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Bullying of Linguistically Diverse Learners: Results from the Youth Risk Behavior Survey

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BULLYING OF LINGUISTICALLY DIVERSE LEARNERS:

RESULTS FROM THE YOUTH RISK BEHAVIOR SURVEY

A Dissertation

Submitted to the School of Education

Duquesne University

In partial fulfillment of the requirements for

the degree of Doctor of Philosophy

By

Jenna Woodarek, M.S.Ed

December 2018

DUQUESNE UNIVERSITY
School of Education
Department of Counseling, Psychology, and Special Education

Dissertation

Submitted in partial fulfillment of the requirements for the degree
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BULLYING OF LINGUISTICALLY DIVERSE LEARNERS:
RESULTS FROM THE YOUTH RISK BEHAVIOR SURVEY

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ABSTRACT

BULLYING OF LINGUISTICALLY DIVERSE LEARNERS:

RESULTS FROM THE YOUTH RISK BEHAVIOR SURVEY

By

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December 2018

Dissertation supervised by Dr. Laura Crothers

Bullying is a serious phenomenon yielding significant consequences for youth who are victimized, often targeted due to their perceived level of difference from their peers. This "otherness" can often be amplified in minoritized populations, especially those which have multiple, cooccurring vulnerabilities to be targets of bullying. After a period of bullying rates decreasing in the US, special interest group inquiries found bullying rates to be on the rise again and reportedly motivated by ethnicity or race, immigrant status, and proficiency in the English language. The present research study aims to expand upon the existing pertinent literature base specific to the bullying experience of Linguistically Diverse Learners (LDL). This study investigated the impact of LDL status, sex, grade, and race on bullying victimization utilizing the 2015 and 2017 data from the national Youth Risk Behavior Survey. These increased bullying patterns were reflected in the results of the 2015 national YRBS data. Significant findings for the 2015 data included LDLs being over two times as likely to be victims of bullying compared

to their non-LDL counterparts. Further, 2015 findings yielded male LDLs being 2.7 times more likely to be victims of bullying than their female LDL peers and non-LDL counterparts. Both models were accurate but had challenges with questionable overall fit and identification of outliers. No significant results were found in the 2017 data. Potential explanations for these differences in results as well as limitations of the current study and implications for future directions of research are also discussed.

DEDICATION

I dedicate this dissertation to all those that have supported me along this journey in large and small ways, to those that were unwavering in their support, and to those that began with me along this path and are with me in spirit at the conclusion. Finally, this dissertation is dedicated to my students in Cleveland, who continue to inspire me and motivate me every day.

ACKNOWLEDGEMENT

My deepest gratitude to my committee, whose support, guidance, flexibility, and knowledge were not only integral in the dissertation process but also to my development and growth professionally and as a school psychologist. I will carry the lessons I have learned in my career and throughout my life, and, for this, I thank you all.

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CHAPTER I - Introduction

Bullying has become an issue of notoriety due to its pernicious effects. As a result, increased interest and focus on bullying has resulted in significant improvements in bullying prevention and intervention among young people. In the 1990s, Olweus published extensive research that showed that bullying and bullying victimization were increasing. Current rates of bullying illustrate the success of increased attention and intervention with rates plateauing or even decreasing (U.S. Department of Education, 2016; Centers for Disease Control and Prevention, 2017b). However, lower bullying rates do not universally or equally benefit all groups. The changing demographics in the US in conjunction with current events have brought attention to the bullying victimization experiences of minoritized groups, differing from the experiences of predominantly young, white males of the early bullying literature in the 1970s.

Significance of the Problem

The purpose of the study is to investigate bullying victimization as it pertains to the Linguistically Diverse Learner (LDL) students within the US and expand the bullying literature base for this vulnerable group. The term Linguistically Diverse Learner is utilized in this study to represent the diversity of English language development and use in US schools. LDLs include those students whose first language or language spoken in the home environment is a language other than English and has had a significant impact on the level of proficiency in the English language. A variety of terms have been used to label this population, such as English Language Learner (ELL), English as a Second Language (ESL), or English Learner (EL) among other terms that are specific to educational categories, have become politicized, or are deemed insensitive to the minoritized population. The term LDL represents the diversity of bilingual students but additionally encompasses bidialectal students as well as students with speech or

language disabilities, whose use of the English language may also diverge from the standard academic English taught in schools. Language use is a complex and culturally-sensitive issue. Though a majority of the limited literature base is specific to ELLs, LDL is utilized for the present study to represent this largely heterogeneous group of students in the US.

Though extremely limited, the extant literature supports youth with diversity in English language development to be a risk factor for bullying victimization. For example, one study found that students identified as Mexican immigrants indicated the primary factor of vulnerability to bullying to be the language barrier (Mendez, Bauman, & Guillory, 2012). First generation immigrant adolescents similarly experienced bullying victimization and peer aggression at significantly higher rates when speakers of non-official languages were compared to their third generation and native-born counterparts (Pottie, Dahal, Georgiades, Premji, & Hassan, 2015). Additionally, students of immigrant families' competence in the local language was positively associated with peer acceptance, signifying that the greater the student's language proficiency in the local language, the greater the likelihood the student was accepted by peers (von Grünigen, Perren, Nägele, & Alsaker, 2010). During the 2014-2015 school year, the National Center for Education Statistics (NCES) reported an estimate of 4.6 million students in the US identified educationally as ELLs. These statistics place ELLs at 9.4% of the student population, an increase from 9.1% measured in the 2004-2005 data. As one of the fastest growing segments of the population, the bullying experiences of LDL populations requires further study to inform interventions to maintain a safe school environment for all students.

The significance of the current study is a focus on the bullying experience of a growing segment of students in the US who are learning the English language. As previously mentioned, the current research base is extremely limited focusing on the bullying experiences of those who

lack proficiency in the dominant local language. Consequences for victims of bullying can be severe and further investigation is necessary to understand the commonalities or differences of bullying victimization for this specific population.

Theoretical Basis – Definition of Bullying

Since Olweus' first book published on bullying, *Aggression in the Schools: Bullies and Whipping Boys*, there have been two differing directions of bullying research based on the conceptualization of bullying or aggression. Olweus (1993, 1995) provides specificity to the definition of the bullying phenomenon that he began to study in the 1970s: "A student is being bullied or victimized when he or she is exposed, repeatedly and over time, to negative actions on the part of one or more other students" (p. 9). The act of bullying must therefore be experienced several times and extended over a period of time to meet this definition. Further specificity is provided by cutoff points for the "repeated negative acts" to include instances of two to three times a month (Solberg & Olweus, 2003). The cutoff point allows students that are involved in bullying and those that are not involved to differ clearly and markedly (Solberg & Olweus, 2003).

The bullying act must also be perceived by the victim as being a negative experience, referring to attempted or successfully carried out injury or discomfort intentionally inflicted on another (Olweus, 1993). An additional criterion of the definition involves the imbalance of power between the bully or bullies and victim. Olweus (1995) describes a strength imbalance or power imbalance that is asymmetrical, making it difficult for the victim to defend her or himself and placing the victim in a position of relative helplessness. Finally, the definition of bullying should include that the negative actions associated with bullying are often unprovoked and proactive, rather in defense of oneself (Griffin & Gross, 2004).

Bullying in children and adolescents, which is the most common form of school violence, is a problem that affects approximately 20% of youth during their school careers (Nansel et al., 2001). Various forms of bullying have been documented in the extant literature base, including the direct forms of physical and verbal bullying, indirect forms such as relational and social aggression, and cyberbullying (Olweus, 1995; Smith et al., 2008; Wang, Iannotti, & Nansel, 2009). In its direct form, bullying involves physical interactions such as hitting, kicking, punching, pinching, slapping, tripping, stealing from or restraining, and destroying property (Griffin & Gross, 2004; Olweus, 2003). Verbal bullying is also considered to be a form of direct bullying as it often manifests itself overtly but is observed and documented less frequently because the consequences are less evident. These behaviors involve name calling, teasing, and insults about intelligence or attractiveness (Griffin & Gross, 2004). Furthermore, researchers have found that the most common victimization involves being belittled about looks or speech (Nansel et al., 2001).

While boys have been found to use direct forms of aggression – particularly in early childhood – indirect forms of bullying have been more often associated with girls and include behaviors like spreading rumors or social exclusion (Archer & Coyne, 2005; Björkqvist, Lagerspetz, & Kaukiainen, 1992). Indirect forms of bullying are thought to include both relational aggression, in which the bullying behaviors occur in a dyad, and social aggression, in which the social group is used as the vehicle for harm (Crothers, Schreiber, Field, & Kolbert, 2009). Finally, cyberbullying has been defined as an intentional, aggressive, and repeated behavior over time against the victim with little means of defending her or himself against an individual or a group through electronic means – most typically through phones or the internet (Smith et al., 2008).

Some research has focused on variables associated with being the victims of school bullies. Indeed, researchers have uncovered characteristics or conditions that render some children particularly vulnerable to being bullied by peers, as there is evidence that suggests that bullying victimization may affect vulnerable populations disproportionately. In the US, one such variable appears to be speaking a language other than English. Student populations that speak languages other than English are growing at a rate that is accelerating in the US and abroad. These demographic changes, coupled with an increasing national focus on bullying and an ever-divisive political climate, has suggested a need to further investigate the effects of bullying and victimization on specific populations, such as students with diverse English language skills, linguistically or dialectally. Further research is necessary to better understand and identify vulnerable populations that are at a higher risk for bullying victimization for educational personnel to identify and implement effective interventions to protect and support these populations.

An individual's language status is complex and cannot be isolated from other bullying risk factors such as race and/or ethnicity, acculturation level, and family dynamics, such as immigration from the country of origin, without reducing the individual's lived experience. Since these factors are difficult to realistically consider in isolation, the role of the factors should be addressed together. The intersectionality of factors affecting LDL youth present uniquely complex influences that, in combination, may foster greater vulnerabilities for bullying and victimization to occur than for any one factor alone.

In the extensive body of literature on bullying, researchers have investigated the role of race and ethnicity as well as the effects of variables such as immigration status and family origin on bullying victimization. However, those children of minority backgrounds with an additional

intersecting characteristic of lacking communication skills in the dominant language of the region also may be at an increased risk for bullying victimization and have been understudied. For this study, the student's self-identified level of ability to speak English is interpreted in isolation. However, other factors, such as race and ethnicity, are also considered within the limited scope of the survey questions posed in the Youth Risk Behavior Survey (YRBS), the instrument utilized for this inquiry, and are the focus of a research question posed in this investigation (Centers for Disease Control and Prevention, 2016b).

Bullying and Linguistically Diverse Learners

Students who are emerging as bilingual experience an array of both communication challenges and an ethnic or cultural "otherness" that differ from the experience of their English proficient (EP) peers. The "otherness" is especially notable in the changing demographics in the US – of which language is an especially important issue. Bullying of students based on language ability can occur within any ethnic or cultural group typically associated with limited proficiency in the dominant local language. A limited but growing body of research has sought to identify the lack of proficiency in the dominant language as a risk factor for youth's development both socially and behaviorally. Lacking language proficiency yields challenges to development socially and behaviorally and in conjunction with other factors of "otherness;" such as family of origin differences racially, ethnically, and with regards to immigration; cultivate a greater susceptibility for bullying victimization for LDL youth.

First generation immigrant adolescents have been found to experience bullying victimization and peer aggression at significantly higher rates than speakers of non-official languages compared to their third generation and native-born counterparts (Pottie et al., 2015). When immigrant adolescents spoke non-official languages, or languages that differed from the

primary language spoken in their host country, the risks of being victims of violence were greater (Pottie et al., 2015). English proficiency in early adolescence similarly relates to perceived experiences of discrimination (Kim, Wang, Deng, Alvarez, & Li, 2011). In addition, risk was potentially aggravated by high academic standing (Pottie et al., 2015). Ethnic diversity within schools, safe schools, and family cohesion served as alleviating factors for risks of violence (Pottie et al., 2015).

Research Questions and Hypotheses

The extensive body of research on bullying has investigated the role of race and ethnicity as well as immigration and family origin on bullying victimization. However, those children of minority backgrounds with an additional intersecting characteristic of lacking communication skills in the dominant language appear to be at increased risk for bullying victimization. In the current research, I investigate and address the factor of emergent bilingualism and its association with bullying victimization, a topic that has become increasingly relevant in the current political climate and with relative spikes in reported bullying in schools and community spaces. In response to the need to understand the relationship between LDL status in children and adolescents and bullying, the following research questions and hypotheses were developed.

Research question 1: Do Linguistically Diverse Learners have a greater likelihood of being victims of bullying?

Hypothesis 1: Students that are LDL will report higher ratios of Bullying Victimization than non-LDL students.

Research Question 2: Does the sex of Linguistically Diverse Learners impact the likelihood of being victims of bullying?

Hypothesis 1: Male students that are LDL will report higher ratios of Bullying

Victimization than female students that are LDL.

Research Question 3: Does the grade level of Linguistically Diverse Learners impact the

likelihood of being a victim of bullying?

Hypothesis 1: Ninth grade students that are LDL will report higher ratios of Bullying

Victimization than non-LDL students in the higher grade levels.

Research Question 4: Does the racial or ethnic identity of Linguistically Diverse Learners

impact the likelihood of being victims of bullying?

Hypothesis 1: Students identifying as Nonwhite and LDL will report higher ratios of

Bullying Victimization than their White LDL peers and White and Nonwhite non-LDL

counterparts.

Summary

In this chapter, I reviewed the most pertinent literature regarding the vulnerability of LDL

children and adolescents to bullying by peers. I explored the definition of bullying, types of

bullying, and the effects of bullying for youth. I also reviewed some of the psychological

literature regarding individuals' language status and risk factors for peer harassment, such as race

and/or ethnicity, acculturation level, and family dynamics. In the next chapter, I will expand on

these topics to provide a more comprehensive portrayal of the literature base that relates to the

research questions proposed in this investigation.

CHAPTER II – Literature Review

Bullying

Relatively few studies exist investigating the risk of bullying for Linguistically Diverse Learners (LDLs). Along with the related but independent vulnerability of being non-native born in the US or belonging to a family with non-US origins, LDLs' vulnerability to bullying can be described as relating to a condition of "otherness", which appears to be related to bullying victimization. In this chapter, I discuss the empirical literature base regarding bullying in children and adolescents and the language acquisition process for students learning the dominant local language, and then, review the limited findings regarding the experiences of bullying for LDL students.

Theoretical Basis

Definition of Bullying

Bullying in childhood has been described in the popular literature long before the 20th century. Though bullying among children has come to be considered a widespread and longstanding experience associated with childhood and growing-up, the systematic research of bullying only began in the 1970s with a focus mainly on Scandinavian schools (Olweus, 2003). The bullying experiences of schoolchildren began to gain international focus in the 1980s and 1990s, gaining traction in research institutions and education in the US, as well (Olweus, 2003). Since then, there has been some consensus but also some disagreement on the definition of bullying among researchers and notable differences between the perceptions of bullying reported by children compared to accepted definitions by adults and the research community.

Since Dan Olweus' first book published on bullying, *Aggression in the Schools: Bullies and Whipping Boys*, in 1978, there have been two differing directions of bullying research based

on the conceptualization of bullying or aggression with a significant degree of overlap. One line does not emphasize a power imbalance and focuses on victimization and a broader concept of aggression by peers. The other focuses on victimization occurring within the context of a relationship or situation of bullying specifically. Olweus (1993, 1995) provides specificity to the definition of the bullying phenomenon that he began to study in the 1970s: "A student is being bullied or victimized when he or she is exposed, repeatedly and over time, to negative actions on the part of one or more other students" (p.9).

The act of bullying must therefore be experienced several times and extended over a period of time to meet this definition. Further specificity is provided by cutoff points for the "repeated negative acts" to include instances of two to three times a month (Solberg & Olweus, 2003). The cutoff point allows students that are involved in bullying and those that are not involved to differ clearly and markedly (Solberg & Olweus, 2003).

The bullying act must also be perceived by the victim as being a negative experience. Otherwise, the act can be defined as negative in valence but if it is not perceived as negative to the victim, it does not meet the definition of bullying. Like the definition of aggressive behavior, negative actions refer to attempted or successfully carried out injury or discomfort intentionally inflicted on another (Olweus, 1993). These can include words, physical contact, or behaviors without the use of words or physical contact (Olweus, 1993). Negative actions include but are not limited to physicality, making faces, inappropriate gestures, inappropriate words and language, and intentional exclusion from a peer group (Olweus, 1995). Overall, the act of bullying requires the intent to cause harm to others (Archer & Coyne, 2005).

An additional criterion of the definition is the imbalance of power between the bully or bullies and victim. Olweus (1995) describes a strength imbalance or power imbalance that is

asymmetrical, making it difficult for the victim to defend her or himself and placing the victim in a position of relative helplessness. The victim can be physically weaker than the bully or the power differential may be expressed in other ways, perceived or actual, such as mental strength or social prowess. The power imbalance can also be expressed in terms of social structures involving race, ethnicity, and religious minorities, sexual orientation and gender expression minorities, in terms of ableism involving students with disabilities or delays, or appearance such as students that do not meet conventional norms for beauty or weight.

Additionally, the definition of bullying should include that the negative actions associated with bullying are often unprovoked and proactive (Griffin & Gross, 2004). The Olweus definition of bullying also includes the concept of proactive aggression, or aggression that is seemingly unprovoked and without a perceived threat by the victim toward the aggressor(s; (Olweus, 1993).

When clearly defined, the current research utilizes articles with bullying definitions congruent with the Olweus definition and cutoff points for repeated acts reflected in the Solberg and Olweus (2003) and Solberg, Olweus, and Endresen (2007) studies. The survey and dataset utilized for the current research contains items that specifically refer to bullying and cyberbullying in lieu of items referencing aggression, consistent with defining bullying with more specificity than general aggression. The YRBS wording within the questionnaire provides the definition consistent with the Olweus definition indicating the need for repeated aggressive acts with the presence of a power imbalance (Centers for Disease Control and Prevention, 2015; Centers for Disease Control and Prevention, 2017a). Though not two to three times a month consistent with the findings of Solberg and Olweus (2003), a cutoff point is provided in the YRBS for the past 12 months for the repeated victimization to occur.

Bullies, Victims, and Bullying Subtypes

Bullies/Victims/Bully-Victims. Bullies are the aggressors in the bully-victim relationship. Bullies are involved in the perpetration of negative actions that constitute bullying – either through direct actions or through others whom they direct to carry out the negative acts on their behalf (Olweus, 1993). The victim is therefore the target and recipient of the negative acts. Bully-victims, also referred to in the literature as provocative victims, are a blended group of individuals that are both recipients of bullying victimization and perpetrators of negative acts against others. Though a small portion of the total student population, bully-victims should generally be seen and treated statistically as a distinct subgroup (Solberg et al., 2007).

Direct vs. Indirect Aggression. Direct bullying includes attacks against the victim that are visible and unobscured verbal and physical attacks (Olweus, 1993). Direct aggression is overtly confrontational, including aggressive acts that are carried out with both bully and victim being essentially face-to-face in the same time and place (Griffin & Gross, 2004). Direct aggression experiences can be separated into two main groupings: physical aggression and verbal aggression. Physical aggression can include pinching, slapping, or restraining others (Olweus, 1993). Verbal aggression, on the other hand, includes name-calling, teasing about one's appearance, and/or insulting one's level of attractiveness or intelligence (Griffin & Gross, 2004). The most common verbal victimization targeted speech and looks (Nansel et al., 2001).

Indirect bullying is more covert and includes intentional social exclusion and isolation that are typically the less visible form of bullying (Olweus, 1993). Conversely, indirect aggression does not have the same face-to-face quality, with aggressive acts occurring with distance from the victim in both time and place. Indirect aggression is the form of bullying with the greatest amount of discourse in the research community regarding delineation of subtypes

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and definitions. Generally, three areas of indirect aggression have been identified as social aggression, relational aggression, and cyberbullying – with cyberbullying emerging as its own distinct type of bullying. Cyberbullying has been defined simply as bullying by an individual or a group through electronic means of contact such as through phones or the internet but similarly follows other definitions of bullying in that the act must be intentional, aggressive, and repeated over time against the victim with little means of defending her or himself against the act (Smith et al., 2008). Cyberbullying, though indirect in nature, does not follow the same patterns as other subtypes of bullying (Lattanzio, 2018). Due to its growth as a distinct form of bullying, cyberbullying is not a focus of the current research.

Though found to be moderately related factors under a broader umbrella, social aggression and relational aggression are differentiated as separate constructs (Crothers et al., 2009). Social aggression's distinct qualities include trying to manipulate a group of people to carry out a harmful act against a selected victim (Archer & Coyne, 2005). The socially aggressive bully is therefore intending to affect or damage the group membership and social standing of the victim (Crothers et al., 2009).

Relational aggression is not overtly confrontational but is, instead, covert in nature (Griffin & Gross, 2004). Relationally aggressive acts can include but are not limited to embarrassment in a social setting, keeping secrets, spreading rumors, rejection or exclusion from a social group, and/or making faces or gestures (Griffin & Gross, 2004; Olweus, 1993). Relational aggression is therefore the more direct of the two forms in that the bully is threatening an individual relationship with the victim as to force the compliance of the victim (Archer & Coyne, 2005). Findings from Crothers et al. (2009) further distinguish relational aggressive

bullies from those using social aggression in that relational aggression is unique to influencing an individual they are in a dyadic relationship with in contrast to a group of individuals.

Prevalence of Bullying and Victimization

For victims, prevalence data can at times be skewed by victims that are also bullies. Prevalence data for victims that exclude bully-victims represents 8.3% of the population (Solberg & Olweus, 2003). Of all students with age groups and sex combined, the prevalence of victims was 10.1% (Solberg & Olweus, 2003). The prevalence data for bullies can similarly be skewed by bullies that are also victims. The prevalence for bullies with bully-victims excluded was 4.8% (Solberg & Olweus, 2003). For all students with all age groups and sex combined, the rate rose to 6.5%. The prevalence of bullies was found to be two to three times higher for boys than girls with boys at 9.7% compared to only 3.2% of girls (Solberg & Olweus, 2003). The prevalence data for bully-victims is relatively small when compared to the population of bullies and victims overall. The prevalence of bully-victims was calculated by combining the global measures of "being bullied" and "bullying others" (Solberg & Olweus, 2003). For the combined group, 1.6% of all students fell into the bully-victim group (Solberg & Olweus, 2003).

Prevalence data is also particularly useful when considering the percentage of students that are involved in bullying or victimization in a school. The total percentage of students involved in bully/victim problems at school was the greatest for boys in the age 14/grade 8 group with rates around 22.3% (Solberg & Olweus, 2003). Pure victims accounted for 10.2% of students involved with pure bullies at 10.4% (Solberg & Olweus, 2003). Bully-victims were 1.7% of students involved in bully/victim problems at school (Solberg & Olweus, 2003). For grades 5 and 6, around 15% of students were involved with bully/victim problems at school. For

males, involvement in bullying and victimization problems increased with age (Solberg & Olweus, 2003).

According to the trends measured using the School Crime Supplement (SCS) of the National Crime Victimization Survey, 2013 levels reached their lowest point since 2005 with approximately 22% of students aged 12 to 18 reporting experiences of bullying victimization at school (U.S. Department of Education, 2016). The YRBS trends report from 2007 to 2017 found corroborating rates. The decade of YRBS data found bullying victimization prevalence rates at 19% for students bullied at school and 15% for students bullied electronically (Centers for Disease Control and Prevention, 2017b). Nansel et al. (2001) found similarly staggering rates of bullying involvement, at a rate of almost 30% of the sample reporting moderate or frequent bullying involvement. Those who were bullied or were bully-victims consisted of approximately 17% of the sample (Nansel et al., 2001).

Additional Bullying Factors

Age. Younger students reported being bullied at more frequent rates than older students (Solberg & Olweus, 2003). The downward trend for age was not uniformly linear, however, with a slight spike in the age group for 14 year-olds (Solberg & Olweus, 2003). Age-trend wise, boys tended to decrease in prevalence with age whereas the trend for girls was relatively stable (Solberg & Olweus, 2003). Among middle and high school students, 6th- through 8th-grade students had a higher frequency of bullying than reported by 9th- and 10th-grade students (Nansel et al., 2001).

Sex. For both being perpetrators and victims, males have a greater likelihood than females to experience bullying (Nansel et al., 2001). Boys reported being bullied significantly more than girls with a prevalence of 11.1% compared to the 9.1% reported for girls (Solberg &

Olweus, 2003). For boys particularly, bullying others increased with age (Solberg & Olweus, 2003). The sex differences were evident at each age level, with more male than female bully-victims (Solberg & Olweus, 2003). The prevalence of boy bully-victims was 2.3% compared to 0.9% of girls (Solberg & Olweus, 2003).

The types of aggression used by children similarly differs by sex. While boys have been found to use direct forms of aggression – particularly in early childhood – indirect forms of bullying have been more often associated with girls and include behaviors like spreading rumors or social exclusion (Archer & Coyne, 2005; Björkqvist et al., 1992)

Linguistically Diverse Learner Populations

Changing Demographics

However dense the bullying literature base, it is limited regarding the bullying victimization of students learning the primary, or official, language of the country where they reside. A simple Google search will provide tips and toolkits to help protect and support students with limited English proficiency a well as a growing number of national surveys conducted by special interest groups. Educational personnel who work closely with these students endorse the prevalence of bullying toward those who are developing language skills in the English within the US. However, empirical studies in which researchers have investigated bullying in this population specifically are few and far between. During the 2014-2015 school year, the National Center for Education Statistics (NCES) reported an estimate of 4.6 million students in the US identifying as ELLs, or students that participate in programs that assist in attaining greater English proficiency. These statistics place ELLs at 9.4% of the student population, an increase from 9.1% measured in the 2004-2005 data. With growing numbers of LDL youth and families each year, the need for a more comprehensive literature base continues.

The overall data from the NCES is not reflective of the experiences of school systems at a smaller level, however, with a range of 1% of students identified as ELLs in West Virginia and a staggering 22.4% of students identified in California. Census data is also reflective of the changing language landscape in today's America. The American Community Survey (ACS), part of the US Census Bureau, collects data on languages other than English that are spoken in the US. The 2011 ACS shows the continued growth of non-English languages spoken in the US, with language diversity that is increasing year to year. Using the 2011 ACS, speakers of languages other than English comprised 21% of the population aged five years and older in the US, with individuals speaking 381 different languages in the home environment.

Linguistic Homogeneism

Despite growing numbers of non-English speaking populations in the US, the status of LDLs remains unsavory to many members of the dominant culture. There is an increased risk associated with being a non-English speaker, which has roots in the societal view of homogeneism. In homogeneism, differences are perceived as dangerous and the best society exists without intergroup differences (*Language Ideologies: Practice and Theory*, 1998). The ideal model of society, therefore, has no differences between the discontinuities of descent, history, culture, religion, and language. The ideal model is then monoethnic, monoreligious, monoideological, and monolingual (*Language Ideologies: Practice and Theory*, 1998). In response to a changing world, nationalism is the effort to keep groups as homogenous as possible (*Language Ideologies: Practice and Theory*, 1998). Homogeneity, and preserving it, is a norm across Europe and the US, especially in policies for immigration (*Language Ideologies: Practice and Theory*, 1998). In this way, language can not only unite, but divide populations as well.

Consistent with the presence of discontinuities, individuals can belong to multiple social categories simultaneously (Rakic, Steffens, & Mummendey, 2011a). Many studies on social categorization focus on the use of visual stimuli, though the influence of accent and language on categorization has been widely ignored (Rakic et al., 2011a). Language is a significant component of social categorization and influence the formation of impressions and perceptions (Rakic et al., 2011a). An illustrative example of this is the population found in the European Union. The visual differences between members of the European Union's various countries is much less significant compared to the vast number of languages (Rakic et al., 2011a). Seeing two individuals from two different countries interacting, the difference would not be as clear on appearances alone, but the differences would become very clear after hearing the languages spoken (Rakic et al., 2011a). As the landscape of countries, such as the US, change to accommodate upwards of a fifth of the local population lacking a shared, homogenous identity with the majority culture, resistance to the unwanted change is expected to preserve the status quo and protect against the perceived dangers from those that are dissimilar. In this way, the opportunities for aggression arise and can be advantageous to maintaining power and resist change in a rapidly changing world.

"Otherness" Challenges related to Linguistically Diverse Learners

Populations of LDL youth embody a multitude of factors that contribute to their categorization of being perceived as different from their majority culture peers. Communication challenges as well as cultural differences contribute to a perceived "otherness" that separates EBs from their majority culture counterparts. These impediments can include accented speech, being a member of an immigrant family, and/or identifying as a racial or ethnic minority – all of which have been demonstrated to be risk factors for bullying victimization independent of the

instances when occurring together. A physical impediment is also found in increased

segregation between peers that belong to the American majority culture and youth from diverse

backgrounds through education (Tsai, 2006). Programming to provide English supports can,

though inadvertently, create greater distance between LDLs and their non-LDL peers. Tsai

(2006) found that language programming perpetuated the perception of LDL students'

comparative "otherness" and increased risk of students participating in the programming of being

targets of discriminatory behavior (Tsai, 2006).

In this population, it is also almost impossible to focus on language alone without

addressing intersecting identities, such as being a member of an ethnic minority coupled with

low competency in the local language. Multiple risk factors occurring simultaneously, then, can

increase the risk for victimization in comparison to only having one risk factor. More numerous

risk factors therefore yield a greater risk for bullying victimization. The harassment and bullying

of LDL youth can be motivated by prejudice and discrimination. Vulnerable groups often

experience multiple types of harassment, and youth from specific sociodemographic groups can

be particularly vulnerable (Bucchianeri, Gower, McMorris, & Eisenberg, 2016). Adolescents

tend to be harassed most by the corresponding personal characteristic or sociodemographic

category in which they may be categorized, for example, harassment that was race-based was

most prevalent among adolescents of color (Bucchianeri et al., 2016). An intersecting

background of multiple vulnerable sociodemographic or personal characteristics can result in

heightened stress and increased harm. Language complicates matters and a greater complication

opens opportunity for greater vulnerability and risk of bullying victimization.

Speech and Language Disabilities

Other groups with difficulties in language processing and communication have also been well-documented as vulnerable to bullying victimization. Children with language impairments (LI) have similarly been identified as vulnerable to bullying victimization and resemble youth with LEP in several ways. They also experience communication difficulties that are manifested receptively and expressively, and the bullying of this population is well documented established through longitudinal research (Ostrov & Godleski, 2007). Difficulties with pragmatic language skills, or the language used in everyday social interactions, and specifically deficiencies in expressive language skills were strongly associated with later victimization (Conti-Ramsden & Botting, 2004; Knox & Conti-Ramsden, 2003). Bullying victimization occurs at high rates in this population and persists through adolescence compared to typically developing same-aged peers, with prevalence estimates for primary and middle school populations at 30 to 40 percent for physical and verbal bullying (Conti-Ramsden & Botting, 2004; Pepler et al., 2006; Redmond, 2011; Savage, 2005).

An area of vulnerability for children with SLI is that they have difficulty both making friends and achieving peer acceptance due to challenges in communication and participating in the socialization process (Conti-Ramsden & Botting, 2004; Fujiki, Brinton, Morgan, & Hart, 1999). Social risk factors related to victimization include high rejection and low acceptance by peers, smaller quantity of friends, and poor quality of friendships (Smith, 2004). Typically, close friendships with others serve as a protective factor in cases of bullying, though the children with SLI had both lower level of contact with friends and fewer close friendships overall, making them less able to seek out social support as a method of coping with bullying (Hunter & Boyle,

2004; Redmond, 2011). Even when close friendships were reported, the number of close friendships for children with SLI was not a successful buffer for victimization (Redmond, 2011).

Language ability appears to play a different role based on gender for children with LI, impacting peer victimization for girls more than boys (Campbell & Skarakis-Doyle, 2011). Consistent with relational and social aggression research, girls with weaker language abilities may be at a disadvantage socially as compared to their verbally-stronger peers, leading to a greater risk for victimization (Campbell & Skarakis-Doyle, 2011).

Accented Speech

Language is a pervasive human experience and our way of communicating to the external world. Auditory information is highly informative with regards to the formation of perceptions (Rakic et al., 2011a; Rakic, Steffens, & Mummendey, 2011b). Accordingly, different accents and the strengths of those accents can activate different stereotypes (Rakic et al., 2011b). Even error-free communication in the dominant language with only a slight accent is sufficient to categorize the speaker within her or his ethnic group – and therefore categorizing her or him as an outgroup member – regardless of status (Rakic et al., 2011b). Accents are also a very subtle cue that influence social category differentiation that would otherwise not be possible by visual cues, such as faces, alone.

A few factors are inseparably connected and related to developing communication skills in a non-dominant language. One such factor is the presence of an accent when speaking the dominant local language, with English being the dominant language in the US and the focus of this research. A non-standard accent in speaking is an indicator of group membership – and prejudice toward certain groups can lead to discrimination toward and victimization of group members. Underlying the process of forming stereotypes is the formation of social categories, a

social phenomenon that is automatic among humans. Alongside gender and age, ethnicity is another salient aspect of social categorization and linked closely to language use. Language cues, such as accent, are used to understand and categorize others (Rakic et al., 2011a). Ethnicity can be grouped by visual (appearance) or auditory (speaking with an accent) with comparable strength (Rakic et al., 2011a), though the latter category, with cues presented for an individual's language use and accent, elicits a stronger and more meaningful basis for both social categorization and perceiving an individual's ethnicity (Rakic et al., 2011a).

With minor derivations in speaking yielding differential treatment, those who speak with stronger accents face additional challenges. Consistent with other forms of automatic categorization, perceptions can be shaped by nonnative accents, and stereotypes about the speaker are evoked by the strength of an accent (Gluszek & Dovidio, 2010). Accent scaling is based on the theory that stereotypes held by one ethnolinguistic group toward another can be conjured solely by cues from speech (Brennan & Brennan, 1981). Within communities of minority speakers, two major rating dimensions emerge based on social status (Brennan & Brennan, 1981). The speech for the dominant language is typically associated with elevated status (Brennan & Brennan, 1981), and the second speech variety is comparatively associated with solidarity to a lower-status group (Brennan & Brennan, 1981).

Accentedness has also been observed to exist on a continuum with regards to social status (Brennan & Brennan, 1981). Researchers investigating the accent continuum assert that the more a speaker's accent deviates from the standard accent, the less that the attributes of social status and prestige will be given to that speaker (Brennan & Brennan, 1981). Findings indicate that as the degree of an accent increased, the speakers were judged to have significantly lower

ratings of status, making the level of accentedness inversely proportional to judgments of status (Brennan & Brennan, 1981).

The strength of an accent and the ethnicity associated with it can also impact valuations of the speaker. Ratings of accentedness were related to scores of solidarity, or the degree to which the rater was likely to befriend the speaker (Brennan & Brennan, 1981; Nesdale & Rooney, 1996). In the Nesdale and Rooney (1996) study, the authors found that the ethnicity associated with an accent as well as its strength influenced the evaluations of preadolescents for both the status of the speaker and feelings of solidarity with them. Older children's evaluations were affected by identifying the accent in addition to the amount of contact had with the specific ethnic group (Nesdale & Rooney, 1996). An accent was presented first that then aroused ethnic stereotypes in the evaluations made by the preadolescents, supporting the relationship between the attitudes held about language and ethnic stereotypes (Nesdale & Rooney, 1996). Notably for Mexican-American raters, a negative correlation was found between accentedness ratings and scores of solidarity (Brennan & Brennan, 1981). Brennan and Brennan (1981) found no significant difference in solidarity ratings for different levels of accentedness, suggesting that the Spanish language, not speaking English with an accent, may be the speech variety that induces solidarity. Further, compared to participants who completed the task in reverse, those who evaluated the accent of the speaker prior to the rating of status had more severely depleted the status of the accented speaker (Brennan & Brennan, 1981).

Proficiency in the primary language and age when learning the language factor into the strength of speaking with an accent. In the US, English proficiency in early adolescence relates to perceived experiences of discrimination as well as feelings of being a perpetual foreigner (Kim et al., 2011). Chinese Americans who reported low levels of English proficiency in middle

school were more likely to speak English with an accent when reaching high school age (Kim et al., 2011). Among these Chinese American students, perceptions of being stereotyped as perpetual foreigners and more experiences of discrimination were significant (Kim et al., 2011). Consequences of speaking in a nonnative accent during adolescent development are substantial, with Chinese American adolescents self-reporting low levels of English proficiency experiencing adjustment problems in high school, increasing the speakers' risk of depressive symptoms (Kim et al., 2011).

For both boys and girls, reporting instances of being stereotyped as a foreigner in high school is directly related to the level of English language proficiency from early adolescence (Kim et al., 2011). The foreigner stereotype and English language proficiency relationship is therefore only partially due to speaking English with an accent, suggesting that other factors besides accent are present (Kim et al., 2011). Being stereotyped as foreigners was also linked to greater reporting of discriminatory experiences (Kim et al., 2011). Discriminatory experiences included the perception of the more significant discriminatory victimization as well as lower intensity perceptions of chronic daily discrimination (Kim et al., 2011). Sex was also found to impact the perception as being a foreigner. Chinese American boys were more likely to report being stereotyped as foreigners than their female counterparts due to speaking English with an accent (Kim et al., 2011). Therefore, this research suggests that young men speaking with nonnative accents would experience more explicitly discriminatory acts due to the foreigner label and consequent stereotypes.

The sex of an individual, specifically if the individual is male, results in more significant consequences with regards to speaking languages other than English. The experience of greater discriminatory acts and being labeled a perpetual foreigner is further reflected in the literature in

boys when peer victimization was found to be associated with their level of developing

competence in the local language (von Grünigen et al., 2010). Contributing explanations for

more significant impacts in male LDLs can be found in a body of linguistics literature. The Gal

(1978) study is heralded as one of the first studies to investigate the differences in linguistic

patterns of acquiring skills in a new language between males and females. Within a European

bilingual sample, women were shown to be more likely to change their use of language than their

male counterparts (Gal, 1978). The language use of women reflected their greater participation

in social change. Taking into consideration the social meaning of the languages available,

women were strategic in their choices of language use and overall had less to lose in rejecting

traditional roles associated with a language (Gal, 1978). This appears to be especially relevant if

the country of origin for a language option is culturally more male-dominated. In male-

dominated cultures, women had more to gain by embracing the new opportunities that an

alternative language had to offer (Gal, 1978). In contrast, males overall may be more resistant to

embracing linguistic changes, contributing to their feelings of being perceived as perpetual

foreigners and amplifying their risk of victimization and discrimination.

In addition to ratings of social status and solidarity, nonnative accents can frequently be

stigmatizing due to perceptions of communication problems and resulting bias, leading to

feelings of less belonging than those with regional and standard accents (Gluszek & Dovidio,

2010). Communication problems were greater for those with stronger nonnative accents and

people with nonnative accents felt less of a sense of belonging in the US (Gluszek & Dovidio,

2010).

Racial and Ethnic Minority Backgrounds

Limited proficiency in the primary language of a host country is often inextricably related to identification with a racial or ethnic minority group. Concern for bullying among children and adolescents has been on the rise for the general population; however, the prevalence of bullying may be even higher among racial and ethnic minority youth. Identifying within an ethnic or racial minority is not enough to preclude bullying victimization, however. Though the bullying of minorities is highly problematic, prevalence rates of bullying in majority youth is still measured as greater in many studies. In the US, ethnic majority children and adolescents experience higher rates of peer victimization compared to their ethnic minority peers (Vitoroulis & Vaillancourt, 2015). However, ethnic minorities were found to report higher prevalence rates for peer victimization in unpublished studies (Vitoroulis & Vaillancourt, 2015).

Though not bullied at higher rates than their White counterparts, racial and ethnic minority youth typically experience more stressors than the general population, such as cultural challenges or discrimination, in addition to more difficulty seeking assistance, such as mental health resources, that may amplify the consequences of aggression and bullying. The experiences of minority youth may also exacerbate the feelings of victimization. The impact of bullying should therefore be sensitive to the interactions of intersecting identities and how the bullying literature may not be representative of populations that are not predominantly White.

Similar to prevalence rates in other studies in the US and abroad, bullying and victimization among Black and Hispanic middle and high school youth from urban, low socio-economic populations with bullies measured at 7%, victims measured at 12%, and bully-victims measured at 5% (Peskin, Tortolero, & Markham, 2006). Though bullying between groups show

more similarities than not, the experience of bullying and victimization can differ between racial and ethnic groups (Wang et al., 2009).

Compared to other adolescent populations, higher rates of bullying and victimization are found in adolescent African Americans (Albdour & Krouse, 2014; Peskin et al., 2006). Differences in the prevalence in bullying and victimization for African-American adolescents demonstrated that overall, youth reported to be less likely to be victims, but more likely to be bullies (Wang et al., 2009). African-American adolescents report levels of victimization that are significantly lower than White and Hispanic peers (Spriggs, Iannotti, Nansel, & Haynie, 2007). Other research findings contradict these results, however, finding that African American youth were not only more likely to be victims but also, bully-victims (Goldweber, Waasdorp, & Bradshaw, 2013). With regards to bullying behaviors, results of a record review yielded greater perpetration of bullying by African American males compared to adolescents in other ethnic groups; specifically, with the bullying behaviors correlating with greater exposure to violence within the community and home environments (Albdour & Krouse, 2014). Though found to be significant for White and Hispanic populations, school factors such as school satisfaction had little effect on bullying rates for Black students (Spriggs et al., 2007). Other research has found that Hispanic adolescents were found to be more likely to be involved in physical bullying (Wang et al., 2009). Unlike results reported for African American students, school related factors of bullying – such as satisfaction and performance – increased bullying rates for Hispanic students (Spriggs et al., 2007).

The diversity in the environment can also have a significant impact on the climate of bullying with regards to racially-based bullying. When students are within the minority at school – numerical or otherwise – they experience an imbalance of power and are more likely to be

targeted for bullying based on race (Fisher et al., 2015). Interestingly, within schools with greater diversity, African American students were found to experience race-based victimization at a rate that was two times the rate of white students – emphasizing the role of within group victimization in bullying (Fisher et al., 2015).

The consequences of bullying can be sufficiently severe, especially for vulnerable populations already at risk for discrimination. Adolescent bully-victims and victims report more internalizing symptoms in comparison to the internalizing symptoms reported by white youth peers of comparable ages when identifying as a member of a racial or ethnic minority and specifically if identifying as female (Peskin, Tortolero, Markham, Addy, & Baumler, 2007). Internalizing symptoms refer to symptomatology not observable on the external body, typically associated with anxiety and depression – and specifically for the Peskin et al. (2007) study – included fearfulness, nervousness, worries, sadness, and physical illness. In the same sample of black and Hispanic youth, middle and high school victims and middle school bully-victims were more likely to experience internalizing symptoms (Peskin et al., 2007). These findings are consistent with victims of bullying in a low-income student group, with black and Hispanic students more likely to report internalizing symptomology (Peskin et al., 2007).

Internalizing symptoms in response to bullying victimization have also been found to be more severe depending on ethnic or racial group membership. Hispanic youth, in particular, are a group at an increased risk for bullying in the US. Risk factors for bullying victimization in Hispanic high schoolers include lower family cohesion and acculturative stress (Forster et al., 2013). These cultural and familial factors also influenced rates of depression, which were heightened when bullying victimization was also experienced by the same adolescents (Forster et al., 2013).

Self-harm, suicidal ideation, and suicidal completion are the most severe internalizing symptoms associated with bullying victimization. The intersection of bullying and attributes of discrimination among adolescents that are ethnically diverse yield a greater prevalence of suicidal ideation and deliberate self-harm as well as higher rates of depressive symptoms when compared to groups experiencing low rates of discrimination (Garnett et al., 2014). As with internalizing symptoms in response to bullying victimization more broadly, specific racial and ethnic populations are also at higher risk of significant consequences to bullying victimization than their majority-culture counterparts. A growing research base has identified Latina adolescents as being at a notably greater risk for depression and suicidal behavior than their non-Latina peers (Gulbas, Hausmann-Stabile, De Luca, Tyler, & Zayas, 2015). Latina adolescents experience rates of depressive symptoms as well as rates of suicidal ideation, plan, and attempts at rates that are disproportionately higher than national averages (Romero, Wiggs, Valencia, & Bauman, 2013). With regards to suicidal behaviors specifically, the sample of Latina adolescents were 1.5 times more likely to attempt suicide if they were victims of bullying compared to their non-victimized peers (Romero et al., 2013). Interestingly, the bullies themselves in this sample were also at an increased risk of suicidal behaviors, with being a bully increasing the odds of both suicidal ideation and plan (Romero et al., 2013). Among Latina adolescents with histories of using non-suicidal self-injury and/or attempting suicide, specific situations were identified that intensified their affective states – leading to decisions of self-harm (Gulbas et al., 2015). Bullying and transnational stress were the prominent two themes identified that influenced their decisions to self-harm (Gulbas et al., 2015).

Immigration Generational Status

Across nations, the experiences of youth from immigrant families are heterogeneous in language, cultural practices, and region of origin among other norms. Yet the course of adapting to the new norms of a host country and facing discrimination enables for a shared commonality among an increasingly diverse population. When referencing children with an immigrant background, the children are more precisely members of a family unit with parents of a foreign nationality, regardless of whether the children themselves immigrated to the US or the children are the second generation in the area of settlement. As part of the immigration process and assimilating into a new culture and way of life, the number of challenges children and adolescent immigrants face introduce more risk factors and susceptibility as targets of bullying victimization. Like their peers, children and adolescents from immigrant families must learn the school rules and expectations in addition to learning the social and cultural rules, customs, and norms while, for some, building competence in communicating in the area's dominant language. Acculturation and assimilation factors as well as generational level and the immigrant-density of the environment all contribute in to the susceptibility of being a target of bullying victimization.

Children from immigrant families experience both the aspects of bullying and victimization that are developmentally typical in conjunction with the challenges specific to immigrants, such as challenges associated with acculturation. In one study, found to be consistent with findings in other Swiss schools, immigrant children were more victimized and less accepted than native-born children, supporting that immigrant children may be at an elevated risk for victimization (von Grunigen, Kochenderfer-Ladd, Perren, & Alsaker, 2012). For the most severely victimized kindergarteners studied, those targeted for harassment were almost two times as likely to be immigrant children (von Grunigen et al., 2012).

Immigrant youth are more likely to experience bullying victimization when compared to native-born youth, specifically bullying that targeted religion or race and due to factors related to the familial economic status (Maynard, Vaughn, Salas-Wright, & Vaughn, 2016; Sulkowski, Bauman, Wright, Nixon, & Davis, 2014). More often than their non-immigrant peers, children and adolescents from immigrant families are also more likely to report victimization in the form of physical aggression (Sulkowski et al., 2014). Important sex differences were noted, as well. For immigrant children, boys were victimized more frequently and displayed aggressive and bullying others more often than girls (von Grünigen et al., 2010). Boys were similarly less accepted by peers than girls, likely due to their higher levels of aggression and the impact of their aggression on peer acceptance (von Grünigen et al., 2010).

While the same general factors explain the risk of victimization between native-born and immigrant youth, the hassles of acculturation add an additional layer of risk for victimization for immigrant youth (Jugert & Titzmann, 2017). Victimization increased in linear fashion as a function of acculturative hassle subscales – with each subscale increasing the level of victimization for the adolescent-aged immigrant youth (Jugert & Titzmann, 2017). Acculturative and developmental experiences in combination then contribute to the bullying victimization experienced by immigrant youth (Jugert & Titzmann, 2017). Once immigrant youth successfully transition to the resettlement phase, however, the developmental pathways for bullying victimization are very similar between both immigrant and their native youth peers (Jugert & Titzmann, 2017). Some contrasting data yielded slightly higher rates for native-born youth in a Swedish sample of students, though first-generation immigrant youth experienced victimization at a comparable rate and second-generation immigrants were bullied at lower rates (Plenty & Jonsson, 2017). Worth noting, the role of race and ethnicity in bullying behaviors is not

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consistent across groups. Maynard et al. (2016) found no significant difference between the bullying victimization experienced by Hispanic or Asian youth who were immigrants or born in the US.

Refugee children provide another layer to the immigration makeup in the US and abroad. Despite hypothesized risk factors that would make refugee youth at a greater risk for bullying victimization, some findings support the opposite – that refugee children may have a greater resilience due to their lived experience that make them more effective in reacting to bullying situations. Compared to native born and immigrant children in the classroom, refugee children reacted as passive victims – or victims that did not react visibly to bully behaviors (Lim & Hoot, 2015).

Experiences of immigrants can be difficult to generalize due to the sheer number of nationalities represented in immigrant populations within a single country. The acculturative experience of immigrants can therefore be considered a universal experience and should include the cultural distance of the immigrant group from the majority culture, the type of immigrant (such as refugees, migrant workers, etc), and the stereotypes about the immigrant group held by the majority ethnic group (Brenick & Titzmann, 2015). Students with immigrant backgrounds are more excluded socially in the school environment influenced by ethnic discrimination and acculturation, presenting challenges for the integration of students of ethnically and racially diverse backgrounds – furthering isolation from the majority culture and fostering "difference" (Plenty & Jonsson, 2017). Within the social environment in a school, immigrant background and acculturation level functions as an indicator of being different from the majority group but factors can also include visible differences immigrant populations that are white compared to those that are non-white (Plenty & Jonsson, 2017). The level of "difference" determined by the

individual's background then places the individual at a higher risk of harmful social experiences such as isolation, rejection, and victimization (Plenty & Jonsson, 2017). Hopeful findings showed little difference between the countries of origin and cultures with regards to receiving harmful social experiencing, shedding light on the role of familiarity with the minority culture along with other factors as explanations for exclusion behaviors other than exclusion based on race alone (Plenty & Jonsson, 2017).

The children of immigrants have a heightened risk of victimization, but this victimization can be dependent on immigrant generational status in addition to the racial identity, ethnic identity, and region of origin. In a review of 18 studies, first generation adolescents from immigrant families experienced higher rates of bullying and aggression from peers compared to third generation and native-born counterparts (Pottie et al., 2015). The national background of mothers as an indicator of generational status was associated with victimization as well, in that the children of immigrant mothers were more likely to be victimized than children of Swiss mothers in a Swiss sample (von Grünigen et al., 2010). Students that are first-generation immigrants are also more likely to report being afraid at the school where they attend (Peguero, 2009). In addition to generational status, the time of immigration proved to be an important factor as well with youth who migrated to the host country since the start of secondary school, primarily those after the age of ten years, having the greatest risk of isolation (Plenty & Jonsson, 2017). The role of acculturation is especially apparent in that social exclusion decreased with time, as second-generation immigrant students were found to be more preferred socially than their first-generation peers (Plenty & Jonsson, 2017).

An additional layer to the challenges faced by students from immigrant groups is the theory of segmented assimilation, or that assimilation for some immigrants will result in upward

social and economic mobility for some and downward for others, Latino and Asian American immigrants report different experiences of victimization related to generational status. Students that are third-generation Latino immigrant are also found to have an increased risk of victimization that is violent while at school (Peguero, 2009). Peguero (2009) found that as Latino immigrants were more likely to be victimized as they moved through the assimilation process. Asian immigrants, in contrast, were less likely to be victimized by violence at all generational statuses yet more likely to experience within-group victimization as first and second-generation immigrants (Peguero, 2009).

The density of immigrant populations also plays a significant role in the climate of bullying victimization of immigrant youth, consistent with the racial and ethnic minority group experience. The role of immigrant density is supportive of social ecological theories positing that individuals that are different from the majority pose a greater risk of being excluded. In classrooms where immigrant populations were sparse, immigrant students experienced more social exclusion (Plenty & Jonsson, 2017). Conversely for the majority youth, victimization increased for classrooms with higher densities of immigrant students (Plenty & Jonsson, 2017). Regardless of the immigrant status of students, students with immigrant backgrounds were less likely to experience rejection in schools with a high density of immigrant students (Plenty & Jonsson, 2017). At the classroom level, when immigrant student populations were sparse, immigrant children – and first-generation immigrant children in particular – had fewer friends and were less accepted compared to their majority youth peers (Plenty & Jonsson, 2017). In these immigrant sparse classrooms, both first- and second-generation immigrant students experienced a higher risk of being isolated by their peers (Plenty & Jonsson, 2017). In the immigrant-sparse school environment, first-generation immigrant youth were especially

susceptible to bullying and isolation (Plenty & Jonsson, 2017). While non-white immigrant youth were not consistently at a greater risk of bullying, in migrant sparse classrooms there was a greater risk was documented for youth with non-European backgrounds when these students were first- or second-generation immigrants – especially first-generation immigrants with recent arrivals (Plenty & Jonsson, 2017).

Like the experiences of ethnic and racial minority youth, immigrant youth experience consequences to bullying victimization that are consistent with but also different from the experiences of most young people. When compared to non-bullied immigrant equivalents, immigrant youth who experienced bullying victimization reported lower levels of wellbeing – that are consistent with the research body on consequences of bullying within other groups (Maynard et al., 2016). Health, substance-use, interpersonal, and social-emotional difficulties are more likely to be reported by immigrant youth who experienced bullying victimization (Maynard et al., 2016). Socially, consequences of bullying resulted in feelings of loneliness, fewer close friends, dissatisfaction with relationships within the family, and interactions with students at school perceived as being more negative (Maynard et al., 2016). Overall physical health was also poorer alongside a greater risk of being overweight when compared to immigrant populations with no experiences of victimization (Maynard et al., 2016). Higher levels of negative body image, somatic complaints, and greater life dissatisfaction were also reported by victimized immigrants (Maynard et al., 2016). This group was also significantly more likely to report the recent use of tobacco, alcohol, and marijuana (Maynard et al., 2016).

Though consequences to overall wellbeing are documented, Pottie et al. (2015) found evidence of a mental health advantage for immigrant youth. Despite the high psychosocial stress associated with integrating into a new country, immigrant youth have better mental health in

general when compared to non-immigrant youth (Pottie et al., 2015). This mental health advantage can be further extended into risk for suicidal behavior and completion. Suicidal behavior rates have been found to be low among adolescents of immigrant families (Pottie et al., 2015). First generation adolescents from immigrant families are also at a lower risk for suicidal behavior compared to those in later generations (Pottie et al., 2015). Cultural values and family environments that are supportive likely play a mediating role in the risks for suicidal behavior and death by suicide in immigrant youth populations (Pottie et al., 2015).

Bullying and Linguistically Diverse Learners

Students who are emerging as bilingual experience an array of both communication challenges and an ethnic or cultural "otherness" that differ from the experience of their English proficient (EP) peers. The "otherness" is especially notable in the changing demographics in the US – of which language is an especially important issue. The Hispanic and Lantinx subgroup in the US, for example, is the fastest growing segment of the population. The US Census Bureau reported that this population grew by 43% from the 2000 Census to the 2010 Census alone – with more than half of the total US population growth during this time period attributed to the Hispanic population (Ennis, Ríos-Vargas, & Albert, 2011). Bullying of students based on language ability can occur within any ethnic or cultural group typically associated with limited proficiency in the dominant local language. A limited but growing body of research has sought to identify the lack of proficiency in the dominant language as a risk factor for youths' development both socially and behaviorally. The "otherness" experienced by LDL youth in communication difficulties is only one piece of the greater picture. Lacking language proficiency alone yields deficits socially and behaviorally and in conjunction with other factors

of "otherness"; such as family of origin differences racially, ethnically, and with regards to immigration; cultivate a greater susceptibility for bullying victimization for LDL youth.

The Human Rights Campaign collected responses from over 50,000 young people specific to post-election experiences, the largest survey of its kind ever conducted, providing a snapshot of the experiences of youth and bullying (Human Rights Campaign Foundation, 2017). Alarmingly, since the 2016 election, 70% of the survey respondents witnessed incidents of bullying, harassment, or hate messages (Human Rights Campaign Foundation, 2017). The rates of these instances of aggression were reported to be accelerating as well, with 79% of those witnesses observing the behaviors to be occurring more frequently since presidential campaign began (Human Rights Campaign Foundation, 2017). Among those youths that reported to see harassment and bullying, an overwhelming majority – 70% – reported incidents motivated by ethnicity or race and 59% reported incidents motivated by immigrant status (Human Rights Campaign Foundation, 2017).

Collected utilizing an anonymous online survey, results from 80,000 public school students in grade five through grade twelve in the YouthTruth survey identified race or skin color as one of the top three reasons students were targeted for bullying, as well (YouthTruth Student Survey: A National Nonprofit, 2016). Nine percent of student respondents also reported where their family is from as a reason for bullying (YouthTruth Student Survey: A National Nonprofit, 2016). Hispanic and Latinx were 20% more likely to have been bullied personally and that both communities of immigrants and non-immigrants were targeted (Human Rights Campaign Foundation, 2017). One 18-year-old participant from California reported, "I stopped speaking in Spanish in places I could avoid [it]. I told my parents to stop speaking Spanish as well" (*Post-election survey of youth,* p. 5). The bullying of students in these communities

resulted in alterations to everyday life, influencing major life decisions such as job prospects, intentionally toning down their race or ethnicity, and feeling increasing discomfort as people of color in predominantly white spaces (Human Rights Campaign Foundation, 2017). The authors of the HRC survey examined the connection between aggressive behaviors and the current political climate but also highlighted the role of intersecting identities, such as race or immigration status and English language proficiency. While significant anecdotal accounts of bullying are available, a scientific base investigating this form of aggression in LDL student populations is severely lacking.

Empirical Literature Base

Within the limited research base that does specifically focus on LDL youth, little consensus exists – attributed at least partly to inconsistencies in the research base itself. Findings range from students with limited proficiency in the dominant language being the aggressors and displaying significant behavioral difficulties to displaying better social and behavioral outcomes than their non-LDL peers. Difficulties in the literature base for the social and emotional development of dominant language learners include a lack of consistent operational definitions of what constitutes language learner status in addition to a lack of systematic study of their social-emotional development (Halle et al., 2014). Notably, Halle et al. (2014) found that the same data sets yielded varying results. Using the same dataset and compared to non-LDL speakers, one set of findings found limited English proficiency to lead to more externalizing behaviors over time, directly contrasting findings supporting positive trajectories for both internalizing and externalizing behaviors for LDLs (Halle et al., 2014).

Similarly, little research has been conducted to address how social development is impacted for young LDL students, specifically. A review of the social-emotional development

of LDLs found equal, or in some instances better, outcomes when compared to native English-speaking peers in the US (Halle et al., 2014). When LDLs were found to have better outcomes, they were judged to have higher self-control and interpersonal skills and lower internalizing, externalizing, and problem behaviors when compared to their non-LDL counterparts (Halle et al., 2014). However, other results with LDLs showed no difference in social and emotional functioning between languages spoken at home (Halle et al., 2014). Halle et al. (2014) found relatively few studies with findings supporting significant differences in the social-emotional development of LDLs compared to their non-LDL peers, suggesting the social-emotional development of all children may follow a similar trajectory. Collectively, LDL's social and emotional functioning was found to be at least as developed, if not better developed than, their native English-speaking, non-LDL peers (Halle et al., 2014). However, socioeconomic status, ethnic minority, and racial minority were also highly correlated with LDL status, making it difficult to determine the unique role of LDL status on social and emotional development (Halle et al., 2014).

Social behavior was found to be a mediating factor for LDL and acceptance by their peers. As students with developing proficiency in the dominant language, immigrant children that are learning the local language may struggle to communicate with peers – a crucial step in developing healthy relationships. Grünigen, Perren, Nagele, and Alsaker investigated the effects of local language competence, or a student's ability to speak and comprehend the area's dominant language, on the peer acceptance of immigrant children in Switzerland (2010). Overall, the von Grünigen et al. (2010) study illustrated the role of language proficiency deficits in putting children at risk for low peer acceptance and higher peer victimization when compared to their native-born peers. Understandably, immigrant children were rated as significantly lower

in local language competence than their native-born peers (von Grünigen et al., 2010). A risk

factor for both higher victimization and lower acceptance by peers was a deficit in Local

Language Competence (LLC), defined by von Grünigen et al. (2010) as the proficiency of the

child to speak the local language (in their study, the Swiss or German language was the

predominant language spoken). Not surprisingly, when considering deficits in LLC, immigrant

children were also less likely to engage in prosocial behaviors when compared to native-born

youth (von Grunigen et al., 2012). However, interestingly, immigrant children were no more

likely than their native-born peers to be socially withdrawn and no less likely to set limits – both

of which being predictors of victimization (von Grunigen et al., 2012). A child's LLC was

linked to peer harassment in that immigrant victims of harassment evidenced significantly lower

levels of LLC, even when compared to immigrant non-victims (von Grunigen et al., 2012).

The negative association between language competence and victimization makes LLC in

children a risk factor for being victimized (von Grünigen et al., 2010). As to be expected,

children with non-Swiss parents from a different country of origin had LLC that was

significantly lower than their peers with Swiss parents (von Grünigen et al., 2010). Though

Swiss children with poor LLC were similarly at risk for victimization (von Grünigen et al.,

2010). Other individual or social factors appeared to also play a role, such as the individual

factor of LLC and the social factor of mothers' background (von Grünigen et al., 2010). Gender

also had a significant interaction with LLC, indicating that gender was a moderating factor (von

Grünigen et al., 2010). Low LLC was more strongly associated with peer acceptance for girls

and peer victimization for boys (von Grünigen et al., 2010). When controlling for both gender

and LLC, peer acceptance was negatively associated with victimization at a significant level (von

Grünigen et al., 2010).

A child sharing a common language with proficiency in that language promotes social contact with other children. The lack thereof hindering social contacts with peers. However, social contacts utilizing purely speech are not enough for achieving peer acceptance, and the development of social competence is a necessity alongside linguistic competence. Children with poor proficiency within social experiences are perceived as having less social competence due to needing proficient language skills to communicate, react to peers, set limits for peer conflict, show prosocial behavior, and follow teacher directives (von Grünigen et al., 2010). A perception by peers of less competency in social situations then leads to less attractiveness by peers to pursue future social contacts (von Grünigen et al., 2010). Compared to children with good LLC, children who have mothers with immigrant backgrounds in combination with poor LLC have fewer opportunities to successfully overcome experiences of prejudice and distance from peers due to lack of communication in a common language (von Grünigen et al., 2010). These difficulties are comparable to children with speech difficulties that also experience social interaction problems with peers.

Even when proficiency in the primary language is achieved, an accent can remain – further influencing experiences of bullying, stereotypes and discrimination, social isolation and rejection, and feelings of being a perpetual foreigner. Chinese Americans that reported low levels of English proficiency in middle school led to speaking English with an accent when reaching high school age (Kim et al., 2011). A negative correlation is also present between accentedness ratings and scores of solidarity for Mexican-American raters (Brennan & Brennan, 1981).

First generation immigrant adolescents experienced bullying victimization and peer aggression at significantly higher rates when speakers of non-official languages compared to

their third generation and native-born counterparts (Pottie et al., 2015). When immigrant

adolescents spoke non-official languages, or languages that differed from the primary language

spoken in their host country, the risks of being victims of violence were greater (Pottie et al.,

2015). English proficiency in early adolescence similarly relates to perceived experiences of

discrimination (Kim et al., 2011). In addition, risk was potentially aggravated by high academic

standing (Pottie et al., 2015). Ethnic diversity within schools, safe schools, and family cohesion

served as alleviating factors for risks of violence (Pottie et al., 2015).

Findings by von Grünigen et al. (2010) suggested that LLC is a protective factor for

immigrant children against rejection and prejudice. Children with immigrant backgrounds and

good LLC are better able to have speech contacts with others and with that overcome instances

of prejudice and cultural differences, more so than those students with LLC that is poor (von

Grunigen et al., 2012). Prosocial behaviors and LLC were positively associated, indicating that

LLC plays a role in a child's ability to utilize prosocial skills effectively (von Grunigen et al.,

2012). Prosocial skills decrease the risk for victimization while increasing a child's acceptance

by peers with greater language competence helping to decrease the risk for peer victimization

and increase the likelihood of peer acceptance, allowing the child to develop healthy

relationships with his or her peers (von Grunigen et al., 2012). Setting limits, another way for

the child to form healthy peer relations, was also found to be associated with lower victimization

and higher peer acceptance (von Grunigen et al., 2012). Setting appropriate limits and

demonstrating age-appropriate prosocial skills require good communication skills. These social

behaviors are associated with LLC and, if an immigrant child struggles with language, he or she

may be at a greater risk for social problems than a child that is a native speaker (von Grunigen et

al., 2012). Overall, victimization decreased when language proficiency increased; when students experience greater acculturation, they may become less isolated from peers.

While limited by the small sample of participants and qualitative data, the Mendez et al. (2012) study illuminates the difficulties of intracultural aggression and language barriers in the bullying of students with limited English proficiency. Research utilizing qualitative methods investigated the role of acculturation and English proficiency on bullying within the Mexican ethnic group (Mendez et al., 2012). Mendez, Bauman, and Guillory conducted interviews with 6 students identified as Mexican-Americans and 6 students identified as Mexican immigrants at a predominantly Hispanic public high school (2012). One of the major themes that emerged from the interview data is the role of the language barrier. Bullying occurred most frequently within the Mexican cultural group, with bullying reported by Mexican immigrant students identifying the Mexican American students as the primary aggressors (Mendez et al., 2012). According to one of the participants interviewed, the language barrier served as an indicator of inferiority and once the Mexican immigrant students learned English they were no longer a target for bullying (Mendez et al., 2012). The language barrier also related to the theme of isolation from the interview data (Mendez et al., 2012).

Isolation is also amplified for this student group in part due to educational programming. Due to enrollment in English as a Second Language (ESL) classes, students of Mexican descent that had recently immigrated were unable to make friends with a majority of the student body due to separation into classes that focused predominantly on learning English (Mendez et al., 2012). The lack of exposure and personal connections with other students created a natural divide between Mexican American students and Mexican immigrant students based on language status (Mendez et al., 2012). The students interviewed in the study indicated that school factors

for ESL enrollment created social isolation of Mexican immigrant students from the general student population that leads to bullying (Mendez et al., 2012). Consistent with the findings of Tsai (2006), language programming perpetuated perceptions of LDL students as being different and increased the risk for students participating in the programming to be targets of discriminatory behavior (Tsai, 2006).

Students identified as Mexican immigrants in the Mendez et al. (2012) study indicated that the primary factor of bullying to be the language barrier and the primary perpetrators of the bullying to be Mexican American students. Bullying was described by one student as the experience of being mocked and ridiculed when attempting to pronounce words in English by Mexican Americans and being deceived by bilingual Mexican Americans in providing false instructions to Mexican immigrant students relying on Mexican Americans for interpretation of teacher directives (Mendez et al., 2012). Mexican Americans were identified as those that discriminate more against Mexican immigrants when compared to any other race within the school (Mendez et al., 2012). Interview transcript data from Mexican immigrant students revealed students recalling instances of bullying demonstrating distress and embarrassment during incidents as well as anger when recalling the actions of the perpetrators (Mendez et al., 2012).

Summary

Bullying is a serious phenomenon yielding significant consequences for youth who are victimized. Youth are often targeted due to their perceived level of "otherness" or difference from their peers. This "otherness" can often be amplified by minoritized populations, especially those which have multiple, cooccurring vulnerabilities to be targets of bullying. One such population is LDL youth, who not only experience communication challenges, but also

experience inextricable "otherness" racially or ethnically, culturally if a member of an immigrant family, and/or as a result of accented speech. Individually, the "otherness" factors are risk factors for bullying victimization and social exclusion. When in combination, the effect is potentially compounded and the consequences more severe. LDL youth are therefore at an increased risk for bullying victimization due to a combination of communication challenges and inextricable "otherness", separating them from their non-LDL counterparts.

Bullying research for specific populations appears to be growing with regards to students from immigrant families and racial and ethnic minority experiences. The increasing focus on vulnerable minority groups is fleshing out the bullying literature to be more representative of the diversity within the US population. The often overlapping identity is the classification of LDL and research specific to bullying and this population is surprisingly limited. Even within the few very relevant studies, gaps remain. The most germane study, Mendez et al. (2012), provides valuable insights into the within-group bullying that occurs between Mexican-American students and their LDL, Mexican-immigrant peers, in the US. This study addresses the context of immigration and ethnic or racial group identification, though secondarily. The Mendez et al. (2012) data was collected at a predominantly Hispanic school and does not address bullying with other groups, and may lack generalizability. The von Grünigen et al. (2012; 2010) studies found higher victimization and lower acceptance related to a student's competence in the local language – though the focus was on students from immigrant families within the Scandanavian context. Similarly, while special interest group national surveys are helpful in illustrating the experience of LDLs in the US specifically, further empirical research is necessary at the national scale as the population of LDLs and number of languages spoken continues to rise.

Despite that LDL's social and emotional functioning was found to be at least as developed, if not better developed than, their non-LDL peers, they show persistence as targets of bullying (Halle et al., 2014). Discrimination and other stressors may be additional factors alongside perceived "otherness". Discrimination among adolescents that are ethnically diverse yield a greater prevalence of suicidal ideation and deliberate self-harm as well as higher rates of depressive symptoms in response to bullying victimization compared to groups experiencing low rates of discrimination (Garnett et al., 2014). Consequences have also been identified as severe for certain groups, such as depression and suicidality with the adolescent Latina population, possibly due to the interaction of multiple risk factors for bullying – such as the combination of identifying as a racial or ethnic minority in addition to having weaknesses communicating in the English language (Gulbas et al., 2015).

The literature base in this area requires attention and expansion to investigate other areas in which the bullying experience of LDLs diverges from the broader bullying research base. Measuring bullying prevalence for LDLs in the greater population is essential for targeted intervention and prevention efforts – especially if this population is particularly vulnerable to bullying victimization and has more significant consequences for bullying. Narrowing further, greater knowledge regarding the bullying victimization of LDLs according to the age and sex of students will support or refute existing bullying trends and further narrow those students at greatest risk - neither area being a particular focus in the research referenced. The present research study aims to expand upon the existing pertinent studies and begin to fill in the gaps in the literature base specific to the bullying experience of LDL students.

CHAPTER III - Method

The purpose of this study was to investigate the relationship between children and adolescents that are LDLs and bullying victimization. In the following sections, I describe the recruitment of participants, the procedures and measure used for data collection, the psychometric properties of this measure, and the methods of data analysis.

All methodology is reported in accordance with Youth Risk Behavior Surveillance System (YRBS), a school-based self-report survey administered in the US though the Centers for Disease Control (CDC). The YRBS data has been collected biennially since 1991 to monitor six categories of behaviors that present a health-risk to American youth (Brener et al., 2013). The categories include behaviors that can increase risk of unintentional injuries and violence, risky sexual behaviors, tobacco use, alcohol and other drug use, unhealthy dietary behaviors, and physical inactivity (Brener et al., 2013). Both the 2015 and 2017 data collected for the YRBS are analyzed for this research.

Participants

Subjects

Participants for the National Survey of the YRBS were recruited using a cluster sample design in three stages to obtain a sample that is nationally representative of students in the US in the ninth through twelfth grades (Brener et al., 2013). All public and private school students in grades nine through twelve in all US states and the District of Columbia comprise the target population of the national survey administration (Brener et al., 2013). For the 2015 and 2017 YRBS, the target population included all public, Catholic, or other private school students in the grades of ninth through twelfth (Centers for Disease Control and Prevention, 2016a; Centers for Disease Control and Prevention, 2018). The design of the national sample is to yield estimates

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with accuracies within $\pm$5% with a confidence level of 95% (Brener et al., 2013). Estimates for the overall sample, in addition to demographic subgroup estimates for sex, grade, race/ethnicity, grade by sex, and race/ethnicity by sex, meet the standard for accuracy and confidence level (Brener et al., 2013). The subgroup of grade by race/ethnicity is also accurate within $\pm$5% and at a confidence level of 90% (Brener et al., 2013).

Sample Methods

Schools were selected from the sampling frame systematically and with a probability that was proportional to the enrollment of ninth through twelfth grade students enrolled in the school using the random start sampling technique (Centers for Disease Control and Prevention, 2016a; Centers for Disease Control and Prevention, 2018). The total number of schools sampled were one hundred ninety-two and one hundred eighty in the 2017 and 2015 YRBS administrations, respectively (Centers for Disease Control and Prevention, 2016a; Centers for Disease Control and Prevention, 2018).

The three-stage cluster sampling design for the biennial national survey utilizes primary sampling units (PSUs) for the first stage of sampling. PSUs consist of counties that are large in size or groups of adjacent counties that are smaller in size (Brener et al., 2013). Since sampling in 1999, PSUs that are large enough that they can be selected with certainty are then divided into smaller units, or sub-PSUs (Brener et al., 2013). Within the newly created sub-PSU units, schools are then sorted by size and assigned in rotation to a sub-PSU (Brener et al., 2013). The metropolitan statistical area (MSA) status, or areas with a population of equal to or greater than 500,000 people, and percentages of black and Hispanic students in PSUs, inform 16 strata from which PSUs are selected (Brener et al., 2013). If a PSU is in one of the 54 largest MSAs in the US, the PSU is categorized as urban (Brener et al., 2013). If the PSU does not meet the

classification for urban, it is considered a rural PSU (Brener et al., 2013). The probability of selecting a PSU is then proportionate to the school enrollment size for PSUs (Brener et al., 2013).

The second stage of sampling for the YRBS national sample involves selecting schools from PSUs. The Market Data Retrieval (MDR) database provides a list of public and private schools in PSUs (Brener et al., 2013). Also included in the database is information from public and private schools, such as enrollment data, as well as the most updated information from the Common Core of Data, a data source through the National Center for Education Statistics (Brener et al., 2013). Schools are further categorized into "whole schools" or "fragment schools." Schools that are considered "whole schools" contain all four high school grades, nine through twelve, within the school system (Brener et al., 2013). Schools that contain any other set of grades are then considered "fragment schools" and are combined with other schools, either whole or fragment, to form a "cluster school", or a school that contains all four grades (Brener et al., 2013). The cluster school is thus treated as a single school during the school selection process (Brener et al., 2013).

Schools are further categorized into either large or small schools based on enrollment figures. An estimated enrollment of greater than twenty-five students in each grade level for a school was categorized as large, with schools enrolling less than an estimated twenty-five per grade level being considered small (Brener et al., 2013). For small-school sampling, about one fourth of the PSUs are selected (Brener et al., 2013). Within these selected PSUs, a single school considered small is drawn proportional to size, with only small schools within the PSU considered (Brener et al., 2013). From all sampled PSUs, three large schools are selected, also proportional to the size of the school with regards to enrollment (Brener et al., 2013).

Once schools were selected from PSUs, the last sampling stage involved selecting one or two entire classes in each of grade levels nine through twelve at random within each chosen school (Brener et al., 2013). The sampling frame included all classes in a required subject or all classes meeting during a particular period in the school day (Centers for Disease Control and Prevention, 2016a; Centers for Disease Control and Prevention, 2018). Classes may include homerooms or classes specific to a required subject, such as English (Brener et al., 2013). Within the sampled classrooms, all enrolled students in the selected classes are eligible for participation in the survey (Brener et al., 2013). For each school participating in the national survey, the selection of classes from the sampling frame utilized a random start with systematic equal probability sampling (Centers for Disease Control and Prevention, 2016a; Centers for Disease Control and Prevention, 2018).

Response Rates

The national administration of the YRBS was conducted 11 times between 1991 and 2013, with an average sample size of 14,517 students (the two additional administrations in 2015 and 2017 were not included in this statistic; Brener et al., 2013). Average response rates for this time period for schools were 78% and for students were 86% with an overall response rate of 71% (Brener et al., 2013).

Response rates for the 2015 and 2017 administrations of the national YRBS were calculated by dividing the number of participating students or schools by the total number sampled. The 2015 national YRBS attained a 69% school response rate with 125 of the sampled schools participating out of the 180 schools sampled (Centers for Disease Control and Prevention, 2016a). The student population sampled 18,165 students in grades nine through twelve (Centers for Disease Control and Prevention, 2016a). Of this sampled group, 15,713

students returned questionnaires (Centers for Disease Control and Prevention, 2016a). With many questionnaires only usable after data editing, 15,624 questionnaires were determined to be usable, resulting in a student response rate of 86% (Centers for Disease Control and Prevention, 2016a). The overall response rate was determined by multiplying the school response rate by the student response rate (Centers for Disease Control and Prevention, 2016a). The overall response rate for the 2015 national YRBS was calculated as 60% (Centers for Disease Control and Prevention, 2016a).

The YRBS administration in 2017 yielded identical overall response rates than measured in 2015. The overall response rate, or combined response rate of schools and students, was calculated as 60% (Centers for Disease Control and Prevention, 2018). The school response rate was 75%, with 144 schools participating out of the 192 schools sampled (Centers for Disease Control and Prevention, 2018). Though more schools participated than the previous administration, the student participation level was weaker in 2017 with a student response rate of 81% (Centers for Disease Control and Prevention, 2018). Of the 18,324 students sampled in 2017, 14,956 submitted questionnaires, with 14,765 of the questionnaires being usable after the data were edited (Centers for Disease Control and Prevention, 2018).

Oversampling

To allow for a separate analysis of data for minority students identifying as black and Hispanic, strategies have been implemented by the CDC to attain oversampling of these demographic groups since 2013 (Brener et al., 2013). To achieve oversampling, in schools with a high enrollment of minority students, the CDC selected two classes per grade rather than one (Brener et al., 2013).

To adjust for oversampling of black and Hispanic students and student nonresponses, a weight based on the sex, race/ethnicity, and school grade of the students is applied to each participant. Using an iterative process, statisticians trim weights and distribute them when weights exceed a criterion value among untrimmed weights to avoid sampling variances that are inflated (Brener et al., 2013). The final overall weights were not utilized for this analysis however, and the 2015 and 2017 YRBS raw data were analyzed for this research.

Survey Nonresponse Protocol

Sampling is maintained without replacement and the data from sampled schools, classes, and students who refuse to participate are not replaced or weighted.

Measures

Initial Development

The YRBS questionnaire development and design initially began by reviewing the leading causes of mortality and morbidity among both youth and adults. For people ages one to twenty-four years in 1988, the review yielded four groupings that accounted for 68% of all deaths, which included motor-vehicle crashes, other injuries that were unintentional, homicide, and suicide (Brener et al., 2013). The continued relevancy of the four categories is supported in data from 2008, in which 72% of all deaths were attributed to these four main categories among people ages ten to twenty-four (Brener et al., 2013). In 1988, additional factors contributing to considerable morbidity for adolescents and adults included pregnancies among adolescents, sexually transmitted diseases (STDs), cardiovascular disease, and cancer (Brener et al., 2013). The behaviors contributing to the leading causes of death were then categorized into six priority health-risk behaviors: "1) behaviors that contribute to unintentional injuries and violence; 2) sexual behaviors that contribute to HIV infection, other STDs, and unintended pregnancy; 3)

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tobacco use; 4) alcohol and other drug use; 5) unhealthy dietary behaviors; and 6) physical

inactivity" (Brener et al., 2013, pg. 2).

In each of the six categories, corresponding federal agencies responsible for the

monitoring rates or the improvement of a behavioral risk appointed a YRBS steering committee

member at the request of the CDC (Brener et al., 2013). A two-day workshop was then

convened with the CDC and steering committee members in August 1989 to identify the priority

behaviors and develop questions to measure those behaviors (Brener et al., 2013). In addition to

the CDC and steering committee members, scientific experts from other federal agencies formed

a panel for each of the six priority health-risk behaviors (Brener et al., 2013). At the federal

level, scientific experts were tapped from the National Institutes of Health, the Office of the

Assistant Secretary for Health, the Health Resources and Services Administration, and the U.S.

Department of Education alongside CDC's survey research specialists from the National Center

for Health Statistics (NCHS), CDC staff from the Division of Adolescent and School Health, and

scientists from academic institutions (Brener et al., 2013). With the questionnaire designed to be

administered in the school environment, each panel also included representatives from the

Society of State Directors of Health, Physical Education, and Recreation to represent school-

based health programs at the state level (Brener et al., 2013).

Due to the necessity of brevity for a survey administration in the school environment

within a timeframe of a single class period, or approximately forty-five minutes, panels were

instructed to identify the only the behaviors that were the highest priority and therefore

recommend a limited number of questions to measure the prevalence of the high priority

behaviors (Brener et al., 2013). The first draft of the YRBS questionnaire was completed in

October 1989 and reviewed by education agency representatives from each of the fifty states, the

District of Columbia, and four US territories, as well as sixteen local education agencies that were, at the time, recipients of CDC funding (Brener et al., 2013). The CDC NCHS survey research specialists also contributed suggests and comments on the questionnaire (Brener et al., 2013).

In the spring of 1990, a national sample of students in grades nine through twelve were administered a second version of the YRBS alongside student samples from twenty-five states and nine large urban school districts (Brener et al., 2013). The second version was also sent for laboratory and field testing with high school students at the Questionnaire Design Research Laboratory at NCHS (Brener et al., 2013). The student responses were examined by NCHS staff and recommendations were made to improve reliability and validity, including suggestions to clarify the wording of questions, setting periods for recall, and identifying options for responses (Brener et al., 2013).

A third version of the YRBS questionnaire was completed in October 1990 with revisions reflecting data collected in the spring of 1990 administration by the CDC and state and local education agencies, the NCHS's laboratory and field test information, and further input from the steering committee members and each state and 16 local education agency representatives (Brener et al., 2013). Questions for national health objectives were also included in the questionnaire (Brener et al., 2013). This version was utilized by the CDC to conduct a national YRBS as well as state and school district level administrations (Brener et al., 2013).

Since behavior changes typically happen at a gradual rate, the CDC determined in 1991 that biennial survey administration would be sufficient for the measurement of the priority health-risk behaviors (Brener et al., 2013). The YRBS has been conducted every odd year since

1991 at the national level as well as at the state, territorial, and large urban school district levels (Brener et al., 2013).

Questionnaire Revisions

Revisions to the YRBS questionnaire were conducted in even-numbered years between 1991 and 1997 with input from the state, territory, and large urban school district sites conducting the surveys for use in the subsequent survey administration cycle (Brener et al., 2013). Revisions were created to reflect priorities at the site and national level, such as addressing reporting requirements of adding questions to measure a National Education Goal (Brener et al., 2013).

A systematic and in-depth review of the questionnaire was prompted by the CDC in 1997 to address multiple factors, such as *Healthy People 2010* national health objectives, but additionally to create an assessment for youth that measured their most critical health-risk behaviors effectively and to the best extent possible (Brener et al., 2013). The CDC again collaborated with content experts from within the CDC as well as from academia in conjunction with representatives from other federal agencies; education agencies at the state, territorial, and local level; state health departments; and institutes, foundations, and organizations at the national level (Brener et al., 2013). Input was collected from about 800 individuals that aided the revision process of the questionnaire by the CDC (Brener et al., 2013). Further input was gathered after the questionnaire revision was sent to all state, territorial, and local education agencies (Brener et al., 2013). Final decisions regarding the questionnaire considered "1) input from the original reviewers, 2) whether the question measured a health-risk behavior practiced by youths, 3) whether data on the topic were available from other sources, 4) the relation of the behavior to the leading causes of morbidity and mortality among youths and adults, and 5)

whether effective interventions existed that could be used to modify the behavior" (Brener et al., 2013, p. 5). The 1999 YRBS questionnaire was thus created with revisions that included the addition of 16 new questions, deletion of 11 questions, and 14 questions that underwent significant changes in wording (Brener et al., 2013).

The 2015 YRBS questionnaire reflects changes considered minor since the major revisions in 1999 (Brener et al., 2013). The CDC seeks input from experts regarding the current questions and if questionnaire items should be deleted or changed or new items should be added during even-numbered years since 1999 (Brener et al., 2013). The proposed deletions, changes, or additions of items are placed on a ballot sent to all YRBS site coordinators with each site voting for or against each (Brener et al., 2013). Voting results on the deletions, changes, or additions are considered when finalizing the standard YRBS questionnaire for the subsequent cycle (Brener et al., 2013). For each cycle, five to eleven additional questions are added to the standard questionnaire covering health-related topics that do not fit in the six categories of priority health-related behaviors (Brener et al., 2013).

Questionnaire Characteristics

The YRBS questionnaires are self-administered with students recording their responses on a questionnaire booklet or answer sheet that is computer-scannable (Brener et al., 2013). No skip patterns are included in the YRBS questionnaires to help to ensure that similar amounts of time are required to complete it, regardless of the status of each respondent's health-risk behaviors (Brener et al., 2013).

The 2015 standard YRBS questionnaire includes 7 questions assessing demographic information for respondents, 23 for unintentional injury and violence questions, 10 for use of tobacco, 21 for use of alcohol and other drugs, 9 for sexual behaviors, 14 on dietary behaviors

and body weight, 6 for physical activity, and 9 on other topics that are health-related (Centers for Disease Control and Prevention, 2016a). The 2017 standard YRBS similarly included includes 7 questions assessing demographic information for respondents, 23 for unintentional injury and violence questions, 10 for use of tobacco, 20 for use of alcohol and other drugs, 9 for sexual behaviors, 14 on dietary behaviors and body weight, 7 for physical activity, and 9 on other topics that are health-related (Centers for Disease Control and Prevention, 2018). Both versions include two questions specifically addressing bullying, described in more detail in the following section.

Bullying Items

Two items within the unintentional injury and violence category ask specifically about the bullying experiences of the student respondents. Ahead of the listed items, the 2015 and 2017 YRBS questionnaire provides the following definition of bullying:

> "Bullying is when 1 or more students tease, threaten, spread rumors about, hit, shove, or hurt another student over and over again. It is not bullying when 2 students of about the same strength or power argue or fight or tease each other in a friendly way."

This following question, question 24, asks if the student has ever been bullied on school property. Responses to this question will be used to measure bullying rates for respondents. The bullying definition and bullying items were formulated based on a development and revision process by experts and representatives from within and outside the CDC (Brener et al., 2013).

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Research Design

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Variables

The current research study contains one dependent variable and four independent variables based on the 2015 and 2017 national YRBS questionnaires. All variables are

categorical and yield nominal and ordinal values. The operational definitions of the above-mentioned variables for the current research study are as follows.

Dependent variables. The dependent variable for the current research will be hereafter labeled as Bullying Victimization. The national 2015 and 2017 YRBS definition provided for bullying is:

> "Bullying is when 1 or more students tease, threaten, spread rumors about, hit, shove, or hurt another student over and over again. It is not bullying when 2 students of about the same strength or power argue or fight or tease each other in a friendly way."

Bullying Victimization is measured by responses to question 24 of the national 2015 YRBS questionnaire which immediately follows the stated bullying definition. Question 24 is a categorical and dichotomous, selection of A) yes or B) no, response to whether the student has ever been bullied on school property within the past 12 months. The response of student participants to this question was utilized to measure the students' experience of bullying victimization.

Independent variables. The four independent variables are operationally defined in the following manner. The first independent variable will be labeled as LDL Status. LDL Status is the only independent variable that has ordinal values for the present study. The information for this question is collected from the final question, question 99, of the national 2015 and 2017 YRBS. Question 99 states "how well do you speak English?" followed by four response options: A) Very well, B) Well, C) Not well, and D) Not at all.

The second independent variable will be referred to as Sex. The variable Sex is defined as the participants' self-report of female or male in the questionnaire. The participant indicates a

dichotomous response, A) Female or B) Male, to the second question of the questionnaire asking, "What is your sex?" for both the 2015 and 2017 versions of the questionnaire.

The third independent variable is labeled as Grade and is based on the grade level identified by participants' self-report. The third question of the YRBS for both the 2015 and 2017 versions which asks, "In what grade are you?" followed by five responses A) 9th grade, B) 10th grade, C) 11th grade, D) 12th grade, and E) Ungraded or other grade. Responses for the final option, Ungraded or other grade, is not utilized in the statistical procedure.

The fourth independent variable will be referred to as Race and is measured by the participants' self-report of his or her self-identified race. The fifth question of the national 2015 and 2017 YRBS asks respondents "What is your race?" followed by the following five response options: A) American Indian or Alaska Native, B) Asian, C) Black or African American, D) Native Hawaiian or Other Pacific Islander, and E) White. This demographic question permits more than one selection. A sixth option for multiple selections for race is included for analysis. To address the hypotheses representing the lived experience of racial minorities with bullying, responses to this question were converted into a dichotomous, categorical variable of White or Non-white. Responses for the sixth option for multiple race selections were included in the category of Non-white.

Reliability

Two test-retest reliability studies for the national YRBS questionnaire were conducted in 1992 and again in 2000 by the CDC (Brener et al., 2013). The first test-retest reliability study administered the 1991 version of the questionnaire to a convenience sample consisting of 1,679 students in the 7th through 12th grades (Brener et al., 2013). The CDC administered the questionnaire on two separate sessions, with fourteen days in between the administrations

(Brener et al., 2013). No statistically significant differences were measured between the prevalence estimates of the first and second administrations of the questionnaire (Brener et al., 2013). At the item level, about three quarters of the YRBS questions were rated as having a substantial reliability or higher, with a kappa measured between 61% and 100%. Overall, the responses of 7th grade participants were less consistent than students in grades 9-12 (Brener et al., 2013). The survey was therefore determined to be better suited for students in the latter grade band (Brener et al., 2013).

The second test-retest reliability study was conducted using the 1999 version of the questionnaire and similarly administered to a convenience sample of 4,619 students in the high school grades (Brener et al., 2013). Consistent with the first study, in this administration, the questionnaire was completed over two sessions with about two weeks in between administrations (Brener et al., 2013). During this test-retest reliability study, about one fifth of questions, measured at 22%, yielded prevalence rates that were significantly different between the first and second administrations (Brener et al., 2013). Additionally, ten questions, measured at 14%, yielded kappas for both administrations that were less than 61% but simultaneously yielded significantly different prevalence estimates for the first and second administrations of the questionnaire (Brener et al., 2013). These results indicated that the reliability for these ten questions were problematic. In response, these identified questions were deleted from or revised for later versions of the YRBS questionnaire (Brener et al., 2013).

Validity

Internal validity. Internal validity is arguably the most important aspect of a study to develop, as without it, a study may not be measuring what it purports to measure. Internal validity refers to the truthfulness of the causal relationship being tested and controls for

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confounding factors, such as extraneous variables, that would negatively impact the ability to assume a causal relationship (McMillan & Schumacher, 2010). Careful research design can minimize or eliminate possible sources of error and increase the credibility of the study's results.

The standardized protocol utilized by the YRBS and its contractors reduces the potential for experimenter effects, or the researcher's influence on the results (McMillan & Schumacher, 2010). The data collectors are hired and trained by the CDC contractor and training for the questionnaire administration includes following a common protocol (Brener et al., 2013). Trained data collectors travel to each school participating in the national YRBS. The data collectors administer the questionnaires to the student participants by reading a standardized script that includes an introduction to the survey (Brener et al., 2013). The standardization of protocols and procedures ensures constancy by creating a uniform condition that all participants of the national YRBS experience.

The internal validity threat of attrition was accounted for by holding the questionnaire administration over the course of a single, regularly scheduled class period (approximately 45 minutes in duration), during the typical school day and setting of the student participants (Brener et al., 2013). When students were absent during administration days, make-up days for the YRBS were offered to students to reduce rates of nonresponding, allowing for a more representative sample (Brener et al., 2013). The collection of data from students absent during initial data collection are at a greater risk for engaging in more health-risk behaviors than students without truancy and are essential participants for a sample that is representative of all students in grades 9-12 in public and private schools (Brener et al., 2013). These same questionnaire administration procedures and brevity of administration aid in the control of

additional internal validity threats, such as pretesting, statistical regression to the mean, history of uncontrolled incidents or events, maturation, and diffusion of intervention.

All YRBS procedures are designed to protect the privacy of the students through anonymous and voluntary participation in the survey (Brener et al., 2013). All surveys are self-administered for the duration of one class period with responses recorded on booklets or answer sheets that are computer-scannable. Student desks are spread out throughout the classroom as much as possible to reduce the likelihood that individual student responses are visible to other students. Additionally, student participants are encouraged to use a provided piece of paper or envelope to cover responses during questionnaire completion (Brener et al., 2013). Mortality is also addressed by cleaning and editing data. Data is set to "missing" that is incomplete or illogical and questionnaires with too few plausible responses are not added to the data set (Brener et al., 2013).

The thorough sampling itself lends to protections against internal validity threats with the highly representative national sample of a limited age range, students in grades ninth through twelfth, decreasing the effect of selection threat. Due to the large sample size and use of contractors however, the effect of instrumentation on internal validity is plausible. The large sample size demands many trained contractors administering the questionnaire to a multitude of sites – increasing the odds that, though the questionnaire is consistent across sites, the people administering the questionnaire and collecting the data may introduce subtle changes to administration or procedure and therefore introduce a threat to internal validity (Brener et al., 2013).

The delicate nature of asking adolescents to self-report on serious health-risk behaviors suggests the possibility that all self-reported scores are not reliable and could be subject to the

"good participant effect" and response bias through the preponderance of categorical yes/no responses. Some procedural safeguards are in place to protect against the threat of overly desirable – or undesirable – responses and protect student privacy, such as the anonymous and voluntary participation, computer-scannable answer sheets, student desks spread out in the classroom to the maximum extent possible to reduce response visibility to other students, provision of paper to cover responses, and the duration of the questionnaire being the same for both students with low incidences and high incidences of health-risk behaviors (Brener et al., 2013).

Though some safeguards are present in the procedure for administering the YRBS, the validity of all self-reported behaviors measured within the YRBS questionnaire have not been assessed. The CDC conducted a literature review in 2003 to assess factors, both cognitively and situationally, that could potentially have an effect on the validity of the self-reporting of the behaviors measured by the YRBS by adolescent participants (Brener et al., 2013). As a result of the review of empirical literature, the CDC determined that self-reports of these behaviors are impacted by situational factors as well as cognitive factors, though the validity of these self-reported behaviors are not all threatened equally (Brener et al., 2013). The extent to which each behavior can be validated by an objective measure also differs from behavior to behavior – such as some items allowing for direct measures of behaviors, such as smoking rates – for validation (Brener et al., 2013).

The CDC also assessed the validity of two self-reported YRBS questions, height and weight, in 2000 (Brener et al., 2013). The measured height and weight were compared to self-reported data and the self-reported data was determined to be substantially reliable (Brener et al., 2013). However, on average, student participants underreported their weight by 3.5 pounds and

overreported their height by 2.7 inches (Brener et al., 2013). These self-reported measures as more favorable than what was measured indicates that the YRBS questionnaire results likely underrepresent the prevalence of overweight and obesity in adolescents (Brener et al., 2013).

Additionally, confounding variables can be addressed and minimized through the analysis of results, especially when confounding variables are not easily controlled through research design alone.

Construct validity. Since the researcher of the present study did not contribute to the development of the YRBS, the construct validity is important to investigate to identify if the YRBS constructs are consistent with the intent of the research at hand. As mentioned previously for the initial development of the YRBS questionnaire, federal agencies that corresponded with the six behavioral risk categories appointed a YRBS steering committee member by CDC request (Brener et al., 2013). Priority behaviors were then identified at a two-day workshop for steering committee members with the CDC in August 1989 to identify the priority behaviors and develop questions to measure those behaviors (Brener et al., 2013). Experts from other federal agencies alongside the CDC and steering committee members formed panels for the six priority health-risk behaviors (Brener et al., 2013). Researchers represented the National Institutes of Health, the Office of the Assistant Secretary for Health, the Health Resources and Services Administration, and the U.S. Department of Education with the CDC's survey research specialists from the National Center for Health Statistics (NCHS), CDC staff from the Division of Adolescent and School Health, and scientists from academic institutions (Brener et al., 2013). Additional school-related representatives included members of the Society of State Directors of Health, Physical Education, and Recreation (Brener et al., 2013).

The panels of experts were instructed to identify the only the behaviors that were the highest priority and therefore recommend a limited number of questions to measure the prevalence of the high priority behaviors (Brener et al., 2013). The first draft of the YRBS questionnaire was completed in October 1989 and then reviewed by education agency representatives from each of the fifty states, the District of Columbia, and four U.S. territories as well as sixteen local education agencies (Brener et al., 2013). The CDC NCHS survey research specialists also contributed suggests and comments on the questionnaire (Brener et al., 2013).

As stated previously, the current researcher ascribes to the definition of bullying consistent with that described by Olweus (1993). The first of two specific bullying items provides a definition of bullying ahead of the listed items. The 2015 and 2017 YRBS questionnaire provides the following definition of bullying:

> "Bullying is when 1 or more students tease, threaten, spread rumors about, hit, shove, or hurt another student over and over again. It is not bullying when 2 students of about the same strength or power argue or fight or tease each other in a friendly way."

This first bullying question inquires if the student has ever been bullied on school property, followed by the second bullying question asking whether the student has been bullied electronically - specifying that electronic bullying can include bullying through "e-mail, chat rooms, instant messaging, websites, or texting." The bullying items also specify a timeline, the past 12 months, to report when the bullying victimization had occurred. The bullying definition and bullying items were formulated based on a development and revision process by experts and representatives from within and outside the CDC (Brener et al., 2013). The bullying definition and items are consistent with the definition of bullying utilized for the present research study by Olweus (1993):

"A student is being bullied or victimized when he or she is exposed, repeatedly and over

time, to negative actions on the part of one or more other students."

The cutoff points of the YRBS for the past twelve months and presence of repetition ("over and

over again") aligns with the specificity supported by the current research, with cutoff points for

"repeated negative acts" to include instances of two to three times a month (Solberg & Olweus,

2003). The bullying behaviors listed are also consistent with negative acts reviewed in the

Introduction. The definition used, that negative actions refer to attempted or successfully carried

out injury or discomfort intentionally inflicted on another – is consistent with the YRBS

definition provided with examples including teasing, threatening, spreading rumors about,

hitting, shoving, or hurting another student (Brener et al., 2013; Olweus, 1993). Though not

overtly stated, the presence of "one or more" students bullying implies asymmetry between bully

and victim and therefore the imbalance of power criteria.

   External validity. While internal and construct validity address confounding factors and

causal relationships, external validity concerns the generalization of research results or taking the

experimental results beyond the narrow confines of the specific experiment and applying results

to different, more encompassing populations beyond the participants and environment of the

original experiment (McMillan & Schumacher, 2010).

   The sampling method for the YRBS provides a significant limitation to external validity

threats. The sample is not a convenience sample but a randomized nationally-representative

sample of students in the ninth through twelfth grades in the US, strengthening the current

research against external validity threats. Participants are collected using a cluster sample design

in three stages to obtain a sample that is nationally representative for the grade band (Brener et

al., 2013). The target population is all public and private school students in grades nine through

twelve in all US states and the District of Columbia (Brener et al., 2013). For the 2015 and 2017 YRBS, the sampling frame included all public, Catholic, or other private school students in the grades of ninth through twelfth (Centers for Disease Control and Prevention, 2016a, Centers for Disease Control and Prevention, 2018). Schools were selected from the sampling frame systematically and with a probability that was proportional to the enrollment of ninth through twelfth grade students enrolled in the school using the random start sampling technique (Centers for Disease Control and Prevention, 2016a, Centers for Disease Control and Prevention, 2018). The environment where the questionnaire is administered, in the regularly scheduled class period at the student participants' school of enrollment, protects against the threat of reactive arrangement and environmental threats.

Since the population is a representative sample of all students in public and private school settings in grades 9-12 across the US, the results can sufficiently be generalized to this grade band of students in the US. Though the sample is large, it is specific, and the generalizability of results is likely limited with regards to other grades or ages, adolescents attending nontraditional school settings, or adolescents outside of the US.

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Procedures

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Data Collection

The YRBS is conducted during odd-numbered years during the months of February through May (Brener et al., 2013). The national YRBS has been conducted under a contract with ICF Macro, Inc, an ICF International Company, and with CDC oversight since 1990 (Brener et al., 2013). The sample design and selection is the responsibility of the contractor with oversight (Brener et al., 2013). Once completing the selection process, collecting clearances for conducting the survey at the state, district, and school level is also the contractor's responsibility

(Brener et al., 2013). The contractor then works with the schools that were sampled to obtain

parental permission as well as select the classes and scheduled the data collection (Brener et al.,

2013). The data collectors are hired and trained by the contractor as well (Brener et al., 2013).

Training for the questionnaire administration includes following a common protocol as well as

coordinating the data collection and weighing and preparing the data for analysis (Brener et al.,

2013).

Parental permission is obtained before administering the YRBS at any site (Brener et al.,

2013). Certain school sites use active permission (e.g., parents must provide the school approval

before their child can participate), usually with a signed form that is returned to the school

(Brener et al., 2013). Other participating school sites utilize passive permission, which requires

parents to return a signed form if they deny permission for participation in the survey (Brener et

al., 2013). The vast majority of schools participating in the national YRBS use the passive

permission method. The national YRBS in 2011 reported 90% of schools utilizing passive

permission and 10% for active permission (Brener et al., 2013).

Trained data collectors travel to each school participating in the national YRBS. The

data collectors administer the questionnaires to the student participants by reading a standardized

script (Brener et al., 2013). An introduction to the survey is included in the script (Brener et al.,

2013). Information about the schools as well as the classrooms participating is also collected and

recorded, such as the grade level of classes in a sample, that is later used to weight data and for

verification of sample selections (Brener et al., 2013).

All YRBS procedures are designed to protect the privacy of the students through

anonymous and voluntary participation in the survey (Brener et al., 2013). All surveys are self-

administered for the duration of one class period with responses recorded on booklets or answer

sheets that are computer-scannable (Brener et al., 2013). Student desks are spread out throughout the classroom as much as possible to reduce the likelihood that individual student responses are visible to other students (Brener et al., 2013). Additionally, student participants are encouraged to use a provided piece of paper or envelope to cover responses during questionnaire completion (Brener et al., 2013). Once the questionnaire is completed by students, they are then instructed to seal the booklet or answer sheet in the envelope and place it in a box (Brener et al., 2013). As long as privacy can be ensured, absent students on the original day of collection can still elect to complete the national YRBS (Brener et al., 2013). Make-up days may be administered by the data collector, or if the data collector is not available, by school personnel (Brener et al., 2013). Make-up days for absent students increases the response rates for the YRBS and allows for a more representative sample. The collection of data from students that may be truant without the permission or knowledge of parents during the initial data collection are likely to engage in more health-risk behaviors than students present for the scheduled YRBS administration (Brener et al., 2013).

Data Processing

The national survey data processing is completed through the contractor, who scans completed questionnaires and sends the results in a SAS program dataset to the CDC (Brener et al., 2013). The CDC then converts the dataset to a dataset, which is processed by the Survey Data Management System (SDMS; Brener et al., 2013). The SDMS was developed by the CDC in 1999 to process all YRBS data and produce reports, converting to a web-based system in 2008 (Brener et al., 2013). The data are edited and cleaned by the SDMS to identify missing data and responses that are logically inconsistent or out-of-range (Brener et al., 2013). Neither response is assumed to be correct when two item responses are determined to be conflicting illogically and

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both are set to missing without assigning a value (Brener et al., 2013). When less than 20 responses remain valid after the editing process, the questionnaires are deleted from the dataset (Brener et al., 2013). The national dataset is processed in the same manner as state, territorial, tribal, and large urban school district surveys by the SDMS to preserve consistency (Brener et al., 2013).

Questionnaires are then excluded if they do not pass quality control checks by the CDC. For the 2011 survey, 78 questionnaires, or .05% of total surveys, were excluded due to failing quality-control checks (Brener et al., 2013). For height and weight in the 2011 survey, 182 questionnaires, or 1% of the total, had the data set to missing (Brener et al., 2013). After the data has been edited, the CDC sends the data to the national survey contractor statisticians to weight the data (Brener et al., 2013). The data is weighted by the student demographic characteristics of race/ethnicity and sex in addition to grade at school (Brener et al., 2013). Weights are applied in order to adjust for the nonresponse rates of student participants and the oversampling of students that are black and Hispanic (Brener et al., 2013). The overall weighted estimates are representative of all students attending public or private schools in the grades 9-12 by matching national projections for population during the survey year (Brener et al., 2013). The schools, classes, and students that refuse to participate are not replaced (Brener et al., 2013). The weighted data is then sent back to the CDC, where the weighted data is merged with the edited data file (Brener et al., 2013). For the purpose of the current study, the weighted data were utilized in the analysis to account for oversampling.

Data Analysis

A quantitative statistical analysis of the national 2015 and 2017 YRBS results will be conducted to determine if LDL students who are developing skills in the dominant local

language, or for the purpose of this study, English in the US, are bullied at higher rates compared

to their non-LDL peers. Since the YRBS was not developed to answer this specific research

question, the current analysis will employ a secondary-data analysis of specific items

administered for the 2015 and 2017 national YRBS questionnaire.

Data collected from the 2015 and 2017 administrations of the national YRBS will be

analyzed using the SPSS Statistics software by IBM. Due to the nominal and ordinal nature of

the data, nonparametric statistical procedures will be used. The four hypotheses can be answered

with a single statistical measure, a binary logistic regression. The following are the four research

questions utilized for this study.

Research question 1: Do Linguistically Diverse Learners have a greater likelihood of being

victims of bullying?

Hypothesis 1: Students that are LDL will report higher ratios of Bullying Victimization

than non-LDL students.

A binary logistic regression, a nonparametric test, was used to answer the first (and

subsequent) research question(s) due to the large sample size and dichotomous dependent

variable. The logistic regression statistical procedure involves one dependent variable and two

or more independent variables. It is similar to other types of regression procedures differing in

that the dependent variable is dichotomous (Hosmer Jr., Lemeshow, & Sturdivant, 2013; Peng &

So, 2002). Results for each independent variable are also reported in terms of odds ratios, or the

probability of an occurrence (Hosmer Jr. et al., 2013; Peng & So, 2002). Due to the categorical

nature of the dependent variable, a logistic regression is essentially attempting to predict group

membership (Hosmer Jr. et al., 2013; Peng & So, 2002). This type of regression produces a

regression equation that can predict the probability of an outcome for each category included in

the analysis (Hosmer Jr. et al., 2013; Peng & So, 2002). When reporting results, all probabilities

will be positive and range between 0 and 1 (Hosmer Jr. et al., 2013; Peng & So, 2002). This

procedure does not require assumptions about the distributions of the independent variables, such

as normal distribution, equal variances, or being linearly related resulting in greater flexibility

than found in other tests (Hosmer Jr. et al., 2013; Peng & So, 2002).

For this logistic regression, the dependent variable is the dichotomous response, yes or

no, to the Bullying Victimization question. The independent variable is LDL Status with four

categories with ordinal values (Very well, Well, Not well, and Not at all). The YRBS Data

User's Guide (2015, 2017) indicate grouping the responses into two categories. Very well and

Well are combined into one variable and Not well and Not at all are grouped into a second. To

enter the independent variables into the regression, a backward stepwise elimination was used.

Specifically, the Backward Elimination (Wald) was used in which removal testing in the

regression is based on the probability of the Wald statistic as a cutoff point. When little or no

prior knowledge is available, a Forward Elimination is typically used. Due to the prior

knowledge of bullying victimization, as outlined in Chapter II, the Backward Elimination (Wald)

was selected and used for the stepwise elimination of the logistic regression to answer the

research questions.

The null and alternative hypotheses for the first research question are listed below in

addition to the alpha level required to reject the null hypothesis and accept the alternative

hypothesis.

H_0 = there is no difference between the Bullying Victimization rates of students that self-

report as LDL or non-LDL ($\beta i = 0$)

H_1 = students that are LDL will report significantly higher rates of Bullying

Victimization ($\beta i \neq 0$; $\alpha < .05$)

Research Question 2: Does the sex of Linguistically Diverse Learners impact the likelihood of being victims of bullying?

Hypothesis 1: Male students that are LDL will report higher ratios of Bullying

Victimization than female students that are LDL.

The binary logistic regression was used to answer the second research question, described in more detail for the first research question. The logistic regression for the second research question will use the dichotomous Bullying Victimization responses (yes or no) as the dependent variable using the student population that responded with "Not well" or "Not at all" to the LDL Status question. The independent variable is Sex with two categories (Female and Male). Additional potentially confounding factors will be analyzed within the logistic regression as in the previous research question.

The null and alternative hypotheses and alpha level to reject the null hypothesis for the second research question are listed below.

H_0 = there is no difference between the Bullying Victimization rates of male and female students that are LDL ($\beta_i = 0$)

H_1 = male students that are LDL will report significantly higher rates of Bullying

Victimization ($\beta_i \neq 0$; $\alpha < .05$)

Research Question 3: Does the grade level of Linguistically Diverse Learners impact the likelihood of being a victim of bullying?

Hypothesis 1: Ninth grade students that are LDL will report higher ratios of Bullying

Victimization than non-LDL students in the higher grade levels.

The binary logistic regression was used to answer the third research question. The logistic regression used the dichotomous Bullying Victimization responses as the dependent variable. The independent variables are LDL Status with two categories and Grade with two categories ($9^{th}/10^{th}$ and $11^{th}/12^{th}$). Though initially with four categories (9th, 10th, 11th, and 12th), this variable was condensed into two categories due to sample sizes being too small for some categories, as discussed in further detail in Chapter IV. In addition, other potentially confounding factors will be analyzed within the logistic regression.

The null and alternative hypotheses and alpha level to reject the null hypothesis for the third research question are listed below.

H_0 = there is no difference between the Bullying Victimization rates of LDL students by grade level ($\beta i = 0$)

H_1 = LDL students will report significantly higher rates of Bullying Victimization in 9th grade ($\beta i \neq 0$; $\alpha < .05$)

Research Question 4: Does the racial or ethnic identity of Linguistically Diverse Learners impact the likelihood of being victims of bullying?

Hypothesis 1: Students identifying as Nonwhite and LDL will report higher ratios of Bullying Victimization than their White LDL peers and White and Nonwhite non-LDL counterparts.

The binary logistic regression was used to answer the fourth research question. The logistic regression statistical procedure is explained in more detail in the first hypothesis listed above. The logistic regression for the final question used the dichotomous Bullying Victimization responses as the dependent variable (response of yes or no). The independent variables are LDL Status with four categories and Race with two categories (Nonwhite and

White). Other potentially confounding factors will similarly be analyzed within the logistic regression as in the previous research questions.

The null and alternative hypotheses and alpha level to reject the null hypothesis for the fourth research question are listed below.

H_0 = there is no difference between the Bullying Victimization rates of students with LDL by race ($\beta i = 0$)

H_1 = Nonwhite students that identify as LDL will report significantly higher rates of Bullying Victimization ($\beta i \neq 0$; $\alpha < .05$)

Summary

In this chapter, I identified the research design for the current study, including a description of the sample, methods for data collection, and a description of the survey. This chapter also included a description of the general methods for data analysis that were used to test the hypotheses of this study. In the next chapter, I will review the data analysis that was conducted.

CHAPTER IV – Results

The information that follows was used for the statistical analysis of the 2015 and 2017 YRBS questionnaire results to answer the research questions presented in this study. The chapter begins with the preparation of the data for analysis followed by the demographic information of the respondents. Then, the results of the main binary logistic regression are analyzed as the primary statistical analyses followed by a discussion of the assumptions of a logistic regression.

Data Preparation

As mentioned previously, data were edited and cleaned for the national YRBS by the CDC's Survey Data Management System to identify missing data and responses that are logically inconsistent or out-of-range (Brener et al., 2013). Prior to public access, some questionnaires are deleted from the dataset when fewer than 20 responses remain valid after the editing process (Brener et al., 2013). The CDC's contractor statisticians weight the data by the student demographic characteristics of race/ethnicity and sex in addition to grade at school to adjust for the nonresponse rates of student participants and the oversampling of students that are black and Hispanic (Brener et al., 2013). The overall weighted estimates are representative of all students attending public or private schools in the grades 9-12 by matching national projections for population during the survey year (Brener et al., 2013). Data for this analysis were converted using the weights provided in the YRBS dataset from the CDC in the SPSS software.

Response rates for the 2015 national YRBS included a 69% school response rate with 125 of the sampled schools participating out of the 180 schools sampled (Centers for Disease Control and Prevention, 2016a). The student population sampled 18,165 students in grades nine through twelve (Centers for Disease Control and Prevention, 2016a). Of this sampled group,

15,713 students returned questionnaires with 15,624 questionnaires determined to be usable after data editing, resulting in a student response rate of 86% (Centers for Disease Control and Prevention, 2016a). The overall response rate for the 2015 national YRBS was calculated as 60% (Centers for Disease Control and Prevention, 2016a). The YRBS administration in 2017 yielded an identical overall response rate, also calculated as 60% (Centers for Disease Control and Prevention, 2018). The school response rate was 75%, with 144 schools participating out of the 192 schools sampled (Centers for Disease Control and Prevention, 2018). Of the 18,324 students sampled in 2017 and 14,956 submitting questionnaires, the student response rate was 81% with 14,765 of the questionnaires being usable after the data editing (Centers for Disease Control and Prevention, 2018).

To begin the analysis, the data were further edited to include only respondents with complete data for Question 99, inquiring about English-speaking ability. As stated above, the total usable sample size for the 2015 YRBS was 15,624 questionnaires and 14,765 for the 2017 YRBS administration. Approximately 28% and 27%, respectively, of the 2015 and 2017 YRBS respondents did not respond to Question 99. These questionnaires, a total of 8,465, were deleted based on nonresponses leaving 11,213 usable questionnaires of the 2015 data and 10,711 of the 2017 data.

Table 1

Missing Data – 2015 and 2017 YRBS

Year	Variable		Sample Size	Percentage
2015	LDL Status	Response	11,213	72
		No Response	4,411	28
		Total	15,624	100

Year			Sample Size	Percentage
2017	LDL Status	Response	10,711	73
		No Response	4,054	27
		Total	14,765	100

Some additional relevant items lacked responses as well, further reducing the total number of usable questionnaires for the current study. For analysis with the 2015 YRBS data, an additional 3% of questionnaires were unusable and omitted from the analyses due to missing data. The 2017 YRBS showed consistent rates, similarly with an additional 3% of questionnaires having missing data and thus being omitted.

Table 2

Data Omitted from Analysis – 2015 and 2017 YRBS

Year		Sample Size	Percentage
2015	Response	10,835	97
	No Response	378	3
	Total	11,213	100
2017	Response	10,373	97
	No Response	338	3
	Total	10,711	100

The combination of multiple years of national YRBS data is recommended to combat small sample sizes and increase precision. The Mantel-Haenszel Test of Conditional Independence was conducted to determine if the 2015 and 2017 national YRBS could be combined for analysis. With the dependent variable, bullying victimization, by LDL status

inputted, the results of the Mantel-Haenszel Test yielded a p-value of .000, indicating that the

two datasets were significantly different and too dissimilar to combine. The two datasets also

survey distinct cohorts of students. The respondents belonging to distinct cohorts further

supports the datasets necessitating separate analyses. The proximal sections therefore represent

an analysis of each survey year, 2015 and 2017, separately.

Table 3

Tests of Conditional Independence

	Chi-Squared	*df*	p-value
Mantel-Haenszel	12.894	1	.000

To further investigate the dissimilarity of the data sets, prevalence data was calculated.

The overall prevalence of bullying was calculated for each dataset, 2015 and 2017, separately.

Prevalence of bullying was calculated by dividing the "yes" responses by the total number of

respondents and multiplying by 100. The overall bullying rate for the 2015 national YRBS was

a higher percentage than measured in 2017. In consideration with the Mantel-Haenszel results,

bullying rates for the 2015 data set were significantly higher than measured in the 2017 national

YRBS.

Table 4

Prevalence of Bullying Victimization by Year

		Bullying Victimization		
YRBS Year	Total	Yes	No	% Bullied
2015	15,448	2,956	12,494	19.13%
2017	14,606	2,665	11,941	18.24%

Descriptive Statistics

Descriptive statistics for the variables are provided in the subsequent tables. The sample size and frequencies for each variable are reported. Due to the dichotomous nature of the variables, means and standard deviations are not reported. Referencing Crosstabs, if fewer than 5 respondents fell into one cell, the variable was combined to increase the number of respondents in that category. Once the variables were analyzed, the variables used for the binary logistic regression analysis are provided below in Table 6 with variable descriptions.

Table 5

Sample Size and Frequencies

Year	Variable	Variable Description	N
2015	Bullying	Yes	2,627
		No	9,992
	LDL Status	Very Well	10,788
		Well	1,597
		Not Well	152
		Not at All	82
	Sex	Female	7,479
		Male	7,864
	Grade	9th	4,178
		10th	3,936
		11th	3,674
		12th	3,552
	Race	American Indian/Alaska Native	91

Year	Category	Subcategory	Count
		Asian	567
		Black or African American	2,042
		Hispanic/Latino	3,380
		Native Hawaiian/Other Pacific Islander	99
		White	8,267
		Multiple Races (Non-Hispanic)	703
2017	Bullying	Yes	2,786
		No	11,851
	LDL Status	Very Well	10,551
		Well	1,764
		Not Well	131
		Not at All	99
	Sex	Female	7,371
		Male	7,157
	Grade	9th	3,949
		10th	3,728
		11th	3,485
		12th	3,359
	Race	American Indian/Alaska Native	68
		Asian	504
		Black or African American	1,910
		Hispanic/Latino	3,280

	109
Native Hawaiian/Other Pacific Islander	109
White	7,685
Multiple Races (Non-Hispanic)	794

Table 6

Bullying Analysis Crosstabs – 2015 and 2017 YRBS

				2015 Bullying			2017 Bullying		
Grade	Race	Sex	LDL Status	No	Yes	Total	No	Yes	Total
9th	American Indian/	Female	non-LDL	5	3	8	6	1	7
	Alaska Native		LDL	0	0	0	1	0	1
		Male	non-LDL	18	2	20	8	3	11
			LDL	1	0	1	1	0	1
	Asian	Female	non-LDL	37	16	53	31	8	39
			LDL	1	1	2	4	0	4
		Male	non-LDL	77	3	80	35	7	42
			LDL	1	0	1	1	0	1
	Black or African	Female	non-LDL	129	49	178	171	31	202
	American		LDL	0	0	0	7	1	8
		Male	non-LDL	189	29	218	190	28	218
			LDL	7	1	8	3	0	3
	Hispanic/Latino	Female	non-LDL	280	67	347	273	105	378

			LDL	4	5	9	6	3	9
		Male	non-LDL	308	62	370	312	66	378
			LDL	7	5	12	8	3	11
	Native Hawaiian/ Other Pacific Islander	Female	non-LDL	5	0	5	12	3	15
			LDL	0	0	0	0	0	0
		Male	non-LDL	6	1	7	10	1	11
			LDL	9	0	9	0	0	0
	White	Female	non-LDL	576	282	858	669	241	910
			LDL	4	1	5	2	2	4
		Male	non-LDL	721	187	908	661	209	870
			LDL	2	1	3	7	7	14
	Multiple Races	Female	non-LDL	52	32	84	58	33	91
			LDL	0	0	0	0	0	0
		Male	non-LDL	54	23	77	67	30	97
			LDL	0	3	3	0	0	0
10th	American Indian/ Alaska Native	Female	non-LDL	9	1	10	2	4	6
			LDL	0	0	0	0	0	0
		Male	non-LDL	5	2	7	4	0	4
			LDL	0	0	0	0	0	0
	Asian	Female	non-LDL	33	10	43	44	11	55
			LDL	0	0	0	3	1	4
		Male	non-LDL	34	9	43	34	5	39
			LDL	7	5	12	1	1	2

	Black or African American	Female	non-LDL	172	24	196	155	28	183
			LDL	1	0	1	6	0	6
		Male	non-LDL	118	10	128	158	26	184
			LDL	8	2	10	10	0	10
	Hispanic/Latino	Female	non-LDL	263	68	331	263	62	325
			LDL	13	0	13	4	0	4
		Male	non-LDL	318	29	347	323	43	366
			LDL	10	2	12	14	1	15
	Native Hawaiian/ Other Pacific Islander	Female	non-LDL	2	0	2	10	2	12
			LDL	0	0	0	0	0	0
		Male	non-LDL	16	1	17	8	0	8
			LDL	0	0	0	0	0	0
	White	Female	non-LDL	661	307	968	693	249	942
			LDL	0	0	0	1	0	1
		Male	non-LDL	707	186	893	637	152	789
			LDL	10	1	11	10	3	13
	Multiple Races	Female	non-LDL	42	25	67	46	35	81
			LDL	0	0	0	0	2	2
		Male	non-LDL	56	9	65	53	23	76
			LDL	0	4	0	1	0	1
11th	American Indian/ Alaska Native	Female	non-LDL	5	1	6	2	2	4
			LDL	0	0	0	0	0	0
		Male	non-LDL	7	0	7	10	2	12

		LDL	0	0	0	0	0	0
Asian	Female	non-LDL	32	6	38	50	5	55
		LDL	5	0	5	3	0	3
	Male	non-LDL	33	9	42	46	6	52
		LDL	0	0	0	5	0	5
Black or African American	Female	non-LDL	139	13	152	135	40	175
		LDL	6	0	6	1	0	1
	Male	non-LDL	135	26	161	135	13	148
		LDL	0	3	3	5	4	9
Hispanic/Latino	Female	non-LDL	236	69	305	232	56	288
		LDL	1	4	5	4	2	6
	Male	non-LDL	265	40	305	306	31	337
		LDL	9	6	15	10	2	12
Native Hawaiian/ Other Pacific Islander	Female	non-LDL	4	0	4	12	1	13
		LDL	1	0	1	0	0	0
	Male	non-LDL	5	6	11	14	1	15
		LDL	0	0	0	0	0	0
White	Female	non-LDL	571	256	827	608	244	852
		LDL	2	0	2	0	0	0
	Male	non-LDL	736	151	887	670	119	789
		LDL	1	3	4	11	3	14
Multiple Races	Female	non-LDL	44	14	58	82	27	109
		LDL	0	0	0	1	0	1

		Male	non-LDL	52	3	55	58	7	65
			LDL	3	0	3	0	0	0
12th	American Indian/ Alaska Native	Female	non-LDL	1	2	3	5	0	5
			LDL	0	0	0	0	0	0
		Male	non-LDL	11	2	13	7	0	7
			LDL	0	0	0	2	0	2
	Asian	Female	non-LDL	47	3	50	46	9	55
			LDL	2	0	2	1	0	1
		Male	non-LDL	63	7	70	49	1	50
			LDL	4	1	5	3	1	4
	Black or African American	Female	non-LDL	135	9	144	140	13	153
			LDL	7	2	9	0	0	0
		Male	non-LDL	129	13	142	130	15	145
			LDL	2	0	2	1	1	2
	Hispanic/Latino	Female	non-LDL	249	43	292	244	54	298
			LDL	3	0	3	6	2	8
		Male	non-LDL	255	32	287	268	18	286
			LDL	3	3	6	5	0	5
	Native Hawaiian/ Other Pacific Islander	Female	non-LDL	0	0	0	9	0	9
			LDL	0	0	0	0	0	0
		Male	non-LDL	7	2	9	7	0	7
			LDL	1	0	1	0	0	0
	White	Female	non-LDL	653	204	857	728	147	875

		LDL	0	0	0	3	0	3
	Male	non-LDL	759	121	880	663	115	778
		LDL	12	6	18	11	3	14
Multiple Races	Female	non-LDL	59	26	85	63	11	74
		LDL	0	2	2	0	1	1
	Male	non-LDL	57	5	62	62	11	73
		LDL	0	0	0	0	0	0

The following variables had fewer than five respondents in a cell. For the Race variable in both datasets, all variable descriptors had cells with fewer than five respondents. This variable was transformed to collapse the descriptors of American-Indian/Alaska Native, Asian, Black or African American, Hispanic/Latino, Native Hawaiian/Other Pacific Islander, and Multiple Races in the Race variable, creating the variable descriptors of Nonwhite and White. Consistent with the YRBS Data User's Guide, the other transformation necessary was for LDL Status; transforming from four variable descriptors to two, non-LDL (Very Well and Well) and LDL (Not Well and Not at All). Finally, the Grade variable yielded cells with fewer than five respondents. The Grade variable was transformed to combine the 9th and 10th grades and the 11th and 12th grades.

Table 8 provides the variables and variable descriptions used in the proximal analysis using a binary logistic regression.

Table 7

Variables – 2015 and 2017 YRBS

Variable	Variable Description
Bullying	Yes=1, No=0
LDL Status	Non-LDL=0, LDL=1
Sex	Female=0, Male=1
Grade	$9^{th}/10^{th}$=1, $11^{th}/12^{th}$=0
Race	Nonwhite=1, White=0

Primary Statistical Analysis

Research Question 1

Do Linguistically Diverse Learners have a greater likelihood of being victims of bullying?

Hypothesis 1: Students that are LDL will report higher ratios of Bullying Victimization than non-LDL students.

H_0 = there is no difference between the Bullying Victimization rates of LDL and non-LDL students ($\beta i = 0$)

H_1 = students that are LDL will report significantly higher rates of Bullying Victimization ($\beta i \neq 0$; $\alpha < .05$)

The first research question, for both the 2015 and 2017 national YRBS data, was answered using a binary logistic regression. Results for this research question are analyzed by survey year below.

2015 YRBS. A backward Wald logistic regression was conducted to determine if the IVs (Sex, Grade, LDL Status, and Race) predicted reporting of Bullying Victimization (yes or no) on

the 2015 national YRBS. The results of the logistic regression are presented in Tables 13, 14,

15, and 16. Though outliers are identified with Mahalanobis chi-square distance, data screening

led to the elimination of zero outliers due to the significant portion of LDL respondents

identified as outliers. Regression results indicated that the overall model fit of one predictor,

LDL Status, was questionable as indicated by extremely large model fit indices (-2 Log

Likelihood = 12266.33). However, the model significantly predicted group membership and was

statistically reliable in distinguishing between youth who were and were not victims of bullying

in the last 12 months, x^2 (3) = 319.35, $p < .001$. The model was accurate and correctly classified

79.1% of the cases. Regression coefficients are presented in Table 15. Wald statistics indicated

that the variable, LDL Status, significantly predicts bullying victimization, Bullying. Odds ratios

for LDL Status indicate that self-identified LDL youth are over two times more likely to be

victims of bullying than their non-LDL counterparts.

Table 8

YRBS 2015 - Omnibus Tests of Model Coefficients

Step		Chi-square	df	Sig.
1	Step	319.348	4	.000
	Block	319.348	4	.000
	Model	319.348	4	.000

Table 9

YRBS 2015 - Model Summary

Step	-2 Log Likelihood	Cox & Snell R Square	Nagelkerke R Square
1	12266.328	0.026	0.040

Table 10

YRBS 2015 - Classification Table

			Predicted		
			Bullying		
Step	Observed		No	Yes	% Correct
1ᵃ	Bullying	No	9727	4	100
		Yes	2561	2	.1
	Overall %				79.1

Table 11

YRBS 2015 - Variables in the Equation

Step	Variable	B	S.E.	Wald	df	Sig.	Exp(B)
Step 1ᵃ	LDL	.768	.157	23.921	1	.000	2.155

a. Variable(s) entered on step 1: LDL Status

2017 YRBS. A backward Wald logistic regression was conducted to determine if the IVs (Sex, Grade, LDL Status, and Race) predicted Bullying Victimization (yes or no) on the 2017 national YRBS. The results of the logistic regression are presented in Tables 17, 18, 19, and 20. Though outliers are identified with Mahalanobis chi-square distance, data screening led to the elimination of zero outliers due to the significant portion of LDL respondents identified as outliers. Regression results indicated that the overall model fit was statistically reliable in distinguishing between youth who were and were not victims of bullying in the last 12 months; x^2 (3) = 202.09, $p < .001$. The overall fit of the model, however, was questionable due to the extremely large model fit indices (-2 Log Likelihood = 11920.03). Despite the questionable fit, the model was accurate - correctly classifying 80.5% of the cases. Regression coefficients are

presented in Table 20. Wald statistics indicated that the variable, LDL Status, does not

significantly predict bullying victimization for the 2017 national YRBS.

Table 12

YRBS 2017 - Omnibus Tests of Model Coefficients

Step		Chi-square	df	Sig.
1	Step	204.580	4	.000
	Block	204.580	4	.000
	Model	204.580	4	.000
2[a]	Step	-2.486	1	.115
	Block	202.094	3	.000
	Model	202.094	3	.000

Table 13

YRBS 2017 - Model Summary

Step	-2 Log Likelihood	Cox & Snell R Square	Nagelkerke R Square
1	11917.545[a]	.017	.026
2	11920.031[a]	.016	.026

a. Estimation terminated at iteration number 4 because parameter estimates changed by less than .001.

Table 14

YRBS 2017 - Classification Table

	Predicted
	Bullying

Step	Observed		No	Yes	% Correct
1[a]	Bullying	No	9874	0	100.0
		Yes	2397	0	0
	Overall %				80.5
2[b]	Bullying	No	9874	0	100.0
		Yes	2397	0	0
	Overall %				80.5

Table 15

YRBS 2017 - Variables in the Equation

Step	Variable	B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	LDL	.279	173	2.614	1	.106	1.322
Step 2[b]	LDL	--	--	--	--	--	--

   a.   Variable(s) entered on step 1: LDL Status

   b.   Variable(s) entered on step 2: LDL Status

Research Question 2

Does the sex of Linguistically Diverse Learners impact the likelihood of being victims of bullying?

Hypothesis 1: Male students that are LDL will report higher ratios of Bullying Victimization than female students that are LDL.

H_0 = there is no difference between the Bullying Victimization rates of male and female students that are LDL ($\beta_i = 0$)

H_1 = male students that are LDL will report significantly higher rates of Bullying Victimization ($\beta_i \neq 0$; $\alpha < .05$)

The second research question, for both the 2015 and 2017 national YRBS data, was answered using a binary logistic regression. Results for this research question are analyzed by survey year below.

2015 YRBS. A backward Wald logistic regression was conducted to determine if the IVs (Sex, Race, LDL Status, Grade, LDL by Sex, LDL by Race, and LDL by Grade) are predictors of Bullying Victimization (yes or no) on the 2015 national YRBS. Results of the logistic regression are presented in Tables 21, 22, 23, and 24. Data screening led to the elimination of zero outliers. Regression results indicated that the overall model fit was statistically reliable in distinguishing between youth who were and were not victims of bullying in the last 12 months and significantly predicted group membership, x^2 (6) = 333.02, $p < .001$, though the fit itself was questionable due to the extremely large model fit indices (-2 Log Likelihood = 12252.36). The model was fairly accurate and correctly classified 79.2% of the cases. Regression coefficients are presented in Table 24. Wald statistics indicated that the variable significantly predicts bullying victimization. Odds ratios for LDL Status by Sex indicate that male youth that self-report as LDL are 2.7 times more likely to be victims of bullying than their male non-LDL and female non-LDL or LDL counterparts.

Table 16

YRBS 2015 - Omnibus Tests of Model Coefficients

Step		Chi-square	df	Sig.
1	Step	333.552	7	.000
	Block	333.552	7	.000
	Model	333.552	7	.000
2[a]	Step	-.528	1	.631

Block	333.024	6	.000
Model	333.024	6	.000

a. A negative Chi-squares value indicates that the Chi-squares value has decreased from the previous step.

Table 17

YRBS 2015 - Model Summary

Step	-2 Log Likelihood	Cox & Snell R Square	Nagelkerke R Square
1	12252.124[a]	.027	.042
2	12252.355[a]	.027	.042

a. Estimation terminated at iteration number 4 because parameter estimates changed by less than .001.

Table 18

YRBS 2015 - Classification Table[a]

			Predicted		
			Bullying		
Step	Observed		No	Yes	% Correct
1	Bullying	No	9732	0	100.0
		Yes	2562	0	0
	Overall %				79.2
2	Bullying	No	9732	0	100.0
		Yes	2562	0	0
	Overall %				79.2

a. The cut value is .500

Table 19

YRBS 2015 - Variables in the Equation

Step	Variable	B	S.E.	Wald	df	Sig.	Exp(B)
1[a]	Sex	.604	.046	171.597	1	.000	.546
	Race	-.504	.048	110.736	1	.000	.604
	LDL Status	-.219	.460	.227	1	.634	.803
	Grade	.272	.046	35.176	1	.000	1.313
	LDL by Sex	1.106	.354	9.753	1	.002	3.023
	LDL by Race	.729	.393	3.441	1	.064	2.072
	LDL by Grade	.599	.317	3.575	1	.059	.549
	Constant	-1.020	.042	577.055	1	.000	.360
2	Sex	-.603	.046	171.347	1	.000	.547
	Race	-.503	.048	110.505	1	.000	.605
	Grade	.273	.046	35.591	1	.000	1.314
	LDL by Sex	1.003	.277	13.127	1	.000	2.728
	LDL by Race	.596	.273	4.776	1	.029	1.815
	LDL by Grade	-.627	.308	4.138	1	.042	.534
	Constant	-1.022	.042	584.084	1	.000	.360

a. Variable(s) entered on step 1: Sex, Race, LDL Status, Grade, LDL * Sex, LDL * Race, LDL * Grade

2017 YRBS. A backward Wald logistic regression was conducted to determine if the IVs (Sex, Race, LDL Status, Grade, LDL by Sex, LDL by Race, and LDL by Grade) were predictors of Bullying Victimization on the 2017 national YRBS. Results of the logistic regression are

presented in Tables 25, 26, 27, and 28. Data screening led to the elimination of zero outliers.

Regression results indicated that the overall model fit was statistically reliable in distinguishing

between youth who were and were not victims of bullying in the last 12 months and significantly

predicted group membership, x^2 (3) = 202.09, $p < .001$, though the fit itself was questionable due

to the extremely large model fit indices (-2 Log Likelihood = 11920.03). Nevertheless, the

model was fairly accurate and correctly classified 80.5% of the cases. Regression coefficients

are presented in Table 28. Wald statistics indicated that the variable, LDL by Sex, does not

significantly predict bullying victimization.

Table 20

YRBS 2017 - Omnibus Tests of Model Coefficients

Step		Chi-square	df	Sig.
1	Step	206.875	7	.000
	Block	206.875	7	.000
	Model	206.875	7	.000
2[a]	Step	-.243	1	.622
	Block	206.632	6	.000
	Model	206.632	6	.000
3[a]	Step	-.861	1	.353
	Block	205.771	5	.000
	Model	205.771	5	.000
4[a]	Step	-1.191	1	.275
	Block	204.580	4	.000
	Model	204.580	4	.000

5[a]	Step	-2.486	1	.115
	Block	202.094	3	.000
	Model	202.094	3	.000

a. A negative Chi-squares value indicates that the Chi-squares values has decreased from

the previous step.

Table 21

YRBS 2017 - Model Summary

Step	-2 Log Likelihood	Cox & Snell R Square	Nagelkerke R Square
1	11915.251[a]	.017	.027
2	11915.493[a]	.017	.027
3	11916.354[a]	.017	.026
4	11917.545[a]	.017	.026
5	11920.031[a]	.016	.026

a. Estimation terminated at iteration number 4 because parameter estimates changed by less

than .001.

Table 22

YRBS 2017 - Classification Table[a]

			Predicted		
			Bullying		% Correct
Step	Observed		No	Yes	
1	Bullying	No	9974	0	100.0
		Yes	2397	0	.0

					Overall %		80.5

2	Bullying	No	9874	0		100.0
		Yes	2397	0		.0
	Overall %					80.5
3	Bullying	No	9874	0		100.0
		Yes	2397	0		.0
	Overall %					80.5
4	Bullying	No	9874	0		100.0
		Yes	2397	0		.0
	Overall %					80.5
5	Bullying	No	9874	0		100.0
		Yes	2397	0		.0
	Overall %					80.5

a. The cut value is .500

Table 23

YRBS 2017 - Variables in the Equation

Step	Variable	B	S.E.	Wald	df	Sig.	Exp(B)
1[a]	Sex	-.466	.047	90.236	1	.000	.640
	Race	-.326	.048	46.809	1	.000	.722
	LDL Status	.535	.475	1.270	1	.260	1.708
	Grade	.376	.047	63.971	1	.000	1.456
	LDL by Sex	.188	.383	.242	1	.623	1.207
	LDL by Race	-.304	.374	.663	1	.416	.738

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	LDL by Grade	-.308	.349	.779	1	.377	.735
	Constant	-1.290	.044	853.974	1	.000	.275
2	Sex	-.444	.047	90.498	1	.000	.642
	Race	-.326	.048	46.826	1	.000	.722
	LDL Status	.702	.332	4.480	1	.034	2.017
	Grade	.376	.047	63.961	1	.000	1.456
	LDL by Race	-.361	.358	1.021	1	.312	.697
	LDL by Grade	-.325	.348	.870	1	.351	.723
	Constant	-1.291	.044	857.674	1	.000	.275
3	Sex	-.433	.047	90.291	1	.000	.642
	Race	-.325	.048	46.790	1	.000	.722
	LDL Status	.533	.282	3.558	1	.059	1.703
	Grade	.370	.047	63.151	1	.000	1.447
	LDL by Race	-.393	.357	1.206	1	.272	.675
	Constant	-1.288	.044	859.475	1	.000	.276
4	Sex	-.441	.047	89.622	1	.000	.644
	Race	-.332	.047	49.565	1	.000	.717
	LDL Status	.279	.173	2.614	1	.106	1.322
	Grade	.369	.047	62.999	1	.000	1.447
	Constant	-1.286	.044	858.801	1	.000	.276
5	Sex	-.437	.046	88.403	1	.000	.646
	Race	-.327	.047	48.264	1	.000	.721
	Grade	.370	.047	63.146	1	.000	1.447

Constant	-1.285	.044	858.080	1	.000	.277

a. Variable(s) entered on step 1: Sex, Race, LDL Status, Grade, LDL * Sex, LDL * Race,

LDL * Grade

Research Question 3

Does the grade level of Linguistically Diverse Learners impact the likelihood of being a

victim of bullying?

Hypothesis 1: Ninth grade students that are LDL will report higher ratios of Bullying

Victimization than non-LDL students in the higher grade levels.

H_0 = there is no difference between the Bullying Victimization rates of LDL

students by grade level $(\beta i = 0)$

H_1 = LDL students will report significantly higher rates of Bullying Victimization

in 9th grade $(\beta i \neq 0; \alpha < .05)$

A binary logistic regression was used for the analysis of the third research question, for

both the 2015 and 2017 national YRBS data. Results for this research question are analyzed by

survey year below.

2015 YRBS. A backward Wald logistic regression was conducted to determine if the IVs

(Sex, Race, LDL Status, Grade, LDL by Sex, LDL by Race, and LDL by Grade) are predictors

of Bullying Victimization (yes or no) on the 2015 national YRBS. Results of the logistic

regression are presented in Tables 21, 22, 23, and 24. Data screening led to the elimination of

zero outliers. As stated for the previous question, regression results indicated that the overall

model fit of was statistically reliable in distinguishing between youth who were and were not

victims of bullying in the last 12 months, x^2 (6) = 333.02, $p < .001$, though the fit itself was

questionable due to the extremely large model fit indices (-2 Log Likelihood = 12252.36). The

100

model was fairly accurate and correctly classified 79.2% of the cases. Regression coefficients

are presented in Table 24. Wald statistics indicated that the variable, LDL by Grade,

significantly predicted bullying victimization. However, odds ratios for LDL by Grade indicate

little change in the likelihood of bullying victimization for 9th and 10th grade youth self-reporting

as LDL ($OR = .53$).

       2017 YRBS. A backward Wald logistic regression was conducted to determine if the

IVs (Sex, Race, LDL Status, Grade, LDL by Sex, LDL by Race, and LDL by Grade) were

predictors of Bullying Victimization on the 2017 national YRBS. Results of the logistic

regression are presented in Tables 25, 26, 27, and 28. Data screening led to the elimination of

zero outliers. Regression results indicated that the overall model fit was statistically reliable in

distinguishing between youth who were and were not victims of bullying in the last 12 months

and significantly predicted group membership, x^2 (3) = 202.09, $p < .001$, although again, the fit

itself was questionable due to the extremely large model fit indices (-2 Log Likelihood =

11920.03). The model was fairly accurate and correctly classified 80.5% of the cases.

Regression coefficients are presented in Table 28. However, Wald statistics indicated that the

variable, LDL by Grade, does not significantly predict the likelihood of being bullied.

Research Question 4

       Does the racial or ethnic identity of Linguistically Diverse Learners impact the likelihood

of being victims of bullying?

       Hypothesis 1: Students identifying as Nonwhite and LDL will report higher ratios of

       Bullying Victimization than their White LDL peers and White and Nonwhite non-LDL

       counterparts.

H_0 = there is no difference between the Bullying Victimization rates of students with LDL by race ($\beta i = 0$)

H_1 = Nonwhite students that identify as LDL will report significantly higher rates of Bullying Victimization ($\beta i \neq 0$; $\alpha < .05$)

For both the 2015 and 2017 national YRBS data, a binary logistic regression was used for the analysis of the fourth and final research question. Results for this research question are analyzed by survey year below.

2015 YRBS. A backward Wald logistic regression was conducted to determine if the IVs (Sex, Race, LDL Status, Grade, LDL by Sex, LDL by Race, and LDL by Grade) are predictors of Bullying Victimization (yes or no) on the 2015 national YRBS. Results of the logistic regression are presented in Tables 21, 22, 23, and 24. Data screening led to the elimination of zero outliers. Regression results indicated that the overall model fit of was statistically reliable in distinguishing between youth who were and were not victims of bullying in the last 12 months, x^2 (6) = 333.02, $p = .002$, while the fit itself was questionable due to the extremely large model fit indices (-2 Log Likelihood = 12252.36). The model was fairly accurate and correctly classified 79.2% of the cases. Regression coefficients are presented in Table 24. Wald statistics indicated that the variable, LDL by Race, significantly predicts bullying victimization. Odds ratios for LDL by Race indicate little change in the likelihood of bullying victimization for nonwhite youth that are LDL ($OR = 1.06$).

2017 YRBS. A backward Wald logistic regression was conducted to determine if the IVs (Sex, Race, LDL Status, Grade, LDL by Sex, LDL by Race, and LDL by Grade) were predictors of Bullying Victimization on the 2017 national YRBS. Results of the logistic regression are presented in Tables 25, 26, 27, and 28. Data screening led to the elimination of

zero outliers. Regression results indicated that the overall model fit was statistically reliable in distinguishing between youth who were and were not victims of bullying in the last 12 months and significantly predicted group membership, x^2 (3) = 202.09, $p < .001$, though the fit itself was questionable due to the extremely large model fit indices (-2 Log Likelihood = 11920.03). The model was fairly accurate and correctly classified 80.5% of the cases. Regression coefficients are presented in Table 28. Wald statistics indicated that the variable, LDL by Race, does not significantly predict the likelihood of being bullied.

Assumption Testing

Once perform a logistic regression, certain assumptions must be met. As stated previously, the logistic regression requires no assumptions about the normal distribution of predictor variables, or dependent variables (DVs). However, issues remain that can impact the analysis if not addressed. The logistic regression does require a ratio of cases to the variables and cells. No cases can result in the logistic regression producing parameter estimates and standard errors that are extremely large (McMillan & Schumacher, 2010). A logistic regression is also reliant on tests for goodness-of-fit with regards to an assessment of the fit of the model to the data being used (McMillan & Schumacher, 2010). Alongside cells with zero cases, expected frequencies that are less than 5 will decrease the analysis' level of power and the collapsing of variables is recommended to increase the number of cases. These issues were addressed in the Descriptive Statistic section, resulting in the collapsing of discrete variable categories for Race, LDL Status, and Grade. The fit of the model will be analyzed further in the Primary Statistical Analysis section.

As in other forms of multiple regression, the logistic regression is similarly sensitive to multicollinearity, or predictor variables that are highly correlated as well as extreme values on

predictor variables, or outliers (McMillan & Schumacher, 2010). The collinearity assumption is addressed for the national 2015 YRBS and 2017 YRBS below.

2015 YRBS

The national 2015 YRBS yields zero tolerance values below 0.1, indicating that multicollinearity is not a serious problem. All values for the four variables; Race, LDL Status, Grade, and Sex; are close to the 1.0 range. Additionally, all VIF values are less than 10.

Table 24

YRBS 2015 - Collinearity Statistics

Variable	Tolerance	VIF
Race	.990	1.011
LDL Status	.988	1.012
Grade	.999	1.001
Sex	.998	1.002

The eigenvalues are relatively similar except for the fifth dimension, indicating that the model may be affected by small changes in the predictor variables. With regards to variance proportions, no variables appear to have high variances that are similar for the same dimensions. Overall, there is no problem of collinearity in the 2015 YRBS data.

Table 25

YRBS 2015 - Collinearity Diagnostics

		Variance Proportions			
Dimension	Eigenvalue	Race	LDL Status	Grade	Sex
1	4.764	.00	.00	.00	.00

2	.100	.01	.00	.46	.53
3	.092	.57	.00	.28	.15
4	.042	.42	.03	.24	.29
5	.002	.00	.97	.01	.02

Logistic regression models are very sensitive to outliers, affecting the fit of the model, and extreme values need to be carefully examined (McMillan & Schumacher, 2010). Ideally, outliers are examined and addressed, often through deletion. The outliers were investigated using the Mahalanobis' distance, wherein a chi-square test is calculated and utilized as a cutoff point for determining outliers. Typically, when the Mahalanobis value exceeds the chi-square criterion, the cases are eliminated. The Mahalanobis value for the 2015 national YRBS data identified several cases; x^2 (4) = 18.47, p = .001. The identified cases were also uniformly the respondents that self-identified as LDL (speaking Not well or Not at all) for LDL Status, with 100% of those self-identified as LDL exceeding the Mahalanobis value and identified as outliers (n = 210). Those students who self-reported as LDL constituted less than two percent of the overall sample. The low-incidence nature of the sample resulted in this population of responses to be identified as outliers. Due to the nature of the research question and those respondents who self-reported as LDL for the LDL Status variable being the primary group studied for this research, outliers were not removed for the subsequent logistic regression analyses. This ultimately impacts other descriptive values, such as Leverage value, and the overall goodness-of-fit for the model.

Table 26

YRBS 2015 - Descriptive Statistics

	N	Minimum	Maximum	Mean	Std Dev
Analog of Cook's influence statistics	12294	.00003	.06171	.0005691	.00266881
Leverage value	12396	.00028	.02231	.0003434	.00188996
Normalized residual	12294	-.76751	2.89904	.9993434	1.0012507
DFBETA for constant	12294	-.00087	.00132	.0000000	.00038122
DFBETA for Sex	12294	-.00070	.00113	.0000000	.00041614
DFBETA for Race	12294	-.00064	.00140	.0000000	.00043244
DFBETA for Grade	12294	-.00110	.00075	.0000000	.00041356
DFBETA for LDL Status by Sex	12294	-.05064	.04969	-.0000001	.00255775
DFBETA for LDL Status by Race	12294	-.05125	.05258	.0000001	.00237412
DFBETA for LDL Status by Grade	12294	-.03945	.07619	-.0000001	.00281234
Valid N (listwise)	12294				

2017 YRBS

Similarly, multicollinearity is not a serious problem for the national 2017 YRBS, yielding zero tolerance values below 0.1. All values for the four variables; Race, LDL Status, Grade, and Sex; are close to the 1.0 range. All VIF values are also less than 10.

Table 27

YRBS 2017 - Collinearity Statistics

Variable	Tolerance	VIF
Race	.995	1.005
LDL Status	.993	1.007
Grade	.999	1.001
Sex	.997	1.003

Consistent with the 2017 data, the eigenvalues are relatively similar except for the fifth dimension. This high eigenvalue indicates that the model may be affected by small changes in the predictor variables. No variables appear to have high variances that are similar for the same dimensions with regards to variance proportions. Overall, there is no problem of collinearity in the 2017 YRBS data.

Table 28

YRBS 2017 - Collinearity Diagnostics

		Variance Proportions			
Dimension	Eigenvalue	Race	LDL Status	Grade	Sex
1	4.757	.00	.00	.00	.00
2	.103	.04	.00	.33	.61
3	.095	.55	.00	.40	.06
4	.042	.40	.03	.26	.30
5	.002	.00	.97	.01	.02

As stated previously, logistic regression models are very sensitive to outliers and ideally, outliers are examined and addressed through deletion. The outliers were investigated using the Mahalanobis distance, wherein a chi-square test is calculated and utilized as a cutoff point for determining outliers. Typically, when the Mahalanobis value exceeds the chi-square criterion, the cases are eliminated. The Mahalanobis value for the 2017 national YRBS data identified several cases; x^2 (4) = 18.467, p = .001. Just as in the 2015 national YRBS results, the identified cases for the 2017 data were also the entirety of the respondents who self-identified as LDL (speaking Not well or Not at all) for LDL Status, with 100% of those self-identified as LDLs for LDL Status exceeding the Mahalanobis value and identified as outliers (n = 211). Consistent with the 2015 sample, those students who self-reported as LDL in LDL Status constituted less than two percent of the overall sample for 2017. The low-incidence nature of the sample resulted in this population of responses to be identified as outliers. Due to the nature of the research question and those respondents who self-reported as LDL for the LDL Status variable being the primary group studied for this research, outliers were not removed for the subsequent logistic regression analyses. Again, this ultimately impacts other descriptive values, such as Leverage value, and the overall goodness-of-fit for the model.

Table 29

YRBS 2017 - Descriptive Statistics

	N	Minimum	Maximum	Mean	Std Dev
Analog of Cook's influence statistics	14271	.00004	.002223	.0003198	.00052242
Leverage value	14388	.00029	.00037	.0003261	.00002331
Normalized residual	14271	-.63279	2.78557	-.0118745	.98924016

DFBETA for constant	14271	-.00084	.00151	-.0000011	.00039199
DFBETA for Sex	14271	-.00076	.00111	.0000001	.00041509
DFBETA for Race	14271	-.00073	.00121	-.0000027	.00042331
DFBETA for Grade	14271	-.00116	.00073	-.0000004	.00041461
Valid N (listwise)	14271				

Summary

The 2015 and 2017 national YRBS datasets were prepared, analyzed, and interpreted to answer the four research questions presented for this study. The demographics of the 2015 YRBS sample included 15,624 total high school students with 51% of the sample identifying as males, 44% as nonwhite, 51% in the 9th and 10th grades, and 1.5% as LDL. The 2017 YRBS included slightly fewer participants, with a total of 14,765 high school students. The 2017 YRBS sample included 49% of the sample identifying as males, 45% as nonwhite, 52% in the 9th and 10th grades, and 1.6% as LDL.

Prior to conducting any analyses, the Mantel-Haenszel Test of Conditional Independence was utilized to determine if the 2015 and 2017 national YRBS could be combined for analysis. The results indicated that the two datasets were significantly different and too dissimilar to combine in addition to the samples being distinct cohorts. The proximal analyses were therefore analyzed by survey year, 2015 and 2017, separately.

The logistic regression is very sensitive to outliers, affecting the goodness-of-fit to the model. The Mahalanobis value for the 2015 and 2017 data uniformly identified the respondents that self-identified as LDL (speaking Not well or Not at all) for LDL Status. Those students that self-reported as LDL in LDL Status constituted less than two percent of the overall sample and the low-incidence nature of the sample resulted in this population of responses to be identified as

outliers. Due to the nature of the research question and those respondents that self-reported as LDL for the LDL Status variable being the primary group studied for this research, outliers were not removed for the subsequent logistic regression analyses. This ultimately impacts the overall goodness-of-fit for the model.

Results of the binary, backward (Wald) logistic regression were used to determine if the independent variables (Sex, Grade, LDL Status, and Race) predicted reporting of Bullying Victimization (yes or no) on the 2015 and 2017 national YRBS. For the 2015 dataset, large model fit indices meant questionable overall model fit. The model was able to predict group membership and was statistically reliable in distinguishing between youth who were and were not victims of bullying. The model was accurate and correctly classified 79.1% of the cases. Two significant results were revealed through the logistic regression for the 2015 YRBS data. The first significant finding was that LDL youth were over two times as likely to be victims of bullying as their English Proficient counterparts. Secondly, with regards to sex, male youth identifying as LDL 2.7 times more likely to be victims of bullying than their male non-LDL and female non-LDL or LDL counterparts.

The 2017 YRBS dataset had similar challenges with questionable overall model fit with predictability of group membership and statistically reliable distinguishing between youth who were and were not victims of bullying. Despite the questionable fit, the model was accurate - correctly classifying 80.5% of the cases. Though the 2017 YRBS model yielded accurate predictors, the predictors did not include those relevant to the research questions: LDL, LDL by Sex, LDL by Race, or LDL by Grade.

Once executing a logistic regression, certain assumptions must be met – such as the normal distribution of dependent variables, a ratio of cases to the variables and cells, and

goodness-of-fit for the model. No problems with collinearity were found for the 2015 or 2017

YRBS datasets. However, eigenvalues indicate that the models for 2015 and 2017 may be

affected by small changes to the predictor variables.

<center>**CHAPTER V – Discussion**</center>

<center>**Summary of Findings**</center>

Research Design

In this study, I sought to investigate and add to the extant literature base regarding the bullying experience of linguistically-diverse learners (LDLs) and further, the areas in which the bullying experiences of LDLs diverge from the those described in the overall research on bullying among children and adolescents. Notably, as the available literature base is extremely limited with regard to the LDL population, in present research study, I aimed to expand upon the existing pertinent studies and address what is not yet known in the literature base specific to the bullying experience of LDL students. For this study, the research questions were answered utilizing the Youth Risk Behavior Survey data from the 2015 and 2017 administrations, a biennial nationally-administered and nationally-representative survey assessing priority health-risk behaviors in students in grades 9 through 12 attending public and private schools. Data were analyzed statistically using a binary logistic regression, a nonparametric test that predicts group membership with categorical data.

The demographic data of the 2015 YRBS sample included 15,624 total high school students with 51% of the sample identifying as males, 44% as nonwhite, 51% in the 9th and 10th grades, and 1.5% as LDL. The 2017 YRBS included slightly fewer participants, with a total of 14,765 high school students. The 2017 YRBS sample included 49% of the sample identifying as males, 45% as nonwhite, 52% in the 9th and 10th grades, and 1.6% as LDL.

Main Analyses

I investigated four research questions during the course of the present study. Through the research questions, I inquired about the role of LDL Status in the likelihood of being a victim of

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bullying. Race and ethnicity were also considered in conjunction with LDL Status to explore the role of multiple risk factors on bullying risk and to better represent the lived experience of many LDL students. In this study, I also posed questions regarding the role of age (grade) and sex (male/female) on the bullying victimization of LDL students to study whether or not this vulnerable population experiences bullying victimization consistent with the trends established in the bullying literature base for the broader population for youth. Each research question is presented below with the subsequent findings.

Research question 1. In the first research question in the present study, I examined the likelihood that LDL students report being victims of bullying. Based on the available empirical literature for youth that are LDL, higher victimization and lower acceptance rates were found to be related to a student's competence in the local language (von Grünigen et al., 2010, 2012). Recently conducted areas of inquiry by special interest groups yielded anecdotal accounts of bullying with observations of accelerating rates of victimization and aggression motivated by the intersecting identities of ethnicity or race, immigrant status, and proficiency in English (*Learning from student voice: How do students experience bullying?*, 2016; *Post-election survey of youth*, 2017). Based on the literature, I hypothesized that LDLs would be a vulnerable group and experience higher rates of bullying victimization than their non-LDL counterparts. Results obtained by completing the logistic regression partially supported this claim. Findings of the binary logistic regression were significant for the 2015 national YRBS dataset for two of the research questions. For the 2015 national YRBS, LDL youth were found to be over two times as likely to be victims of bullying than their non-LDL counterparts. Based on the statistically significant results for the 2015 national YRBS data set, the null hypothesis should be rejected since the LDL group were more likely to report being victims of bullying. For the 2017 national

YRBS, the null hypothesis should be accepted, as the 2017 data did not yield significantly different likelihoods of bullying victimization for LDL or non-LDL students.

      Research question 2. In the present study, in the second research question, I examined the role of sex (male/female) on the bullying victimization of LDL students. In this research question, I aimed to investigate whether this vulnerable population experiences bullying victimization consistent with the trends established in the broader bullying literature base. A large body of research has established trends for sex and bullying. The literature base supports that male youth are involved more in overall bullying – as both perpetrators and victims – compared to their female counterparts (Nansel et al., 2001; Solberg & Olweus, 2003). Consistent trends for sex differences in bullying victimization exist for research with minoritized populations, as well. In studies focused primarily on children of immigrant families, boys have been found to be victimized more frequently and display aggressive behavior and bully others more often than girls (von Grünigen et al., 2010). Peer acceptance rates for boys were similarly lower than acceptance rates for girls, likely due to their higher levels of aggression and the impact of their aggression on peers (von Grünigen et al., 2010).

      The broad trends and trends found for children of immigrant families informed the hypothesis for the second research question, that male LDLs would report a greater likelihood for bullying victimization than their female LDL peers. Similar to the results of the first research question, the national YRBS data utilized for this study supports this hypothesis partially. The 2015 national YRBS results were significant for the sex identified by LDL students. LDLs reporting their sex as male were 2.7 times more likely to be victims of bullying than their female LDL peers and non-LDL counterparts. Based on the statistically significant results for the 2015 national YRBS data set, the null hypothesis should be rejected since the male LDL group were

more likely to report being victims of bullying. For the 2017 national YRBS, the null hypothesis should be accepted, as the 2017 data did not yield significantly different likelihoods of bullying victimization for male LDL or female LDL students and non-LDL counterparts.

Research question 3. In the third research question for this study, I investigated the role of age (grade) on the bullying victimization of LDL students. In this research question, I aimed to study whether the LDL population experiences bullying victimization consistent with the trends established in the bullying literature base for the broader population with regards to spikes in bullying victimization at the beginning of high school. Overall, the literature base supports that younger students report greater rates of bullying than older students (Solberg & Olweus, 2003). However, a slight increase has been observed for 14-year-olds (Solberg & Olweus, 2003). Based on the previous literature, it was hypothesized that LDL students in the lower high school grades, 9th and 10th, would have greater likelihood of reporting bullying victimization than those students in the upper high school grades, 11th and 12th, consistent with the downward trend associated with increased age.

However, no clear difference of likelihood emerged for grade level for LDL students. Results gathered by completing the logistic regression yielded no significant results for either the 2015 or the 2017 national YRBS. Due to the lack of significant differences, the null hypothesis should be accepted, as neither the 2015 nor the 2017 data yielded significantly different likelihoods of bullying victimization for LDL students for the 9th and 10th grade years compared to the 11th and 12th grade years.

Research question 4. In the fourth and final research question for the current study, I investigated the role of race and ethnicity considered in conjunction with LDL status to explore the role of multiple risk factors on bullying victimization and to better represent the lived

experience of many LDL students. Despite the literature base for racially- and ethnically-based bullying having no clear consensus, the prevalence of bullying may be higher among racially and ethnically minoritized youth. Though bullying between groups show more similarities than not, the experience of bullying and victimization can differ between racial and ethnic groups (Wang et al., 2009). Some studies suggest that, compared to other adolescent populations, higher rates of bullying and victimization are found in adolescent African Americans (Albdour & Krouse, 2014; Peskin et al., 2006). Bullying can also be environmentally dependent, and when students are within the minority at school – numerical or racially and/or ethnically – they experience an imbalance of power and are more likely to be targeted for bullying based on race (Fisher et al., 2015). Based on the previous literature, it was hypothesized that, due to the higher likelihood of LDLs belonging to a racial or ethnic minority group, LDLs who also identify as non-white will report a greater likelihood of bullying victimization than their white LDL peers and non-LDL counterparts.

No clear difference of likelihood of bullying emerged regarding the race of LDL students, though. Through results obtained by completing the logistic regression, I found no significant results for either the 2015 or the 2017 national YRBS. Due to the lack of significant differences, the null hypothesis should be accepted, as neither the 2015 nor the 2017 data yielded significantly different likelihoods of bullying victimization for LDL students who also identified as nonwhite compared to their white LDL peers and non-LDL counterparts.

Conclusions

Results of the present research are consistent with the literature reviewed in this study and support some of the extant research on the bullying victimization of youth. The first significant finding, that LDLs are over two times as likely to be victims of bullying compared to

their non-LDL counterparts, is supported by the limited literature base focusing on the bullying

of LDLs. Areas of inquiry from special interest groups, such as the Human Rights Campaign

and YouthTruth Surveys, yielded anecdotal accounts of bullying with rates of aggression

accelerating – motivated by the intersecting identities of ethnicity or race, immigrant status, and

proficiency in English (*Learning from student voice: How do students experience bullying?*,

2016; *Post-election survey of youth*, 2017). With regards to empirical studies, the current

findings align with the findings of higher victimization and lower acceptance rates related to a

student's competence in the local language (von Grünigen et al., 2010, 2012).

Consistent with the overall literature base, male LDLs were found to be 2.7 times more

likely to be victims of bullying than their female LDL peers and non-LDL counterparts. A large

body of research supports that male youth are involved in bullying more overall – as both

perpetrators and victims – than their female peers (Nansel et al., 2001; Solberg & Olweus, 2003).

Additionally, men were shown to be less likely to change their use of language than their female

counterparts, signifying their greater resistance to participation in social change as it relates to

language use (Gal, 1978). Within the literature for minoritized populations, sex differences for

bullying are noted, as well. In other studies, for children from immigrant families, boys have

been found to be victimized more frequently as well as display aggressive behavior and bullying

others more often than girls (von Grünigen et al., 2010). Boys were similarly less accepted by

peers than girls, likely due to their higher levels of aggression and the impact of their aggression

on peer acceptance (von Grünigen et al., 2010).

Limitations

First and foremost, the secondary data analysis of the YRBS to investigate the research

questions posed in this study is a limitation, as the original purpose of the YRBS data collection

was to assess and monitor the priority health-risk behaviors for youth in the US. The original

investigation, therefore, represents a much broader scope than the current research questions I

developed to specifically investigate the bullying experience of LDLs. Though the bullying

definition provided in the questionnaire and the Olweus bullying definition used for this study

are similar, the YRBS was not developed to measure bullying alone, thereby challenging the

construct validity of the instrument for the intent of this research study.

The significant results themselves should also be interpreted with caution. The results

that I found for the 2015 data set were not echoed in the 2017 data. The 2015 national YRBS

results also should be interpreted with some caution due to the complications arising from the

particularly unequal sample size, such as the primary responders – LDLs – being identified as

outliers and the overall fit of the model being negatively impacted as a result.

Though the randomized, nationally-representative sampling method for the YRBS

provides a significant limitation to the external validity threats, the region of the sampled schools

is not publicly accessible for the 2015 or 2017 datasets. All YRBS procedures are designed to

protect the privacy of the students through anonymous participation in the survey and the

confidentiality of responses was preserved by eliminating data that could identify locations of

respondents (Brener et al., 2013). However, bullying appears to be impacted by environments;

indeed, environmental factors have been shown to impact the bullying climate of schools, such

as sparse or low-density populations of minoritized groups, resulting in greater social exclusion,

isolation, and bullying (Plenty & Jonsson, 2017). The role of the school environment and

demographic variables are unavailable to analyze the role of the such factors in students' reports

of bullying. Within-group bullying of minoritized students, such as students identifying as

nonwhite or linguistically diverse students, are impacted by the diversity of the school

environment – with greater diversity yielding a greater likelihood that within-ethnic or within-racial group bullying will occur (Fisher et al., 2015; Mendez et al., 2012). Similarly, without more information about the demographic variables of the different schools and the perpetrators of bullying, the role of within or between group bullying cannot be investigated further.

The results of this study should only be generalized to students in the US within the same grade band of 9th through 12th graders – especially considering the lack of reliability when the questionnaire was administered to middle school students. The generalizability of the results of this study is likely limited with regards to other grades or ages, adolescents attending nontraditional school settings, or adolescents outside of the US. Though nationally representative, the small numbers of some racial or ethnic subgroups sampled severely limit the analysis and interpretation of these data. The combination of multiple years of national YRBS data is recommended to combat small sample sizes and increase precision in research; however, results of the Mantel-Haenszel test demonstrated that the 2015 and 2017 national YRBS datasets were significantly different from each other and should not be analyzed in combination. The two datasets also survey distinct cohorts of students that necessitate separate analyses as well.

Test-retest reliability studies for the national YRBS questionnaire were conducted in 1992 and again in 2000 by the CDC; however, reliability has not been measured for more recent item additions to the YRBS, specifically the items pertinent to the current study (Brener et al., 2013). Due to the questionnaire design and intent on brevity for school administration, many constructs are reduced to single items. The self-report nature of the questionnaire without opportunity for triangulation of data introduces potential error. With question 99 alone, the item addressing the speaking ability of respondents, English speaking ability is self-reported and sufficiently vague – allowing for the potential of not only identifying English learners through

responses but students who are bidialectal or students with a speech and language disability status. The US Census provides a similar question on their questionnaire after preliminary questions regarding languages other than English spoken by respondents. The lack of greater specificity for this item on the YRBS broadens the potential base of respondents selecting their English speaking ability as "not well" or "not at all". Additional potential for error is the respondents selecting the "not at all" option for English speaking ability, placing the ability of the respondents to successfully complete the survey independently with limited English language skills in question.

Similar reliability and validity concerns arise with the questions addressing bullying victimization, as self-reported by student respondents. Thought a bullying definition is provided and is a noted strength of the YRBS questionnaire, the definition itself yields an interpretation toward more direct, overt forms of bullying. More nuanced forms of aggression common in bullying victimization and more socially acceptable for adolescent students, such as socially and relationally aggressive behaviors, may not be endorsed as consistently and responses therefore may not be as representative of the full spectrum of bullying victimization for high school students. Future questionnaire items could maintain brevity by splitting the bullying item into two items addressing direct and indirect forms of bullying separately. Alternatively, the definition provided prior to responding to the bullying item could be more expansive, emphasizing the role of indirect forms of aggression in bullying victimization as well.

The delicate nature of asking adolescents to self-report on serious health-risk behaviors suggests the possibility that not all self-reported scores are reliable and may be subject to the "good participant effect" and response bias through the preponderance of categorical yes/no responses in the YRBS. While procedural safeguards are in place to protect against the threat of

overly desirable – or undesirable – responses and protect student privacy, the validity of all self-reported behaviors measured within the YRBS questionnaire have not been assessed (Brener et al., 2013). Results of a literature review conducted by the CDC in 2003 determined that self-reports of these behaviors are impacted by situational factors as well as cognitive factors, though the validity of these self-reported behaviors are not all threatened equally (Brener et al., 2013). The extent to which each behavior can be validated by an objective measure also differs from behavior to behavior – such as some items allowing for direct measures of behaviors, such as smoking rates – for validation (Brener et al., 2013). LDLs' self-reported speaking ability may not always be accurate and the YRBS did not provide additional school records or parent or teacher reporting to strengthen validity. Respondents reporting proficient skill levels in English may not be acting as a "good participant," but may truly have inaccurate perceptions of their own ability.

All YRBS procedures protect the privacy of the students through voluntary participation in the survey (Brener et al., 2013). Relatedly, no data are collected for non-responders – which allows for the potential confounding factor of non-responders being overrepresented for certain demographic groups. The 2017 data set had significantly fewer responders to the YRBS, despite a higher quantity of sampled schools. This may implicate the role of the political climate in response rates, after a new president was elected in the US in 2016 and the YRBS is administered by a government agency. Also, it seems likely that potential participants who selected "Not at all" for their LDL Status would not have attempted a long survey entirely in English without available help or supports to complete it.

Recommendations for Future Research

Future research with the YRBS in which investigators are studying bullying or LDLs should utilize statistical procedures with consideration of unequal sample sizes. A benefit to conducting research for small populations or low incidence behaviors in a large-scale data set increases the likelihood of observing otherwise rare populations. However, if the data points are too small of a percentage of the total population, the primary data can also be interpreted as outliers. The statistical techniques for unequal sample sizes can utilize a crosstab analysis, such as the Monte Carlo simulation, or reduce the overall sample used for analysis to resemble equal sample sizes through the Bootstrapping method or other means.

Ideally, more research will be conducted with a primary purpose and design for studying the bullying experiences and risk for LDLs. Careful research design can minimize or eliminate possible sources of error and increase the credibility of the study's results, and care should be made to make the sample sizes as equal as possible through targeted data collection methods. Data collection should explicitly and specifically address LDLs as a more homogenous group – delineating multilingual learners from multi-dialectal learners and students with speech and language disabilities in the US. Though all three groups may experience challenges with the academic language demands of American English in the US classroom, their experience of language and bullying victimization may differ significantly - impacting intervention and prevention efforts. Though through the current study, I aimed to add to the bullying literature base for this specific minoritized population; however, more research is needed to support or refute information about existing bullying trends for specific vulnerable groups, replicate the findings of this study, and further specify those students at greatest risk for bullying victimization. Future research should continue to build upon the limited research base in this

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area and contribute to the greater knowledge regarding the bullying victimization of LDLs in the

US.

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