
Constant	2.021	.086		.000*
Black vs. White	.048	.040	.011	.234
Asian vs. White	.098	.068	.013	.151
American Indian or Alaska vs. White	.123	.111	.010	.268
Native Hawaiian or Other vs. White	.181	.130	.012	.163
Two or More Races vs. White	.050	.050	.009	.321
Hispanic vs. White	.100	.043	.022	.019*
Gender	.003	.027	.001	.918
SES	-.006	.009	-.006	.499
Born in the US	-.255	.063	-.043	.000*
centered log victimization	.621	.046	.555	.000*
centered parental rejection	.003	.004	.008	.438
centered chronic disease	.045	.027	.015	.097
centered financial resource	-.005	.007	-.007	.461
centered negative school experience	.033	.016	.019	.044*
centered negative emotions	-.033	.012	-.101	.007*
immigration status *negative emotions	-.039	.011	.133	.000*
immigration status *peer victimization	.150	.043	.146	.000*

Figure 10. Negative Emotions, Immigration Status, and Bullying Perpetration Bars

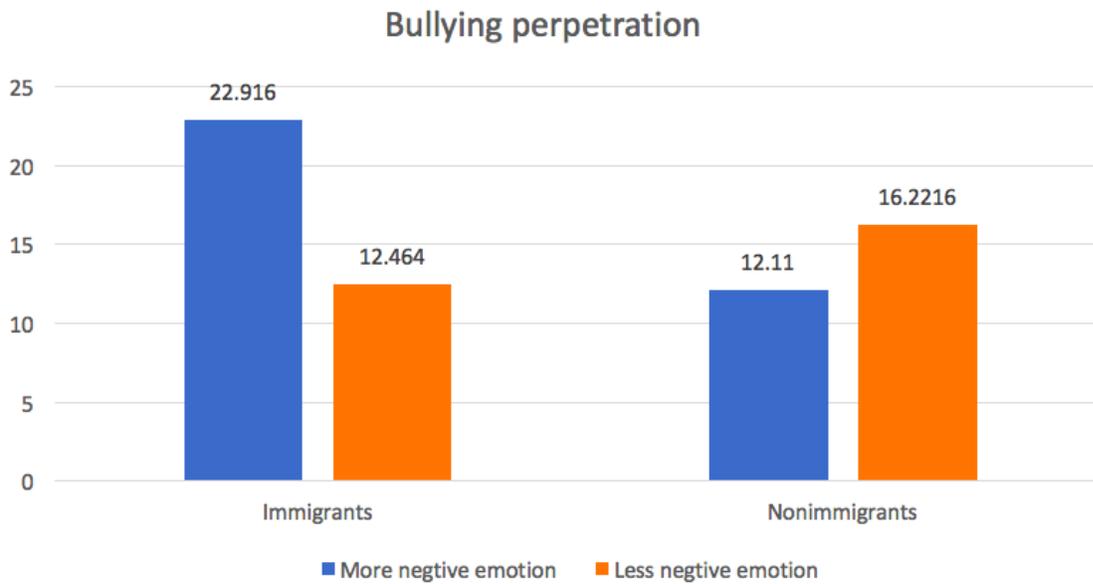


Figure 11. Peer Victimization, Immigration Status, and Bullying Perpetration Bars

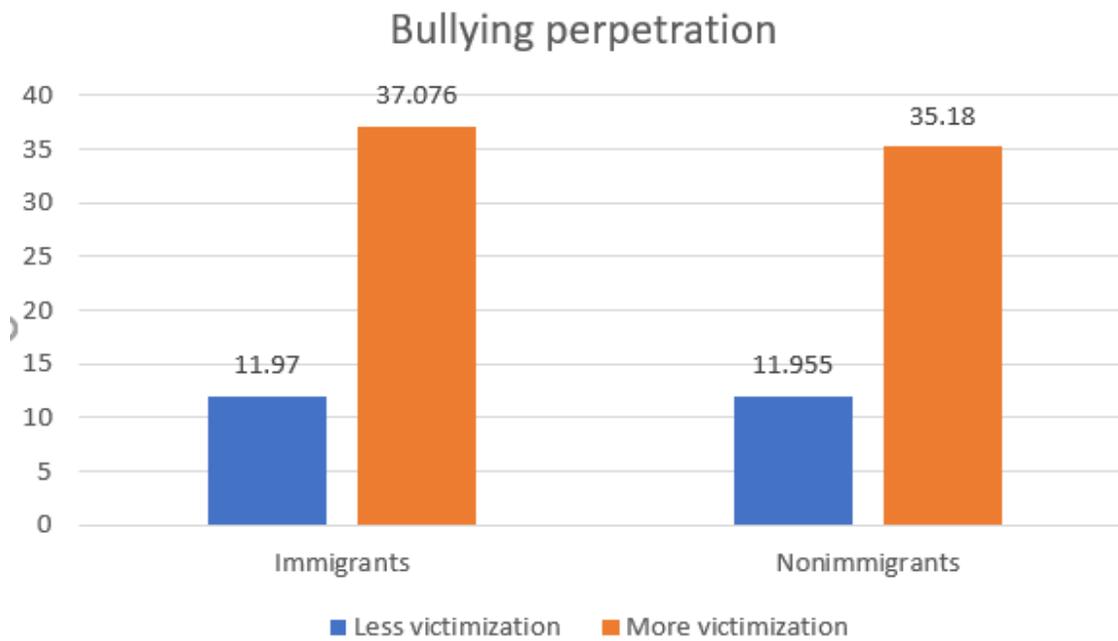


Figure 12. Negative Emotions, Immigration Status, and Bullying Perpetration Histogram

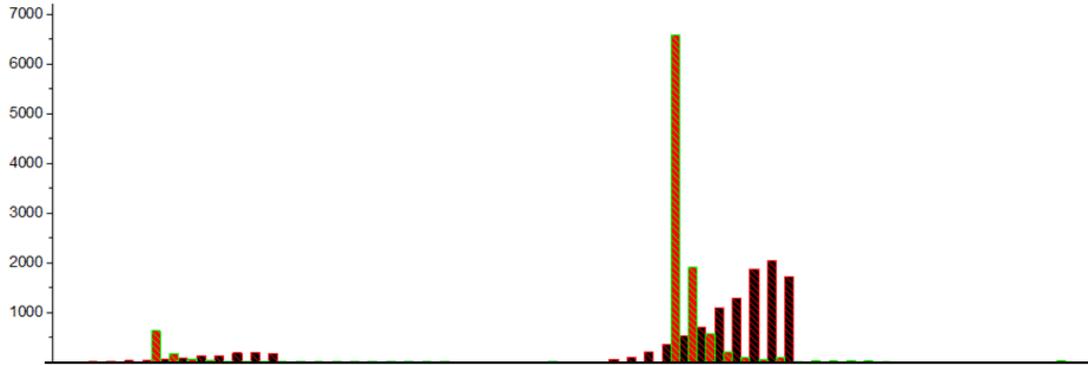


Figure 13. Peer Victimization, Immigration Status, and Bullying Perpetration Histogram

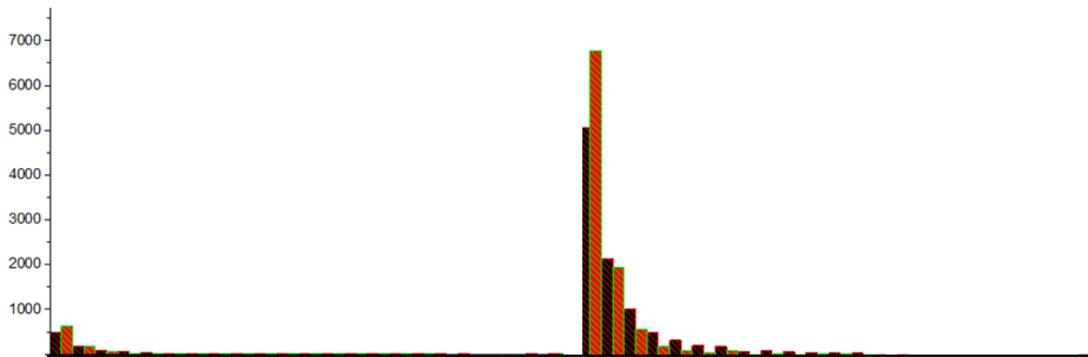


Table 14

Answers to research questions

Research Questions	Answers
Is experiencing parental rejection associated with the frequency of bullying perpetration?	No
Is experiencing peer victimization associated with the frequency of bullying perpetration?	Yes. The more peer victimization one individuals experience, the more likely they will perpetrate bullying.
Is having chronic disease associated with the frequency of bullying perpetration?	No
Is experiencing negative school experience associated with the frequency of bullying perpetration?	Yes. The more negative school experience students have, the more likely they will perpetrate bullying.
Is experiencing financial stress associated with the frequency of bullying perpetration?	No
Is the relationship between strains and bullying perpetration mediated by negative emotions?	No. But <i>negative emotions</i> was tested to be a significant independent variable. The more negative emotions a student has, the more likely he/she will perpetrate bullying.
Do the effects of strains and negative emotions on bullying perpetration differ based on immigration status?	Yes. Immigrants who reported more negative emotions report more bullying behaviors than those immigrants who report less negative emotions. Nonimmigrants experiencing more negative emotions reported less bullying perpetration while those experiencing less negative emotions reported slightly more bullying perpetration. For both immigrants and nonimmigrants, those experiencing more peer victimization reported a higher level of bullying perpetration. However, the relationship is more dramatic for immigrants.

CHAPTER 5 – DISCUSSION AND IMPLICATIONS

Summary of Findings and Discussion

This study found that bullying is associated with negative emotions, being Hispanic, experiencing victimization, having negative school experience and being U.S. born. The association between negative emotions, peer victimization, and bullying perpetration varied across different immigrant status groups. Compared to their White peers, Hispanic students are more likely to perpetrate bullying behaviors. This calls for more attention to the bullying behaviors demonstrated by Hispanic students. Students who are bullied by their peers are more likely to bully others than those who did not report peer victimization experiences. When dealing with an anti-bullying program, the helping professions need to keep this in mind. The helping professions should be aware that the perpetrators might have been bullied before, and the incorporation of healthy coping strategies holds importance in preventing bully victims from becoming future bullies. The more negative school experience individuals have, the more likely they are to bully their peers. Therefore, improving the school climate and creating a welcoming and friendly school environment might be helpful to reduce bullying incidents. Students reported more negative emotions are more likely to conduct bullying perpetration. This indicates that the incorporation of anger management and other skills for coping with negative emotion are important for a successful anti-bullying intervention. In addition, according to Agnew (2001), these factors are unjust in nature. The social work profession places strong emphasis on social justice. Therefore, it is important for social workers to make efforts to deal with these risk factors with the aim of improving social justice.

Results in terms of peer victimization and negative school experience were generally consistent with the findings of previous researchers and GST (Agnew, 2006). Students who were bullied by their peers and who reported more negative school experience were more likely to emerge as bullying perpetrators. Contrary to my expectations, the mediating role of negative emotions was not supported by this study. However, negative emotion significantly predicated bullying perpetration. Students with more negative emotions generally reported more bullying perpetration behaviors. This finding is consistent with existing research (Champion, 2009; Hein et al., 2015; Rieffe et al., 2012).

GST identified chronic disease as a strain, which could result in delinquency and bullying perpetration (Agnew, 2006). Based on GST, chronic disease increases the stress level of individuals, and thus increases their likelihood to conduct delinquency as a way to cope with stress. However, using the HBSC dataset, this dissertation study did not provide evidence for the role of chronic disease in predicting bullying perpetration. In fact, previous researchers and GST provided different opinions about the role of chronic disease on bullying, while many researchers reported that individuals with chronic disease are more likely to become bullying victims (Sentenac et al., 2011; Sentenac et al., 2012; Van Cleave & Davis, 2006).

The answers might lie in the nature of bullying. There is power imbalance between victims and perpetrators, and victims are may find it difficult to defend themselves (Olweus, 1993). Students with chronic disease are generally physically weaker than their peers without chronic disease, making them more vulnerable to becoming victims.

This study didn't find the linkage between financial resources and bullying perpetration, which is inconsistent with GST. I used low financial resources as an approximation to measure financial stress. However, the two constructs are not necessarily the same. Having limited

financial resources might not mean that a family is experiencing financial stress. In future studies, more accurate measures of financial stress can help better assess its impact on bullying perpetration.

Contrary to my expectations, students experiencing more parental rejection did not report more bullying perpetration than their peers who reported less or no parental rejection. This might be because the existence of other social support factors that buffered the impact and stress created by parental rejection. For instance, close friends might provide emotional support and help to cope with the negative emotions and stress created by parental rejection. In future studies, researchers should examine the effect of social control factors to assess how risk factors and protection factors work together.

Implications

Bullying mechanism implication.

Although the study cannot determine causal relationships or trends over time, the use of a nationally representative data set offers the ability to paint a reasonable picture of bullying perpetration in the United States, and its associations with different types of strains including parental rejection, abusive peer relations, negative school experience, financial stress/poverty, and chronic disease. Such findings hold certain implications for policymakers, educators, and social workers, especially those who work closely with bullying issues. Accumulating research indicates that bullying is moving beyond the interaction between perpetrators and victims and is posited within larger systems including peers, families, and schools, becoming a complex social dynamic (Craig, Pepler, & Atlas, 2000). In particular, the study can provide knowledge to help policymakers, educators, and social workers approach their anti-bullying goal by reducing different strains which could potentially result in delinquency and deviancy. One implication of

my dissertation study could be that schools and education systems ought not to strictly punish students who have demonstrated bullying behaviors, which would increase the strains bullies experience. Rather, school climate change and revised anti-bullying programs should be instituted to benefit students and weaken the strains and recurrence of future bullying behaviors. Furthermore, family-based counseling services and parenting classes provided for parents of children who have demonstrated bullying behaviors would certainly reduce the children's delinquency, which could include bullying (Vivona, 2000). In addition, school social workers should work closely with social welfare office and other programs that assist low-income families, making efforts to collaborate on reducing the financial stress of students from low-income families, thus reducing bullying incidents.

Implications for work with immigrants.

Moreover, the study's investigation of the moderating role of immigration status has a number of implications. For instance, it brought lasting attention to barriers and disparities for immigrant students as opposed to assuming they are equally in front of bullying. The research community and the federal government has been paying increasing attention to immigrants; however, there is insufficient attention to their bullying behaviors. The study depicted differences amongst immigrant students and U.S. born students. For example, U.S. born students and immigrant students might experience the same amount of strains, such as negative school experience; however, U.S. born students demonstrate a higher level of bullying perpetration while immigrant students report a lower level of bullying perpetration, which is different from what I expected but is consistent from some previous research. There is inconsistent research about whether immigrants are more likely to become bullying perpetrators or not. The reason might be the limited attention paid to this group and the stigma attached to bullying which might

be particularly strong for immigrants because of their background culture. This stigma might play a role to prevent them to provide true answers to the surveys. In fact, in the HBSC dataset, the data of the bullying perpetrations and victimization are highly skewed, indicating a low bullying prevalence which is lower than the rate reported by current research. Immigrants are subordinated and the balance of power within the educational system remains inequitable. Although this dissertation study could not determine the cause of the disparity, it could contribute to the general strain theory and minority stress theory as well as suggest that immigration status shapes the relationship between strains and delinquency and deviant behaviors. Future scholarly work should foster understanding of how immigration status affects strains, particularly that of students with bullying behaviors, to short-circuit the connection between strains and adjustment among immigration children and youth. Bullying can be conceptualized as a complex phenomenon, and its culturally-appropriate definition holds importance when immigrants are involved because there are specific ethnic, cultural, and racially motivated forms of behaviors and norms necessary to take into consideration (Fandrem et al., 2009). For instance, name calling of overweight people might not fall into the definition of bullying within Chinese culture. Social workers with high cultural competence might be aware of the impact of immigrants' cultural backgrounds when dealing with bullying problems and help them to provide a culturally sensitive definition and understanding of bullying in order to effectively solve the problem. Future research can use in-depth interviews to explore the cultural definitions of bullying among different immigrant status groups.

The dynamics of immigration in the United States is similar to migration children in developing countries, such as China. More studies looking into the differences of bullying in

different countries and cultures are in need. Future studies adopting TIEMSS survey (International math and science study allow for cross-cultural comparisons on bullying.

Implications for practice.

In addition to the above, further development of evidence-based anti-bullying interventions encompassing negative emotions management is called for. This dissertation study demonstrated the mediating role of negative emotions between types of strains and delinquent and deviant behaviors. Practitioners involved in intervention with bully perpetrators should thus work to improve their anger management skills and coping skills, helping them develop competencies in areas like interpersonal communications so they can actively digest these negative emotions in healthy and socially appropriate means. In addition, this study brings implication to the role of immigration status in bullying behaviors and the importance to make culturally relevant anti-bullying programs to this group. Culturally grounded preventions have been popularized in recent years due to its better chance of being implemented and sustained (Castro, Barrera, & Martinez, 2004). Research has shown that interventions specifically designed for a given group or a community are more effective (Castro et al., 2004; Kumpfer, Alvarado, Smith, & Bellamy, 2002) and are more likely to receive support from stakeholders (Castro et al., 2004). Therefore, it is very important to make efforts to improve cultural relevancy of anti-bullying programs to immigrants.

Limitations

The limitations for the study relate to the theoretical framework and the data set chosen. While I looked to general strain theory to guide my hypothesis that negative emotions mediate the effects of strains, including parental rejection, financial stress, victimization, and negative school experience on bullying perpetration, alternative social mechanisms may link these strains

to bullying perpetration. Social learning variables, for example, could be employed to understand bullying behavior of students exposed to peers' bullying behavior. Future studies should incorporate other potential mediating factors in adjustment problems of students experiencing strains.

The HBSC 2009-2010 did not identify the details of students' immigration status. It is possible that many children were born outside of the US while their parents were traveling in foreign countries, in which case they cannot be categorized as traditionally defined immigrants. Born in a foreign country with U.S. citizen parents would certainly put the child into the situation traditional immigrants would face, which would include but not limited to: language barrier, unfamiliar with social norms, lack of social recourse, increased strains, and insufficient legal coping resources when encountering strains. In such a case, immigration status would not influence the relationship between strains and bullying perpetration. Another example would be a child who was born in the United States while their foreign parents were traveling in the US and returned to their country shortly after the birth of the child. In this case, even though the child is born in the United States and is not categorized as an immigrant, they might have the same or similar barriers and disparities that normal immigrants face. Therefore, inclusion of parental immigration status and place of residency in the future would help to more comprehensively and precisely evaluate the immigration status of the participants, and therefore understand its role in moderating different relationships that interest the researchers.

The HBSC 2009-2010 dataset used Hispanic as a racial category. Yet, federal policies tend to treat Hispanic as a category of ethnicity instead of race. In fact, someone of Hispanic ethnicity can identify as any race. In this study, Hispanic participants were compared to their White peers. However, there are individuals who identify as White and Hispanic. Therefore, this

is a limitation on the study. Future studies might want to take this into consideration at the data collection stage.

In addition to the above limitations, the use of cross-sectional data prevents assessing for causal relationships. The data violates the assumption of linearity. Also, the data limits the investigation of whether abusive peer relations relate to bullying perpetration or if bullying perpetration affects abusive peer relations. It also limits the examination of whether negative school experience affects bullying perpetration or if bullying perpetration affects negative school experience. Moreover, the use of secondary data can exclude certain groups. For example, individuals with negative school experience who have a high absence rate may not be present at the date when the questionnaire was administered and therefore excluded from the sample. Furthermore, individuals with chronic disease might be absent for a doctor visit. Their chronic disease has impacted their school attendance and performance, which could be identified as a source of strain that could potentially lead to forms of delinquency and deviant behaviors. These types of samples might have stronger need to be included in the study to help illuminate the relationship between strains and bullying perpetration. In addition, instead of adopting statistically more powerful methods to test for mediation effects, such as using the PROCESS macro created by Andrew Hayes, or path analysis, this study used an indirect method to test the mediating effect which is widely used in the literature. Future research might want to utilize more sophisticated methods.

Despite these limitations, however, this study has importance as one of the very first to pursue evaluation of the impact of strains on students' bullying perpetration, and how immigration status would moderate this relationship.

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APPENDIX

IRB Approval



September 15, 2017

Fan Yang
School of Social Work
Box 870314

Re: IRB: EX-17-CM-057 "Disparities in Bullying: The Role of Immigration Status on Strains and Bullying Behaviors"

Dear Fan Yang:

The University of Alabama Institutional Review Board has granted approval for your proposed research.

Your application has been given exempt approval according to 45 CFR part 46.101(b)(4) as outlined below:

(4) Research involving the collection or study of existing data, documents, records, pathological specimens, or diagnostic specimens, if these sources are publicly available or if the information is recorded by the investigator in such a manner that subjects cannot be identified, directly or through identifiers linked to the subjects.

This approval expires on September 14, 2018. If the study continues beyond that date, you must complete the appropriate portion of the IRB Renewal Application. If you modify the application, please complete the Modification of an Approved Protocol Form. Changes in this study cannot be initiated without IRB approval, except when necessary to eliminate apparent immediate hazards to participants. When the study closes, please complete the IRB Study Closure Form.

Should you need to submit any further correspondence regarding this application, please include the assigned IRB application number.

Good luck with your research.

Sincerely,

Tables and Graphs

Figure 14. Scatter Plot of Logperp

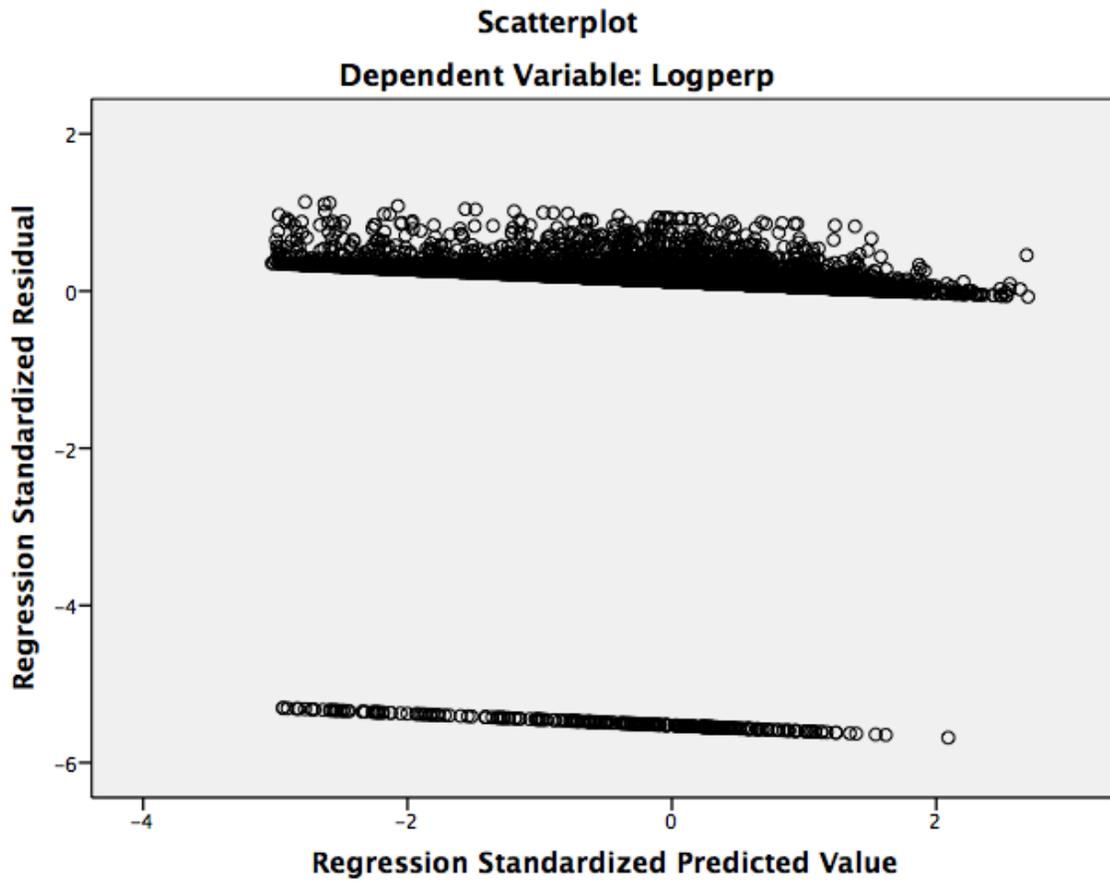


Figure 15. Scatter Plot of Perpetration and parental rejection

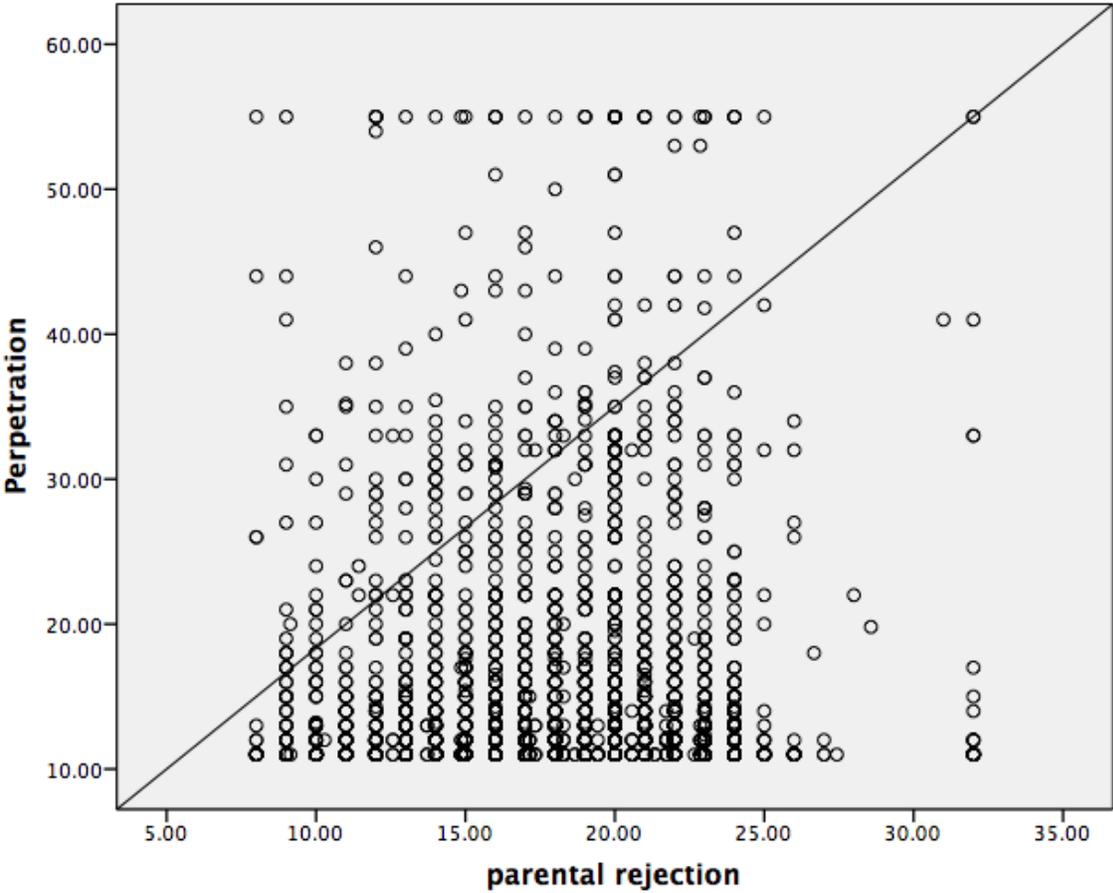


Figure 16. Scatter Plot of perpetration and present feeling about school

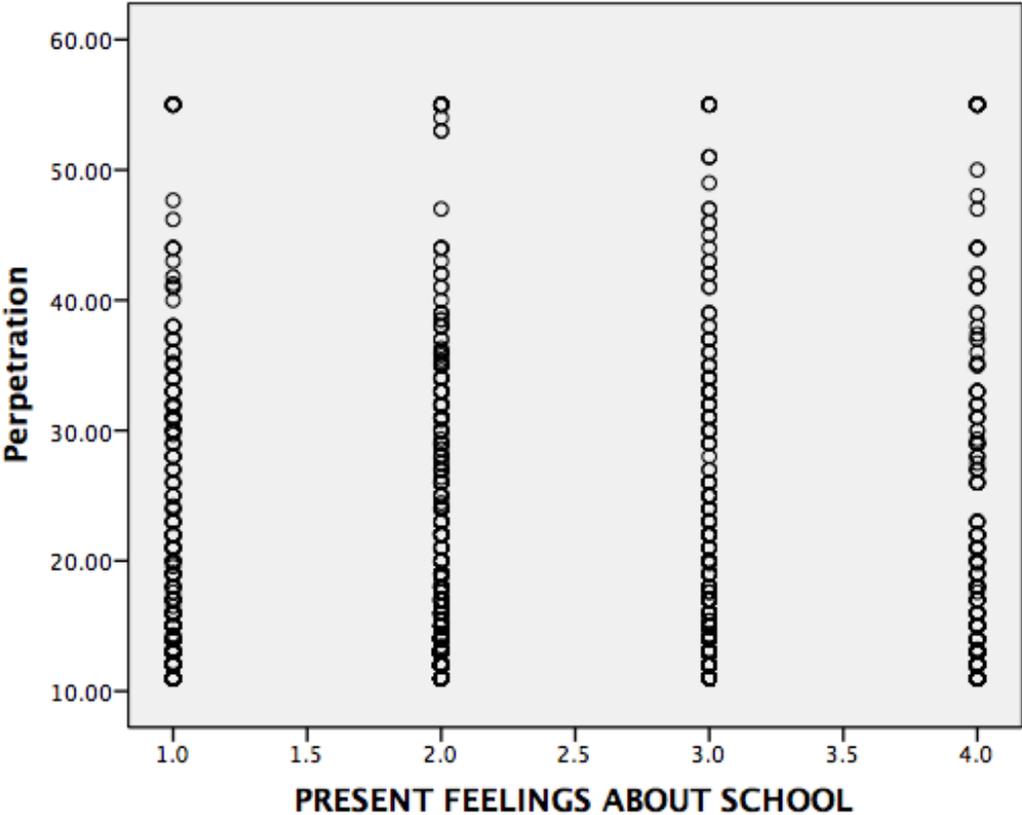


Figure 17. Scatter Plot of perpetration and victimization

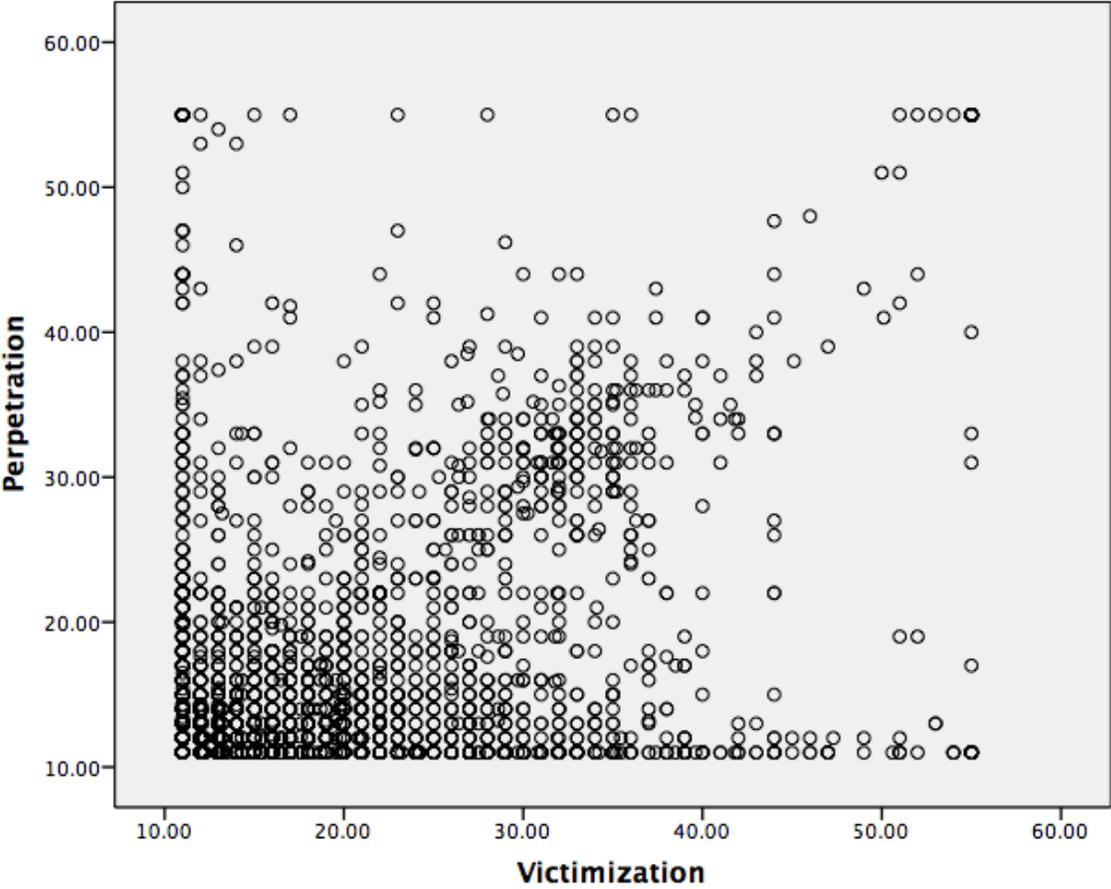
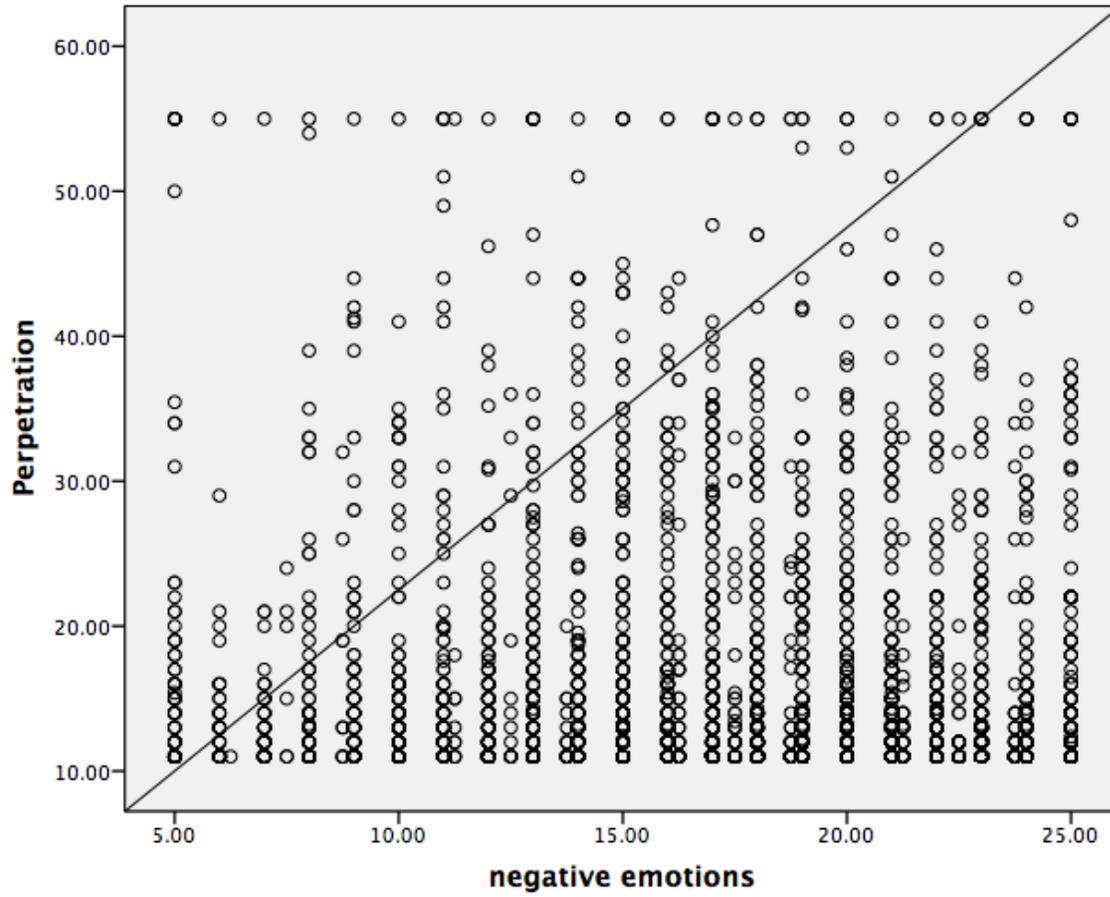


Figure 18. Scatter Plot of negative emotion and perpetration



Indexes

Bullying Perpetration

Levels of bullying perpetration is measured with an index composing 11 items. The specific items were:

- (1) How often bullied others: called names/teased
- (2) How often bullied others: left out of things
- (3) How often bullied others: hit/kicked/pushed
- (4) How often bullied others: told lies about them
- (5) How often bullied others: for their race/color
- (6) How often bullied others: for their religion
- (7) How often bullied others: made sexual jokes to them
- (8) How often bullied others: using a computer/email
- (9) How often bullied others: using a cell phone
- (10) How often bullied others: using a computer/email outside of school
- (11) How often bullied others: using a cell phone outside of school

Peer Victimization

Levels of bullying victimization is measured with an index composing 11 items. The specific items were:

- (1) How often was bullied: called names/teased
- (2) How often was bullied: left out of things
- (3) How often was bullied: hit/kicked/pushed
- (4) How often was bullied: others lied about me

- (5) How often was bullied: for my race/color
- (6) How often was bullied: for my religion
- (7) How often was bullied: made sexual jokes to me
- (8) How often was bullied: using a computer/email
- (9) How often was bullied: using a cell phone
- (10) How often was bullied: using a computer/email outside of school
- (11) How often was bullied: using a cell phone outside of school

Parental Rejection

Parental rejection is measured with an index composing 8 items. The specific items were:

- (1) Parent/Guardian: helps me as much as I need
- (2) Parent/Guardian: lets me do the things I like doing
- (3) Parent/Guardian: is loving
- (4) Parent/Guardian: understands my problems
- (5) Parent/Guardian: likes me to make own decisions
- (6) Parent/Guardian: tries to control everything I do
- (7) Parent/Guardian: treats me like a baby
- (8) Parent/Guardian: makes me feel better when upset

Negative Emotions

Levels of negative emotions are measured with an index composing 5 items. The specific items were:

- (1) Feeling last week: sad
- (2) Feeling last week: lonely
- (3) Past 6 months how often had: low feelings
- (4) Past 6 months how often had: irritability

(5) Past 6 months how often had: feeling nervous

Family Socioeconomic Status (SES)

Family socioeconomic status is derived from, “What is your mother or father’s occupation?” Family SES is calculated by taking the mean of the mother’s and father’s reported SES.