An Analysis of the Effects of Bodies, Rurality, and Social Capital on Physical Bullying

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### This thesis titled

An Analysis of the Effects of Bodies, Rurality, and Social Capital on Physical Bullying

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#### Abstract

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The problem of bullying has received increased social and empirical interest in recent years. As such, there is a wide array of valuable information presented in the academic literature on bullying practices. Research demonstrates that gender, race, weight, and geographic location are separately linked to bullying victimization and perpetration. While previous studies have examined gendered bullying behaviors, and the impact of the aforementioned demographic variables, little is known about the interaction of these factors in relation to victimization and perpetration of bullying at school.

This study investigates how gender, weight, race, geographic location and social capital can influence and predict the probability and frequency rate of physical bullying practices. The current study uses the theoretical frameworks of social dominance theory and socio-ecological theory to evaluate the extent to which demographic variables can impact physical bullying perpetration and victimization. This research utilizes survey data from the 2009-2010 Health Behavior in School-Aged Children (HBSC) data to investigate how bodies (i.e., gender, race, and weight), geographic location (i.e., rural, urban, and suburban areas), and social capital matter with regard to youth physical bullying victimization and perpetration.

The findings show that increased social capital, perceptions of school, and engagement in physical fights can increase the likelihood and frequency of physical bullying perpetration. Boys and girls that have more friends, spend more time with their peers, enjoy school, and engage in physical fights are more likely to physically bully others than students who do not have a lot of friends, do not enjoy school, and do not engage in physical fights. Additionally, students who have low social capital, negative relationships with their parents, but still engage in physical fights are likely to be victims of physical bullying. Interestingly, when examining race, weight, and gender separately, there are few significant relationships between them and physical bullying perpetration. However, the findings indicate that interactions of gender, race, weight, and geographic location are linked to school bullying victimization and perpetration. These findings indicate that the factors that can impact physical bullying provide important new insights regarding physical bullying, specifically. Researchers will find this information useful for future research on bullying, and practitioners may find it useful in developing programs and policies that address bullying. Dedication

This research is dedicated to my family.

#### Acknowledgments

First, I would like to thank my amazing grandparents, Kenner and Margene, for being a source of endless support, reassurance, inspiration, patience, and love throughout this journey. My grandparents have never given up on me, despite all of the difficulties that have occurred during the past two years. I also would like to thank my dad and my brothers, Michael and Josh (Brittany), for supporting and loving me during this process and all of my endeavors in life. This project truly would not have been possible without the sacrifices that each of you have made. In addition to my family, I would like to thank my colleagues, Anna Majercek and Franky Rife, for their support and friendship. Although we were complete strangers before entering this program, we have learned to empathize with each other, encourage each other, and help each other make it through graduate school. I know that this experience would not have been the same without these two remarkable individuals.

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#### **Chapter 1: Introduction**

Bullying is an area of increasing interest, and many youths today are impacted by this phenomenon. In recent years, it has become apparent that there are serious negative consequences that result from being bullied at school; victims of bullying often suffer from depression, anxiety, feeling unsafe and insecure in the school, poor academic performance, lower self-esteem, loneliness, and higher risks of suicide (Veenstra et al., 2005; Cook et al., 2010; Sterzing et al., 2014; Kahle & Peguero, 2017; Goldbach et al., 2018). Additionally, because bullying occurs in the school, a central institution of socialization, it is essential to understand how and why bullying occurs and how it can be prevented so that schools can become a safe learning environment for all students.

There has also been a recent increase in empirical research on bullying among scholars. A search of an online scholarly database, JSTOR, reveals that there were 312 sociological publications on bullying between the years 2002-2005, 1,550 sociological publications on bullying between 2005 and 2010, and 2,507 bullying publications between 2015-2020. Moreover, recent statistics reveal that approximately 20.2% of students aged 12-18 are bullied in school (U.S. Bureau of Justice Statistics, 2019), and 16.7% of the female student population reported that they were bullied in school. Also, 70.6% of students aged 12-18 report seeing bullying in their schools (Bradshaw, Sawyer, & O'Brennan, 2007). Despite the recent uptick in scholarly interest, there are still facets of bullying that are not fully examined, such as overt, physical bullying among girls, which includes situations in which a bully might punch, hit, kick, or threaten a victim. Moreover, gendered bullying, or the differences in bullying perpetration and victimization among boys and girls, within rural locations is understudied. Rather than

overlooking these facets, it is necessary to examine gendered physical bullying practices. As such, this study will examine demographic variables such as gender, weight, and race, and geographic location in order to better understand the rates of physical bullying perpetration and victimization among girls and boys. This study will also aim to determine if there are different factors for boys and girls that influence physical bullying perpetration and victimization rates. It is essential to know what factors influence physical bullying in order to create policies that effectively address bullying, as well as prevent physical bullying before it occurs, among both boys and girls.

While most people have a vague understanding of the concept of bullying, they may not be able to define the concept. In fact, scholars have provided a variety of definitions and conceptualizations of bullying, which makes measuring and understanding it a challenging enterprise. However, there are some specific characteristics of bullying that researchers have been examining for decades. In the 1970's, Olweus began studying and defining bullying. His influential research studies have been examined, reproduced, and cited by many scholars in their attempt to learn more about bullying behaviors and practices. The definition of bullying has been widely debated by scholars due to its complexity and vagueness. The operationalization of the concept of bullying has changed significantly from when Olweus first defined it in 1970's. For instance, terms used to define bullying, such as intent to harm, repeated oppression, and imbalance of power are "subjective and lack clear parameters" (Slattery, George, & Kern, 2019, p. 228). As such, there are multiple definitions of bullying, which may lack clarity, lead to inconsistent results, and/or lead to underreporting or misreporting (Slattery, George, & Kern, 2019). Despite the inconsistent definitions of

bullying, most researchers agree that bullying can be defined as having the following characteristics: "(1) behavior hurts, humiliates, or harms another person physically or emotionally; (2) an inability for the target to stop the behavior and defend themselves; (3) a real or perceived imbalance of power that occurs when the student doing the bullying has more physical, emotional, or social power than the target; and (4) the act of bullying is repetitive, although bullying behavior can occur in a single incident if that incident is either very severe or arises from a pattern of behavior" (National Bullying Prevention Center, 2019). Despite the vague aspects of this definition, all four facets of bullying, when combined, provide a comprehensive definition that fits most bullying scenarios.

In addition to these four facets of bullying, scholars have argued that bullying is also categorized into four subtypes, one of which was physical bullying. Physical bullying is overt forms of bullying, such that they are direct forms of bullying, while social/relational and cyber bullying are more covert and indirect. Physical bullying can be defined as violence towards an individual in the form of hitting, kicking, property damage, shoving, spitting, or punching (Olweus, 1991). Scholars indicate that 12.8-27.8% of high school students report experiencing physical bullying (Stubbs-Richardson et al., 2018; Kowalski & Limber, 2007; Robers et al., 2014; Wang et al., 2009).

Scholars have also examined gender differences and disparities within bullying practices. Current research suggests that bullying is a gendered phenomenon, such that boys are more likely to physically bully others (Dulmus et al., 2004; Lehman, 2014; Lodder et al., 2016; Mouttapa et al., 2004; Wei & Lee, 2014). While girls are less likely to use physical violence as a form of bullying, there are still instances in which they engage in physical bullying. Although there has been an extensive, active discussion on

bullying in general, there has not been a lot of research conducted on bullying in rural areas, let alone gendered bullying within different geographical contexts. As such, the purpose of this study is to explore the ways in which gender, geographic location, weight, race, and social capital impact the probability and frequency of physical bullying behaviors among boys and girls.

In the following chapters, the intersectional effects of gender, race, weight, and rurality on physical bullying perpetration and victimization will be evaluated. In Chapter Two, previous research and literature on physical bullying will be presented. The theory of intersectionality, social dominance theory and socio-ecological theory, the frameworks for this research, will be used to frame this discussion. The literature review will provide the basic grounds for understanding physical bullying and how various aspects of an individual's identity, such as gender, can have an effect on the likelihood and frequency of physical bullying perpetration and victimization.

The research methodology will be discussed in Chapter Three, including data collection and sampling, dependent and independent measures, and methods of analyses. The purpose of the current research is to answer the following questions: (1) Do boys and girls use physical violence as a means of bullying and how does its use compare across gender? (2) Are girls in rural areas more likely to resort to physical bullying practices? (3) To what extent does social class, weight, race, geographic location, and social capital impact a girl's probability of being physically bullied? (4) To what extent does social class, weight, race, geographic a girl's tendency to physically bully others? (5) Are there differences between the predictors for girls' and

boys' use of physical violence as a way of being physically bullied? (6) Are there differences between the predictors for girls' and boys' who physically bully others?

The findings will be discussed in Chapter Four, and the frequency and likelihood of physical bullying perpetration and victimization will be analyzed. Additionally, Chapter Four will discuss which demographics are correlated with higher rates of physical bullying perpetration and victimization. Chapter Four will also evaluate whether the combined effects of being a certain race, gender, weight, and living in a particular geographic location will have an effect on physical bullying perpetration and victimization rates.

Chapter Five will discuss the overall results of this study and frame it in social dominance theory and socio-ecological theory. Chapter Six will discuss the strengths and weaknesses of this study and offer suggestions for future research. Finally, policy implications will be addressed.

#### **Chapter 2: Literature Review**

The goal of this section is to examine what we do know and do not know about gendered bullying and bullying in rural contexts. I will first examine the relevant sociological theories that can explain bullying behaviors. Then, the I will discuss the research literature on gendered bullying, as well as gender differences in the perpetration and victimization of bullying. I also aim to examine gendered policing behaviors as a form of bullying, gendered responses to bullying, and victim selection among bullies. Then, I will examine bullying in both urban and rural locations, including differences in bullying rates and bullying behaviors. After reviewing several relevant pieces of literature, I will consider the limitations of the literature in order to address what has and has not been studied. Afterward, I will discuss how the present research study addresses these gaps in the literature.

#### **Theoretical Approaches to Understanding Bullying**

As discussed in the introduction, physical bullying can be defined as an instance in which one individual punches, hits, kicks, or physically harms another individual. The various theoretical standpoints on bullying help us understand how, where, and when bullying occurs. In particular, statistics and definitions do not convey that bullying can be influenced by structures and agency. Additionally, according to participant role theory, bullying is a group process, such that many individuals are either passively or actively involved in the process of bullying (Jeffrey, Miller & Linn, 2001; Salmivalli et al., 2011; Sentse et al., 2014). For instance, if an individual watches the bullying process happen, but does not assist the bully or help the victim, then he is a passive bystander. Despite doing nothing but watching the event, she does have a role to play, which differs from the bully, victim, bully-victim, and defender. The bystander, by not acting to help the victim or join the bully, may feel helpless, may be afraid that they would be the next victim if they tried to help the victim in the current situation, "learn passive acceptance of injustice," and may sustain bullying by not helping the victim (Jeffrey, Miller & Linn, 2001, p. 145). Overall, three theoretical concepts are useful for a general understanding of bullying: theory of intersectionality, socio-ecological theory, and social dominance theory (SDT), and the theory of intersectionality.

#### The Socio-Ecological Theory

The most common sociological approach on bullying, is the socio-ecological perspective. This perspective is similar to the participant role theory, as it focuses on the roles of peer groups. However, it adds another aspect, social capital and position within the school network. Scholars have found that adolescents who are popular are more likely to be bullies, while individuals who have less social capital or socially isolated are more likely to be victims (Duffy et al., 2017; Barboza et al., 2009; Lodder et al., 2016, Sentse et al., 2014). Duffy et al. (2017) found that students who scored high on popularity measures and/or prioritize popularity were more likely to be bullies. Similarly, Barboza et al. found that "the number of friends and the ability to talk to these friends increases the likelihood" that an individual will bully others (2009, p. 101). Lodder et al. (2016), on the other hand, examined smaller social cliques as well as the larger friendship network. They found that individuals select friends who have the same or similar levels of bully victimization as themselves (Lodder et al., 2016). However, "average clique bully victimization predicted individual bully victimization over time" for boys, but not for girls (Lodder et al., 2016, p. 132).

Sentse et al. (2014) goes a step further and claims that a bully's popularity and likeability differ. While bullies are more likely to be popular, they are also less likeable. They also found that individuals liked peers that had similar levels of bully victimization as themselves (Sentse et al., 2014). Andrews (2019) provides more insight into the matter and finds that students who are central to their social network are more powerful aggressors, more likely to be bullies, and more likely to be disliked by peers. Individuals who have more social network prestige, on the other hand, are well-liked by their peers, more likely to be leaders, more popular, and less likely to be bullies. Moreover, several scholars also posit that individuals who have aggressive friends that are bullies are also more likely to be bullies themselves (Mouttapa et al., 2004; Sentse et al., 2014; Lodder et al., 2016). Lastly, social position can limit the spaces that individuals can enter within the school (Jamal et al., 2015). Specifically, girls who do not have 'friends in high places' are restricted in terms of where they can go within the school (Jamal et al., 2015).

#### Social Dominance Theory

Social Dominance Theory (SDT) examines group-based hierarchies within the bullying dynamic (Evans & Smokowski, 2016; Forsberg & Thornberg, 2016; Williford et al., 2011). These hierarchies are based on gender (e.g., boys have more power than girls), age (e.g., older individuals have more power than younger individuals), and an arbitraryset system (e.g., socially significant groups such as ethnicity or social class that create hierarchies) (Evans & Smokowski, 2016). Additionally, the group-based hierarchies are established through the workings of oppression, discrimination, and injustice. With regard to bullying, students may feel motivated to obtain power and dominance, which fuels bullying behavior. Bullies will use intimidation and humiliation in order to obtain power over the victim. However, since bullying is a group process, "the peer group dictates whether a bully can establish dominance" (Evans & Smokowski, 2016, p. 368). As such, the bully needs to have the respect and support of the majority of classmates in order to establish peer relationships and gain social power and dominance over classmates (Williford et al., 2011; Evans & Smokowksi, 2016).

Moreover, if the bully becomes the leader of a clique, then the clique will gain power and dominance. Thus, the clique members will join in on the bullying in order to suppress less powerful members of the class and maintain the clique's social dominance over others (Evans & Smokowski, 2016). This theory is very useful in examining the power relationship between the bully, the victim, and other classmates. The theory also affirms the necessity of including a real or perceived imbalance of power in the definition of bullying.

All three of these theoretical approaches have proven to be useful for scholars, as they provide great insight into how bullying is a group process, how an individual's social capital and popularity can predict bullying practices, how the desire for power and dominance motivates bullies, and how human agency and structures of an institution influence bullying. The majority of studies on bullying within the fields of psychology and sociology include one of the three theories discussed above. It is necessary to describe these three theoretical approaches, as it is important to note that peer network, power, human agency, and physical space can all influence how and when bullying occurs, as well as predict who is likely to be a victim or a bully. Therefore, to choose one theory over the other does not fully address bullying behaviors. As such, it is necessary to examine bullying practices with all three foundational theories, as they address different aspects of bullying practices. These three theories are foundational because they examine bullying in relation to peer networks, power, and human agency. Thus, the current research will use these three theoretical standpoints as a foundation for analyzing physical bullying perpetration and victimization in relation to social capital, power dynamics, and demographic characteristics.

#### The Theory of Intersectionality

The term intersectionality was first used by Kimberlé Williams Crenshaw (1989) to describe the multiple forms of marginalization that Black women face. Although the concept of intersectionality had been discussed by Black feminists and other feminists writing from intersectional perspectives long before 1989, Crenshaw's contribution of the term, along with the development of ideas about intersectionality from Crenshaw among others, has prompted more and more interest in the concept, which has now been turned into a theoretical framework (Collins & Bilge, 2020; McCall 2005). The theory of intersectionality examines how different social identities interact with one another to have compounding influence on a person's likelihood of being oppressed and/or privileged. Many examples of sociological studies using an intersectional lens have focused on the categories of race and gender (Harris & Leonardo, 2018; Shields, 2008; Simien, 2007). However, scholars have also pointed out that there are multiple other social identities that are can influence experiences of oppression and privilege, too (Calasanti & King, 2015; Erevelles & Minear, 2010; Friedman, Rice & Rinaldi, 2019; Warner & Brown, 2011). The theory of intersectionality can also be applied to the bullying paradigm, as different forms of inequality can intersect and influence the likelihood of being bullied. Some of these social identities might be more important than

others in the bullying dynamic. Kahle and Peguero's (2017) study reveals that the specific interactions of gender, weight, and race create a moderating effect on who is likely to be a target of bullying victimization. Kahle and Peguero's (2017) study highlights how problems of exclusion and inequality cannot be solved by just examining gender or race. Building off of Kahle and Peguero's (2017) study, we can expect that gender, race, class, weight, and disability might be salient social identities connected to physical bullying practices. However, this previous literature does not examine the intersectional nature of these identities on physical bullying. The following sections will discuss gender as a grounding social identity factor in bullying, as well as what is known about the context of geographic location for bullying practices.

# Gender and Other Social Identities and Embodied Differences with Regard to Bullying

Gender is relevant to sociology and bullying, as it is pervasive in people's lives. Gender is an identity, an institution, and a social construct. That is, boys and girls undergo the formation of gender identity by being entrenched in the cultural gender norms and roles. Moreover, there are differing cultural expectations for boys and girls, as they hold different statuses which effects how they will be treated in society. Thus, it is important to examine how social norms and roles pertaining to gender influence and shape bullying practices among girls and boys.

Scholars have found that there are gender differences in bullying perpetration. Jeffrey, Miller, and Linn (2001) conducted a study of middle school students in New Jersey and found that boys are more likely to use physical violence, such as hitting, punching, and kicking, to bully others. Girls, on the other hand, were more likely to use indirect forms of bullying, such as social exclusion and rumor spreading (Jeffrey, Miller & Linn, 2001). Stubbs-Richardson et al. (2018) and Iossi Silva et al. (2013) reported similar findings for boys in their studies; boys were significantly more likely to perpetrate physical bullying. However, unlike Jeffrey, Miller, and Linn, Stubbs-Richardson et al. (2018) and Iossi Silva et al. (2013) found that there are no gender differences in the perpetration of relational and cyber bullying. Moreover, Iossi Silva et al. (2013) also found no gender differences in the perpetration of verbal bullying. Carrera-Fernandez et al. (2013) adds to the research by discovering that overall, boys (23.5%) are more likely to bully others than girls (17.6%). Additionally, Carrera-Fernandez et al. (2013) found that girls are more likely to talk about someone behind their back, while boys are more likely to insult and name-call other individuals and are more likely to use social exclusion, direct physical abuse, threats, and sexual harassment.

Perhaps the discrepancies in the studies discussed above are related to differing definitions of bullying. All of the studies discussed above have definitions that differ from one another. For instance, Jeffrey, Linn and Miller (2001) define bullying as a social experience in which bullies attempt to dominate and have power over other students. Similar to Jeffrey, Linn and Miller, Stubbs-Richardson et al. (2018) include power differentials in their definition, but they also include intent to harm in their definition as well. Iossi Silva (2013), on the other hand, provides a different definition of bullying: ongoing, intentional aggressive behavior among students. Therefore, the definitions presented in Jeffrey, Miller and Linn's (2001) study, Stubbs-Richardson et al's (2018) study, and Iossi Silva's (2013) study all differ from one another in some way. Additionally, they only include partial definitions, and do not account for emotional

humiliation or the target's inability to defend themselves. Unlike the three studies mentioned above, Carrera-Fernandez et al. (2013) defines bullying as a) negative actions targeted to the physical, psychological, or social dimension; b) can be repetitive or occur one time; and c) the victim is at a physical or psychological disadvantage. Thus, Carrera-Fernandez et al. (2013) provides the most comprehensive definition, which differs significantly from those presented by Iossi Silva et al. (2013, Jeffrey, Linn and Miller (2001), and Stubbs-Richardson et al. (2018).

In addition to having differing definitions, it is also possible that the various results from these studies are influenced by geographic location and age. For instance, Jeffrey, Miller and Linn (2001) collected data from 470,236 middle school boys and girls in New Jersey, whereas Stubbs-Richardson et al. (2018) collected data from 447 high school students in one U.S. southeastern school. Moreover, Iossi Silva et al. (2013) collected data from 387 students located in Northern Portugal, while Carrera-Fernandez et al. (2013) collected data from 1500 Spanish students attending middle school and/or high school in Spain. Despite the various methods and results, most research seems to support the conclusion that boys are more likely to perpetrate physical bullying than girls.

There are also gender differences in bullying victimization. Some theorists suggest that boys are more likely to perpetrate bullying while girls are more likely to be victimized (Kahle & Peguero, 2017). However, other scholars suggest that boys are more likely to be victims of physical and verbal bullying than girls are, while girls are more likely to be victims of relational bullying (Carrera-Fernandez et al., 2013; Iossi Silva et al., 2013; Jeffrey, Miller & Linn, 2001; Stubbs-Richardson et al., 2018). However, as I

will discuss later, the results from these studies, which were conducted in urban locations, may differ from bully victimization in rural areas.

Gender differences in bullying victimization are also impacted by race, ethnicity, and weight to create overlapping modes of discrimination. Kahle and Peguero used "routine activity and lifestyle frameworks to explore the interaction of gender, weight, race, and ethnicity in [relation] to the occurrence of bullying victimization" (2017, p. 328). Overall, youth that are overweight are more likely to be bullied as obesity is "one of the most stigmatizing and least socially acceptable conditions in childhood" (Kahle & Peguero, 2017, p. 327). With regard to weight among females, they found that, in general, girls are more likely to be bullied if they are at risk of being overweight or actually are overweight, while girls who are underweight are less likely to be bullied. This is to be expected, as women are typically more pessimistic about weight and misidentify their weight status (Lynch, 2019). Moreover, sociological and feminist theories reveal that women's bodies are objectified and constructed as something to be looked at by the male gaze. It is up to women to make their bodies align with the standards presented by the male gaze and the media (McKinley, 1998). Thus, females generally experience more body surveillance, shame, and lower body esteem, however they feel more shame and ridicule when they are overweight.

As for ethnicity and race among females, Kahle and Peguero (2017) found that, in general, African American girls are less likely to be bullied, while Asian American girls are more likely to be bullied than White American girls. When considering the interaction between weight, race, and ethnicity among females, Kahle and Peguero (2017) found that African American and Latina American girls who are underweight are less likely to be

bullied. On the other hand, Latina American girls who are overweight are more likely to be bullied at school, while African American girls who are overweight are less likely to be bullied. It is possible that the differences in bullying practices across the different races are accounted for by socio-cultural differences in ideal body type. For instance, African American culture may be more optimistic about weight overall. In fact, studies have suggested that the ideal body weight for Hispanic women that acculturated to the U.S. dominant culture and White women is less than the ideal weight for African American women (Fitzgibbon, Blackman, & Avellone, 2000; Fletcher, 2018; Lynch, 2019) Additionally, "adherence to a heavier cultural may protect women from developing eating disorders and overly stringent goals for body weight" (Fitzgibbon, Blackman, & Avellone, 2000, p. 583).

Additionally, with respect to weight among males, Kahle and Peguero (2017) found that boys who are underweight, overweight, or at risk of being overweight are more likely to be bullied than boys who are within normal weight limits. It is possible that underweight boys, who are smaller in size are perceived as weak by their peers, which contributes to target vulnerability (Kahle & Peguero, 20017). Thus, being underweight is beneficial for girls, as it aligns with the ideal body image and the male gaze; being underweight is not beneficial for boys, as they are smaller, weaker, and viewed as an easier target.

With regard to race and ethnicity among males, African American males are less likely to be bullied, while Asian Americans are more likely to be bullied than White Americans. The likelihood of males engaging in bullying behaviors may differ based on racial/ethnic background and cultural beliefs. For instance, African Americans are often perceived to be strong and 'dangerous,' while Asian Americans and "'smart' students are sometimes perceived as weak, and therefore are victimized more often" (Kahle & Peguero, 2017).

When considering the intersectionality of weight, race, and ethnicity among males, Kahle and Peguero (2017) found that Latino American and Asian American boys who are underweight are more likely to be bullied, while Latino American, Asian American, and African American boys who are overweight are less likely to be bullied. Again, these results may be influenced by the socio-cultural differences in ideal body type among differing races. In general, studies have indicated that Latino Americans, Asian Americans and African Americans are complacent, optimistic about their ideal body weight, have higher weight thresholds than women, and are more accepting of overweight statuses among males of color (Fletcher, 2014; Yancey et al.2006). While understanding how weight, race, and gender intersect among bully-victims, It would be interesting to see if weight, race, and gender predict who is likely to be a bully. That is, are bullies typically overweight, underweight, or within normal weight limits? Does the race of the bully impact their bullying practices? Additionally, is it possible that the combined of being a certain weight and race have a larger impact on bullying practices?

#### Doing Gender, Heterosexuality, and Bullying

While the studies on gender differences have provided great insight into how boys and girls bully others, some scholars are critical of these studies. Ringrose and Renold posit that previous studies on gender differences fail to examine the "gendered, heterosexualized dynamics of violence for children and young people" (2009, p. 590). Additionally, previous studies "reduce and essentialize the relationship between gender, victimization, and bullying" (Ringrose & Renold, 2009, p. 576). For example, some of the previous literature on gender differences states that girls are more likely to use relational bullying (Carrera-Fernandez et al., 2013; Jeffrey, Miller & Linn, 2001), whereas boys are more likely to use physical and verbal bullying (Iossi Silva et al., 2013; Stubbs-Richardson et al., 2018). Moreover, previous theorists suggest that boys are more likely to be bullies and girls are more likely to be victims (Carrera-Fernandez, 2013; Sterzing et al., 2014). These statements essentialize boys as physically aggressive and violent, and girls as non-aggressive, nonchalant, and even helpless. Ringrose and Renold (2009) suggest that essentializing gender differences legitimizes normative gender roles and hierarchies. Thus, boys and girls perform bullying in "normal" ways (i.e., boys use physical aggression and girls use relational), and the teachers pass the acts over as natural practice (Ringrose & Renold, 2009). As such, Ringrose and Renold propose that what is normally "identified as 'bullying' tends to be that which transgresses normative performances of young masculinity and femininity" (2009, p. 577).

There are instances in which boys can bully others and teachers do not interpret the act as bullying. For instance, boys can use violence and aggression in the form of 'games' (e.g., the tripping up game) and it is acceptable. Indeed, this gaming of violence is considered normal, thus, boys that engage in this form of bullying are unlikely to be labelled as bullies. Thus, teachers overseeing boys' gaming violence will find that such behavior should not require intervention.

However, when boys violate "appropriate modes of heterosexualized appearance and/or behavior" and transgress normative performances of masculinity by enacting violence against girls, then their acts are interpreted as 'bullying' and they are punished. As such, boy's violence is sanctioned "when it dramatically and publicly transgresses class, sexual, and gender codes" (Ringrose & Renold, 2009, p. 581). For instance, if a boy grabs a girl and smacks her against a wall, then he is transgressing the normative performance of masculinity. Therefore, the boy's act will be seen as bullying and he will be punished. However, boys can, and often do, get away with forms of sexual harassment towards girls, as those acts are considered to be a part of the normative performance of masculinity.

According to Ringrose and Renold, boys can be victims of bullying as well. Boys are often viewed as victims if they are sexually "deviant [or] feminized, and therefore, as an abject subject" (Ringrose & Renold, 2009, p. 582). Thus, as mentioned previously, boys are more likely to be bullied by other boys if they appear feminine or do not adhere to typical masculine gender roles. When boys are victims of bullying, they usually do not report it, because they are afraid of being seen as weak. Additionally, boys who are victims of bullying are often told by their parents to engage in hegemonic heteronormative masculinity by 'standing up' for themselves and fighting the bully.

Ringrose and Renold (2009) also found that there are instances in which girls' behavior are not recognized as bullying behavior. The authors state that there are norms of femininity, which calls upon girls to perform niceness/goodness and be caring, nurturing, supportive, non-competitive, and sexually innocent/respectable. However, similar to hegemonic masculinity for boys, idealized femininity is practically unachievable for girls. Because idealized femininity is unachievable, girls may use other means to position themselves within the female hierarchy. As such, girls often utilize indirect forms of meanness within private spheres in order to regulate other girls' sexuality. Ringrose and Renold argue that it is "normative for girls to position themselves and others in sexual hierarchies, invoking regulative discourses around sexuality, appearance, and behavior in the private spaces of their friendships as a mode of constructing idealized femininity" (2009, pp. 585-586). Moreover, girls can use relational aggression and indirect meanness in secrete/private rituals, and it will not be categorized as bullying.

However, there are instances where girls' behaviors are seen as bullying. According to Ringrose and Renold (2009) girls' behaviors are labelled as bullying when they openly fight verbally. This is because verbal fighting transgresses feminine norms, which requires feminine behavior to be "hidden, silent, secretive, covert, and repressive" (Ringrose & Renold, 2009, p. 587). Additionally, Ringrose and Renold suggest that, when girls are bullied, they are expected to deal with it by 'just being friends' with their bully. This solution "trivializes [the victim's] problem. It also re-regulates the girls strongly back into normative femininity, deflecting responsibility for coping with conflict back onto the nurturing and passive victim motifs of idealized girlhood, in the incitement to get along no matter what the context or cost" (Ringrose & Renold, 2009, p. 587). In other words, even when girls are the victims of bullying, they are often told to be friends with the bully, which places the responsibility of resolving the conflict on the victim.

These findings from Ringrose and Renold's (2009) study are particularly valuable to the literature on bullying. They have provided insight on the types of behaviors that are classified as bullying. They posit that behaviors are often not considered bullying unless they transgress normative gender performances. This idea is novel and beneficial, as most scholars have not examined or studied how teachers justify intervention for some conflicts and not for others.

Additionally, the authors highlight the weakness of examining bully discourses that "are organized around binaries of bully and victim, which enact rigid gender norms and support heteronormative power relations" (Ringrose & Renold, 2009, p. 590). Moreover, their study points out the limitations in anti-bullying policies, which ignore "gender, heterosexuality, and the social, cultural, and subjective dynamics of conflict and aggression among [teenagers]" (Ringrose & Renold, 2009, p. 590). However, there are a few additional considerations that Ringrose and Renold's study doesn't address, such as the intersectionality of gender with other social identities, such as race and weight. For instance, there may be normative performances of masculinity and femininity among African American individuals that differ from White American individuals. In addition, Ringrose and Renold's study does not examine how a bully choose their victim and victim responses.

#### A Bully's Choice of Victim and Their Response

Several scholars have examined how bullies choose their victims; however, Veenstra et al.'s (2010) research stands out because their work is easy to comprehend, their sample includes multiple schools (most studies usually examine one to eight schools and have a smaller sample size), and they examine gender in relation to bullies and victims in order to understand a bully's choice in victims. Veenstra et al. (2010) argue that bullies choose their targets strategically, so as to minimize loss of affection from their friends and peers. Bullies typically choose victims who are the same sex as the bully. As such, girls are more likely to bully other girls, and boys are more likely to bully other boys. Moreover, bullies typically choose victims who are rejected by classmates, because they are less likely to be defended by their classmates. Moreover, Veenstra et al. (2010) found that, when male bullies target rejected victims, their peers typically accept the bullying practices. However, when girls bully boys, then the bully loses peer acceptance, and their male and female peers reject the female bully. These results can be explained through an analysis of gender norms and expectations. For example, boys are allowed to be physically aggressive, competitive, and dominating. As such, it is perfectly acceptable for boys to bully rejected victims, as that aligns with the normative performance of masculinity (Ringrose & Renold, 2009). Girls, on the other hand, are often expected to be complacent, caring, nurturing, passive, and supportive (Ringrose & Renold, 2009). Therefore, when girls bully boys they are transgressing female gender norms which leads to them being rejected by others. Unfortunately, this study did not examine peer acceptance of female bullies targeting female victims, nor did Veenstra et al. (2010) examine the victims' responses to bullying.

However, Richman and Leary provide great insight on the victim's responses toward their bullies. Richman and Leary (2009) propose that victims can adopt one of three responses toward a bully: prosocial, asocial, and antisocial response (as cited in Stubbs-Richardson et al., 2018). The prosocial response "consists of attempts to promote acceptance, such as mending the harmed relationship" (Stubbs-Richardson et al., 2018, p. 48). Victims of bullying are more likely to use this response when they believe that they can repair their relationship with the bully. Asocial responses "include fleeing from rejection, such as avoiding the aggressor, peers, and related social events in the attempt to prevent further harm" (Stubbs-Richardson et al., 2018, p. 43). Lastly, antisocial responses "consist of retaliatory and aggressive behaviors that are often characterized by a lack of self-control and negative emotions" (Stubbs-Richardson et al., 2018, p. 43). Victims, regardless of whether they are male or female, are more likely to engage in asocial responses by avoiding the bully. However, there are some gender differences with regard to antisocial and prosocial responses among victims; "Girls are more likely to engage in prosocial responses than boys, whereas boys are just as likely to choose anti-social responses as prosocial responses" (Stubbs-Richardson et al., 2018, p. 39). Thus, girls are more likely to try to 'just be friends' with their bully and repair the relationship. Boys, on the other hand, are just as likely to 'stand up for themselves' as they are to 'be friends' with the bully. These findings are similar to the findings presented in Ringrose and Renold's (2009) study.

The literature on gendered bullying has provided a lot of information on bullying practices. First, we know that boys are more likely to engage in physical bullying than girls. However, although we know that girls don't physically bully others often, there are instances in which girls can and do use violence to bully others. As such, it is important to examine the prevalence rate of physical bullying across gender and how it differs based on physical characteristics and social identities. We also know that gendered bullying among girls is controversial, with some scholars suggesting that girls are more likely to use relational bullying and other scholars reporting no gender differences for relational bullying practices (Carrera-Fernandez et al., 2013; Iossi Silva et al., 2013; Stubbs-Richardson et al., 2018). Second, research studies reveal that there are gendered differences in bully victimization (Carrera-Fernandez et al., 2013; Iossi Silva et al., 2013; Jeffrey, Miller & Linn, 2014; Jeffrey, Miller & Linn, 2015; Jeffrey, Jeff

2018). Additionally, scholars also suggest that weight, race, and ethnicity impact bully victimization as well (Fitzgibbon, Blackman, & Avellone, 2000; Fletcher, 2018; Kahle & Peguero, 2017; Lynch, 2019). Third, Ringrose and Renold suggest that "bullying [behaviors tend] to be that which transgresses normative performances of young masculinity and femininity" (2009, p. 576) Lastly, victim responses are gendered such that girls are more likely to engage in prosocial responses, while boys are just as likely to engage in prosocial responses as they are to engage in antisocial responses (Stubbs-Richardson et al., 2018).

Despite the vast amount of literature on gendered bullying, there are a few areas of research that have been understudied. Although the literature points out that girls are less likely to use physical bullying practices, there are instances in which girls do use physical bullying. However, scholarship has yet to examine the girls use of physical bullying practices, so it is unclear if race, age, weight, and the gender of the victim impact girls physical bullying behaviors.

#### **Bullying in Rural Areas**

Rurality, like bullying, is a complex and hard-to-define concept. Where do rural areas begin? Where do they end? How do we define rural? These questions are rather difficult to answer, especially when we consider the many ways to measure the term "rural." Because of its complexity, scholars have provided various measurements of rural location. However, most scholars tend to define rurality based upon the socio-geographic locality or as a social construct. The location approach to defining rural defines rural areas as a "place that is distinguished by certain attributes," such as population size, dependence on farming, and a "combination of social, demographic, economic, and/or

cultural aspects" (Brown & Schafft, 2011, p. 4). Rural areas are indicated by small population size, spatial separation from metropolitan centers, small number of jobs and firms, limited choices in institutional realms, and characterized by close personal relationships (Brown & Schafft, 2011). On the other hand, the social constructivist approach defines rurality based upon the "symbols and signs people imagine when they think about rurality" (Brown & Schafft, 2011, p. 5). Thus, according to this approach, cultural ideals that people consider to be rural shape and define rural areas.

When considering these two approaches, the locality approach remains the most popular way of measuring rurality, as measuring location is much simpler than measuring people's perceptions of rurality. As such, the U.S. uses two methods to measure and define rurality based upon geographic location: the U.S. Bureau of the Census and the U.S. Office of Management and Budget (OMB). The U.S. Census Bureau conceptualizes rurality based upon population size and density (Brown & Schafft, 2011; Nelson, 2019). The OMB, on the other hand, utilizes "both demographic and economic criteria to identify metropolitan" and non-metropolitan regions (Brown & Schafft, 2011, p. 18). Thus, metropolitan areas include an urbanized area, and nonmetropolitan areas "are treated as residuals, that is, they are defined by what they are not, not what they are" (Brown & Shafft, 2011, p. 18).

In addition to defining rurality, it is also important to note why rural people and places matter in an urbanized society. First, the rural population accounts for a large number of people. In 2006 the rural population accounted "for almost sixty million persons, which is a large population in its own right" (Brown & Schafft, 2011, p. 20). Due to the large number of people that live in rural areas, problems that occur within rural locations, including bullying perpetration and victimization, merit attention. Despite this fact, few scholars have examined the impact of geographic location on bullying practices. Second, "where a person lives is important because it contributes to one's personal identity" (Brown & Schafft, 2011, p.18). Hence, studies should examine youth in rural locations, as well as examine the impact of geographic location on personal identity, life chances, and social capital. Third, as mentioned above when discussing gender differences in bullying perpetration, geographic location may impact the prevalence rates of bullying perpetration and gendered bullying. Thus, it is important to note that studies on bullying that are conducted in urban areas may not generalize to more rural areas.

Consequently, there are fewer studies on rural locations, despite the fact that living in a particular geographic location may impact how people socialize, behave, and think. It is possible that individuals in rural areas may bully others for different reasons than the individuals who live in urban areas. Hence, the current study will examine geographic location as a potential influencing factor on physical bullying practices among boys and girls.

While the studies on bullying in rural areas are limited, there are a few studies that examine the frequency of bullying in different geographic locations. Prior research has not reached a consensus on whether bullying rates are higher within rural schools. Some studies suggest that, although there is bullying in rural schools, there is no difference in the frequency of bullying across geographic locations (Lehman, 2014). Additionally, several studies have indicated that, rather than geographic location, the context of the school influences the risk of being bullied (Espelage & Swearer, 2003). In fact,
urbanicity, poverty, increased racial diversity, and lack of social control all appear to increase the risk of being bullied (Bradshaw, Sawyer, & O'Brennan, 2009; Rist, 1970; Tajfel, 1978; Tajfel & Turner, 1979; Vitoroullis & Valliancourt, 2015; Zimmerman, Khoury, Vega, Gil, & Warheit, 1995).

Additionally, there has been controversy on how school size can affect bullying perpetration and victimization rates. For instance, Farmer et al. (2011) found that smaller schools had more reports bullying than larger schools, which may support the notion that individuals in rural schools have higher frequencies of bullying than urban and suburban schools. However, other studies have suggested that larger schools have increased risk of having more bullies than schools that are smaller (Bradshaw et al., 2009; Stewart, 2003). As such, it is possible that there may be a larger number of bullies in urban locations, but that there is more bullying conducted by only one or two individuals in rural areas (Klein & Cornell, 2010; Ma, 2001).

In contrast, other research studies in the United States have suggested that bullying occurs more frequently in rural areas than in urban areas. Stockdale et al. (2002) conducted one of the first studies on bullying in rural locations. They examined bullying in seven rural Illinois public schools. These scholars found that, overall, 76% of students reported being verbally bullied and 66% were physically bullied at least once a week. Additionally, the authors found that "being bullied is correlated with being aggressive. . . bullying therefore appears to occur within a culture of violence" (Stockdale et al., 2002, p. 276). Dulmus et al. (2004) conducted a very similar study in southeastern rural Appalachia and found that 82% of students reported being bullied. They state that the percentage of students who were bullied in their study was much higher than the national average. As such, Dulmus et al. (2004) argued that bullying occurs more frequently in rural locations.

Farmer et al. (2011) also examined bullying in rural contexts within the United States. They collected data from rural schools from the "Far Western, Midwestern, Northern Plain, Southwestern, Southeastern, Appalachian, and Deep Southern regions of the United States" (Farmer et al., 2011, p. 1108). Moreover, they classified the schools into five locale codes: rural distant, rural remote, rural fringe, town distant, and town remote. Also, schools were categorized into two different groups: schools that included a middle school transition and schools that did not include a middle school transition. The authors found that schools without transitions had more bullies than schools with a transition. Additionally, they found that smaller schools had more bullies than larger schools, which may support the notion that individuals in rural schools have higher frequencies of bullying than urban and suburban schools. The findings from Nansel et al.'s (2001) study also supports this idea. Nansel et al.'s (2001) study is a nationally representative study of the students in 6<sup>th</sup>-10<sup>th</sup> grade within the United States. The authors of this study found that students in rural locations bullied others more frequently than students in urban and suburban locations.

The notion that bullying occurs in rural locations can also be found in studies outside of the United States. For example, Kulig et al. (2007) conducted a study of students who lived in different geographic areas of Western Canada. They found that bullying primarily occurred in schools and that individuals bullied others to obtain/maintain their power. Moreover, they found that the victims of bullying were targeted because they were different from the bullies, belonged in particular social groups, or were overweight (Kulig et al., 2007).

While there have been a few studies conducted on bullying in rural youth, such as the ones mentioned above, it is more common for studies to be conducted in urban areas. Furthermore, the information from the few studies on bullying in rural contexts is inconclusive but generally suggest that bullying does occur in rural areas and that school size and school transitions affect the frequency of bullying in rural schools. While these findings provide statistical information on bullying in rural contexts, the scholarship has yet to include bullying as a group process, as well as the influence of social networks and peer support on bullying behaviors. Moreover, due to the limited number of studies on bullying in rural locations, the literature on gendered bullying in rural contexts is almost nonexistent. However, there is one such study that examines how bully-victimization is impacted by rurality.

### The Interaction of Gender and Rurality on Bully-Victimization

Hilarksi et al. (2004) examined bully-victimization among students from three rural public schools. Although the researchers do not identify the state or specific location where they collected their data, they do say that the schools were in a Southeastern rural region of the U.S. and that "98% of [the students identify] as Caucasian and the dominant culture is Appalachian" (Hilarski et al., 2004, p. 10). They found that, overall, girls may experience just as much overt bullying as boys. According to their study, girls in middle school were more likely to experience threatening victimization (i.e., being threatened or forced to do things). Boys in middle school, on the other hand, did not report any experiences of threatening victimization. "It suggests that females in this study were exposed to more chronic, weekly or more, overt bullying-victimization in comparison to males" (Hilarksi et al., 2004, p. 19). Moreover, there were no gender differences with regard to physical bullying, which negates the notion that boys are more likely to engage in physical bullying.

Thus, the results of this study indicate that the interaction of rurality and gender may influence bullying rates and trends among middle school students. However, more research needs to be done in order to determine if these results can be generalized to all rural contexts, or just rural Appalachian regions. Additionally, future research needs to examine bullying perpetration rates, as it is not clear if girls were overtly bullied by other girl or by boys.

### **Connecting the Literature to This Study**

While scholars have provided great advancements in the realm of studying bullying, there are also limitations to their studies. First and foremost, although a few studies have examined bullying within rural contexts, the generalizability of these studies are still unclear. Second, it is unknown if the gender differences in bully perpetration and gendered responses to bullies, which I have discussed in length, are applicable to individuals within rural locations. Third, scholars have not examined girls' use of physical violence as a form of bullying. Although some scholars suggest that girls are less likely to use physical violence, Hilarski et al.'s (2004) study suggest that the girls in rural locations may have a higher prevalence rate of overt bullying and bullyvictimization. Therefore, research on girls' physical bullying has been understudied, and there are conflicting results which may indicate that gendered bullying is influenced by geographic location. Thus, I ask the following questions: a) What is the probability of girls and boys using physical violence as a way to bully others? b) Does the likelihood and frequency of physical bullying differ based upon gender? c) Are girls in rural areas more likely to resort to physical bullying practices? c) To what extent does social class, weight, race, geographic location and social capital impact a girl's tendency to use physical violence? d) Does race, geographic location, social class, weight, and social capital have an impact on girls' tendency to be physically bullied? e) Are there differences between predictors for girls' and boys' who are physically bullied? f) Are there differences between the predictors for girls' and boys' who use physical violence as a means for bullying?

In order to gain a more complete understanding of bullying practices and behaviors, it is necessary to conduct a study that examines girls' use of physical violence as a form of bullying within both rural and urban contexts. This will require examining girls and boys in school, their peer network, their demographic backgrounds, and their bullying behaviors. Examining these issues will provide important insight into a group of individuals that have long been understudied in the literature. It is possible that girls from lower class or working-class families are more likely to resort to violence because they do not have the necessary social capital to be popular. Additionally, as perhaps suggested by the results from Hilarski et al's (2004) study, it is also possible that girls from rural areas will be more likely to engage in overt forms of bullying, such as physical violence. Thus, my thesis will examine these factors in an attempt to contribute to the literature on girls' bullying behaviors, bullying in rural locations, and the intersectional relationship between gender, weight, and race on physical bullying practices.

### **Chapter 3: Methods**

### **Data Collection and Sampling**

In order to answer the research questions listed above, I used secondary data from the U.S. Health Behavior in School-Aged Children (HBSC) survey. This survey has a nationally representative sample of students in the U.S. during the 2009-2010 school year. In total, 314 schools participated in the study. The survey contained 315 items, which included questions about geographic location, nutrition, physical and mental health, bullying, violence, relationships with family and friends, perceptions of school, and drug use. The participants in the survey were  $5^{\text{th}} - 10^{\text{th}}$  grade students that attended a public or private school within the United States. For this study, I examined the students in the 7<sup>th</sup>, 8<sup>th</sup>, and 9<sup>th</sup> grades. In total, there were 8,536 observable cases in the data set; however approximately 72% of the cases had missing values. As such, predictive mean matching was implemented with chained equations to predict values for the participants' missing responses. Predictive mean matching was used in an effort to improve substituted value accuracy, as this statistical procedure analyzes each participant's responses to previous questions in order to estimate their response for the questions that they did not answer. Thus, the final sample size used for this research study is 8, 536 students.

The sample demographics are nationally representative of the United States (Iannotti, 2013). The three most statistically prevalent racial groups were White (53%), Hispanic (29%), and Black (20%). Overall, 48.3% of participants identified as a boy and 51.7% identified as a girl. As for academic standing, 34.2% of students reported that they were in the 7<sup>th</sup> grade at the time of the survey, 35.8% of students were in the 8<sup>th</sup> grade, and 30% of students were in the 9<sup>th</sup> grade. Subjective social class ranged from not at all

well off (11%) to very well off (40%). A plurality of students lived in a suburban location (38%), followed by urban locations (30%), rural locations (27%) and unclassified locations (5%). Lastly, 13.7% of the sample population had reportedly been physically bullied by other students and 12.4% had reportedly physically bullied others. Approximately 8% reported being physically bullied at least once or twice in the past 60 days, 2% reported being physically bullied two or three times a month, 1.9% reported being physically bullied once a week, and 2% reported being physically bullied several times a week. Approximately 7.7% reported physically bullying others once or twice in the past 60 days, 1.6% reported physically bullying others two or three times a month, 1.4% reported physically bullying others once a week, and 1.7% reported physically bullying others several times a week. Therefore, the majority of respondents were White female 8<sup>th</sup> graders living in suburban locations. Very few individuals reported being physically bullied or physically bullying others. But, of those who are physically bullied, most students reported being physically bullied frequently. Additionally, of those who physically bully others, most students reported physically bullying others frequently.

However, the demographics vary by gender. The racial distribution, subjective social class, and geographic location rates for the females-only sample (N = 4,409) are the same as the full sample. However, among the girls, there were more students in the 7<sup>th</sup> grade (36.2%) than the 8<sup>th</sup> grade (34.4%) or 9<sup>th</sup> grade (29.4%). Altogether, 10.5% of females reported being physically bullied and 10.5% of females reported physically bullied and 10.5% of females reported physically bullying others. For the males-only sample (N = 4,127), the racial distribution, subjective social class, and geographic location rates were the same as the full sample. However, among the boys, there were more students in the 8<sup>th</sup> grade (37.4%) than the 7<sup>th</sup> grade

(32%) or the 9<sup>th</sup> grade (30.6%). Additionally, a higher percentage of males than females reported being physically bullied (17% and 10.5% respectively) and a higher percentage of males than females reported physically bullying others (14.5% and 10.5% respectively). Thus, among the female subsample, the majority of students were 7<sup>th</sup> graders. Among the male subsample, the majority of students were 8<sup>th</sup> graders. Additionally, boys were more likely to be physically bullied or physically bully others than females.

### Measures

### **Dependent Variables**

The purpose of this research was to examine any potential differences in physical bullying victimization and perpetration among boys and girls. As such, there are four dependent variables: frequency of physical bullying victimization, frequency of physical bullying perpetration, likelihood of physical bullying perpetration, and likelihood of physical bullying victimization. The first two dependent variables are ordinal frequency variables, while the other two dependent variables are dichotomous categorical variables. By using two different types of dependent variables, I was able to compare the frequency and probability of physical bullying practices in schools.

The first dependent variable, students who are physically bullied, is a measure of the frequency of physical bullying experienced by a student. This measure is operationalized as an ordinal variable with participant responses ranging from 1, indicating that they have been physically bullied once or twice in the past 60 days, to 4, indicating that they have been physically bullied several times a week (Figure 1).

### Figure 1

### Frequency of Bullying



The second dependent variable, frequency of physically bullying others, is also a frequency measure. This variable asks students how often they physically bully others. The 'frequency of physically bullying others' measure is also an ordinal variable, and has participant responses ranging from 1, indicating that participants have bullied others once or twice in the past 60 days, to 4, indicating that participants have bullied others several times a week (Figure 1).

The third dependent variable, likelihood of physical bullying perpetration, is also a dichotomous categorical variable. This variable measures the percentage of students who physically bully others. Participant responses range from 0, indicating that they do not physically bully others, to 1, indicating that the students do physically bully others (Figure 2). Within the sample, approximately 12% of students reported that they physically bully others. Similar to the probability of being physically bullied, the probability of physically bullying others did not vary much by gender (Figure 2).

The fourth and final dependent variable, likelihood of physical bullying victimization, is a dichotomous categorical variable that measures the percentage of students who are physically bullied. Participant responses range from 0, indicating that they have not been physically bullied, to 1, indicating that they have been physically bullied (Figure 2). Within the sample, approximately 14% of students are physically bullied. The likelihood of being physically bullied did not vary much by gender, however females were less likely to be physically bullied than males.

### Figure 2



Probability of Physical Bullying Perpetration and Victimization

### Independent Variables

The independent variables included in this study consist of measures intended to reflect the students' background characteristics, social capital, feelings about school, personal attitudes toward their parents and their body, and the combined effects of geographical location, race, and body mass index (BMI). As discussed in the literature review, popularity, power/dominance, race, weight, and rurality may impact the frequency and likelihood of physical bullying among students. However, as stated in the literature review, there has been a lack of information on females and physical bullying. Thus, the aforementioned independent variables were examined to determine if their effects on physical bullying varied by gender.

After the four dependent variables, the following variables listed in Table 1 are all of the independent variables used for this study. The first four independent variables are a set of variables that represent the demographics of the students in the sample, and include the following variables: gender age, subjective socioeconomic status (SES), and illness/disability. Gender identification was coded as either male (1) or female (2). However, after initial analyses were conducted, I filtered gender into two different subsamples. As such, I was able to analyze the variables that relate to physical bullying among girls only, as well as the variables that relate to physical bullying among boys only. This allowed me to examine any potential differences among boys and girls. Thus, there were three datasets used: the full sample, females-only sample, and males-only sample. Age ranged from 10 to 17 years of age, with an average of 13 years of age. Age was included due to the differences in physical bullying among students of different ages. Subjective SES, which asked respondents to rate how well-off their parents were, was

included in the list of demographics, as it may be correlated with the frequency and probability of physical bullying. SES was coded as very well off (1) to not at all well off (5). On average, 49% of the students reported that their family is averagely well off. The fourth and final demographic variable was illness/disability. With this binary variable, students were asked if they had a long-term illness, disability, or medical condition (like diabetes, arthritis, asthma, allergy, ADHD, or cerebral palsy) that had been diagnosed by a doctor. Out of the 8,536 participants, approximately 43% reported that they were diagnosed with an illness and/or disability. There were no significant differences in the averages of these four variables among the total sample, females-only sample, and males-only sample.

### Table 1

### Definition of Model Independent Variables Demographics Gender A dichotomous variable distinguishing females from males. Self-identified males given a value of 1, females given a value of 2. Age Respondent's current age [10 years of age:17 years of age] SES Respondent's describe how well off they perceive themselves to be. Values range from very well off to not at all well off [1:5]. Illness/Disability A dichotomous variable distinguishing those diagnosed with a long-term illness, diability, or medical condition from others. A value of 1 identifies the student as having an illness and/or disability, and a value of 0 is given to the students without illnesses and/or disabilities. Friend Variables Number of Female Friends The quantity of female friends that the respondent was close with; values range from none to three or more close female friends [0:3]. Parents Acceptance of Friends An average of how often the respondent's parents were accepting of the respondent's friends, with responses ranging from almost always to my parents haven't met my group of friends [1:4]. Friends' Age The respondent's age in comparison with the age of most of their friends. Potential responses were same age, older than respondent, younger than respondent where 1 = the same age and 3 = younger than the respondent [1:3]. An index of time spent with friends based on responses from two friendship questions: number of Time Spent with Frieds dys per week spent with friends after school and number of evenings per week spent out with friends. Higher valeues indicates more time spent with friends overall. School Variables Classmates are Nice Respondent assesses their relationship with their classmates based on the following statements: classmates accept me as I am, are kind and helpful, and enjoy being together. Respondents choose a number from a likert scale of 1:5 where 1= strongly disagree and 5= strongly agree. School Index An index of the respondent's evaluation of their school experience based on responses from the following questions: school performance, feelings about school, and pressured by schoolwork. Higher values indicate positive evaluation of school life, performance, feelings toward school, and low pressure from schoolwork. The quantity of fights that the respondent got into in the past year from no fights to 4 fights or more Number of Fights in the past year [1:5].

### Definition and Measurement of Model Independent Variables

# Table 1 continued

Personal Attitudes	
Feel About My Parents	Index of the respondent's feelings toward his/her parents based on the following seven indicators: my parents help me when I need it, are loving, are understanding, make me feel better when I'm upset, lets me make my own decisions, treats me like a baby, tries to control the things I do. The last two indicators were reverse coded. Higher values indicate that the respondent has positive feelings about their parents.
Feel About My Body	Index of the respondent's feelings towrd his/her body based on the following indicators: feeling frustration, feeling hate, feeling anger, liking, being okay, and being satisfied with my body. Higher values indicate that the respondent has more positive feelings toward his/her body.
Non-Intersectoinal Variables	
Large BMI	Respondent's current body mass index indicates that the respondent is at risk of being overweight or the respondent is overweight. Those with a larger BMI are given a value of 1, all other BMIs at the 85th percentile or lower are given a value of 0.
Normal BMI	Respondent's current body mass index indicates that the respondent is at a healthy weight for their age and height. Those with a normal BMI are between the 5th and 85th perentile and are given a value of 1, all other BMI percentiles are given a value of 0.
White	A dichotomous variable distinguishing white respondents from other races. Self-identified white respondents are given a value of 1, all other races are given a value of 0.
Hispanic	A dichotomous variable distinguishing hispanic respondents from other races. Self-identified hispanic respondents are given a value of 1, all other races are given a value of 0.
Black	A dichotomous variable distinguishing black respondents from other races. Self-identified black respondents are given a value of 1, all other races are given a value of 0.
Rural	A dichotomous variable distinguishing respondents living in a rural location from other respondents. Those that reside in a rural location are given a value of 1, respondents within other geographic locations are given a value of 0.
Urban	A dichotomous variable distinguishing respondents living in a urban location from other respondents. Those that reside in a urban location are given a value of 1, respondents within other geographic locations are given a value of 0.
Suburban	A dichotomous variable distinguishing respondents living in a suburban location from other respondents. Those that reside in a suburban location are given a value of 1, respondents within other geographic locations are given a value of 0.
Intersectional Variables	
White, Normal BMI	The combined effect of being white and being at a healthy weight, where 1 denotes a white individual with a normal BMI and all other individuals are given a value of 0.
White, Large BMI	The combined effect of being white and having a large BMI, where 1 denotes a white individual with a large BMI and all other individuals are given a value of 0.
Hispanic, Large BMI	The combined effect of being hispanic and having a large BMI, where 1 denotes a hispanic individual with a large BMI and all other individuals are given a value of 0.

## Table 1 continued

Black, Normal BMI	The combined effect of being black and being at a healthy weight, where 1 denotes a black individual with a normal BMI and all other individuals are given a value of 0.
White, Rural	The combined effect of being white and living in a rural location, where 1 denotes a white individual residing in a rural area, and 0 denotes all other individuals self-identifying as a different race and/or living in a different geographic location.
Hispanic, Suburban	The combined effect of being hispanic and living in an urban location, where 1 denotes a hispanic individual residing in a urban area, and 0 denotes all other individuals self-identifying as a different race and/or living in a different geographic location.
Rural, Normal BMI	The combined effect of living in a rural location and having a healthy weight, where 1 denotes a respondent with a normal BMI resides in a rural area, and 0 denotes all other individuals that have a different BMI and/or live in a different geographic location.
Suburban, Normal BMI	The combined effect of living in a suburban location and having a normal BMI, where 1 denotes a respondent with a healthy weight resides in a suburban area, and 0 denotes all other individuals that have a different BMI and/or live in a different geographic location.
Urban, Large BMI	The combined effect of living in an urban location and having a large BMI, where 1 denotes a respondent with a large BMI resides in an urban area, and 0 denotes all other individuals that have a different BMI and/or live in a different geographic location.
Black, Large BMI, Rural	The combined effect of being black, living in a rural location and having a large BMI, where 1 denotes a black respondent with a large BMI that resides in a rural area, and 0 denotes all other individuals that have a different BMI, live in a different geographic location, and/or self-identify as a different race.
Black, Large BMI, Suburban	The combined effect of being black, living in a suburban location and having a large BMI, where 1 denotes a black respondent with a large BMI that resides in a suburban area, and 0 denotes all other individuals that have a different BMI, live in a different geographic location, and/or self-identify as a different race.
Black, Normal BMI, Suburban	The combined effect of being black, living in a suburban ocation and having a normal BMI, where 1 denotes a black respondent with a healthy BMI level that resides in a suburban area, and 0 denotes all other individuals that have a different BMI, live in a different geographic location, and/or self-identify as a different race.
Hispanic, Normal BMI, Suburban	The combined effect of being hispanic, living in a suburban ocation and having a normal BMI, where 1 denotes a hispanic respondent with a healthy BMI level that resides in a suburban area, and 0 denotes all other individuals that have a different BMI, live in a different geographic location, and/or self-identify as a different race.
Hispanic, Large BMI, Rural	The combined effect of being hispanic living in a rural location and having a large BMI, where 1 denotes a hispanic respondent with a large BMI that resides in a rural area, and 0 denotes all other individuals that have a different BMI, live in a different geographic location, and/or self-identify as a different race.
White, Large BMI, Rural	The combined effect of being white, living in a rural location and having a large BMI, where 1 denotes a whiterespondent with a large BMI that resides in a rural area, and 0 denotes all other individuals that have a different BMI, live in a different geographic location, and/or self-identify as a different race.

The next set of independent variables represents the participants' relationships with their friends. In general, research suggests that victims of bullying are characterized by lower social capital, loneliness, and isolation from other classmates. Bullies, on the other hand, are more likely to be popular and have the respect and support of their classmates. As such, the following friend variables were examined: number of female friends, parents' acceptance of friends, friends' age, and time spent with friends. The number of male friends was not included in the set of friend variables because, after initial exploratory analysis, it was noted that the number of male friends did not relate to the frequency and probability of physical bullying. First, the variable 'number of female friends' measured the quantity of female friends that the participant was close with; responses ranged from 'none' (0) to 'three or more' (3). The majority of students reported that they had at least 2 or 3 close female friends. 'Parents accept friends' was operationalized to determine whether the participant's parents were accepting of the participant's friends, with responses ranging from 'almost always' (1) to 'my parents haven't met my group of friends' (4). On average, 61% of the students reported that their parents almost always accepted their friends, and 26% reported that their parents sometimes accepted their friends. The next variable, 'friends' age,' was examined in order to determine whether individuals who are friends with older students are more likely to engage in physical bullying perpetration. According to Dominance Theory, older students are more likely to be involved in physical bullying perpetration, as they are higher up in the status hierarchy. As such, according to Differential Association Theory, if a student is friends with older individuals, then it is possible that they engage in the same type of behaviors, techniques, and motives for bullying that their older friends

engage in. Within this data set, friends' age varied among students, with responses ranging from same age (1) to older than you (2) to younger than you (3). Approximately 80% of the sample reported that most of their friends were the same age as them, while 18% reported that most of their friends were older than them, and 2% reported that most of their friends were younger than them. Finally, the variable 'time spent with friends' was created as an index from the two following variables - days spent with friends and nights spent with friends. For the variable 'days spent with friends,' participants were asked to report how many days per week they spent with their friends right after school, with answers ranging from 0 days to 6 days. On average, students reported that they spent 3 days per week with their friends. Participants were also asked to report the number of evenings per week that they spent out with their friends, with responses ranging from 0 evenings to 7 evenings. On average, students reported that they spent 2 evenings per week with their friends. Again, there were no significant differences between the averages of these variables for the total sample, females-only sample, and males-only sample.

The next section of variables examined the participant's feelings toward school. Previous research suggests that academic performance, school adjustment, and GPA may be related to bullying. Hence, the following independent variables were included in my analysis: school index, students are nice index, number of fights, and physically bullying others/being physically bullied. The school index is a compound measure that aggregates the following questions about school performance, feelings about school, and pressured by schoolwork. For the school performance variable, students were asked to report how they believe their teacher thinks about their school performance compared to their classmates. Higher scores indicate that school performance is below average while lower scores indicate that school performance is very good. The responses for 'feelings toward school' varied from 'I like school a lot' to 'I don't like school at all.' The third and final variable included in the index is pressured by schoolwork, with responses ranging from 'not at all pressured by the schoolwork I have to do' to 'I feel a lot of pressure from the schoolwork I have to do.' On average, most students report liking school a bit (48%), thinking that their teacher perceives their school performance as good compared to other classmates (39%), and being somewhat pressured by schoolwork (39%). In addition to the school index, another index was created to determine the participant's thoughts and feelings toward their classmates. Participants were asked to indicate how much they agree or disagree with the following statements: 'most of the students in my class(es) are kind and helpful,' 'the students in my class(es) enjoy being together,' and 'other students accept me as I am.' Responses ranged from strongly agree (1) to strongly disagree (5). In general, participants agreed that their classmates enjoy being together, are accepting of the participant, and are kind and helpful. I also thought it was imperative to include a variable that examines the number of fights a student got into in the past year, as fighting might be correlated with physical bullying perpetration. Responses ranged from not getting into fights at all to 4 fights or more in the past year. Most participants indicated that they only got in a fight once in the past year. Previous research has also suggested that students who are bullied are also likely to bully others. As such, two dependent variables (i.e., physically bullying others and being physically bullied) were listed as independent variables/predictors in the regression analysis. The respondents were asked to indicate whether they were bullied physically or physical bully others, with answers

ranging from not at all to several times a week. As mentioned previously, among the total sample, 13.7% had been physically bullied and 12.4% had physically bullied others. However, these percentages changed depending on whether the students were male or female. 17% of males reported being physically bullied, while 10.5% of females reported being physically bullied. Moreover, 14.5% of males reported physically bullying others, while only 10.5% of females reported that they physically bullied others.

Following the school variables, the next set of variables examined the participants' personal attitudes and feelings toward their body and toward their parents. Personal feelings toward their body was included in order to understand whether a student who is overweight, at a healthy weight, or underweight feel content with their body size. It is important to look at these personal perceptions, as they are shaped by cultural values and norms. For example, prior studies have noted that African American individuals do not feel as negatively about being overweight as White individuals (Himmelstein, Puhl, & Quinn, 2017). The 'feelings toward my body index' is an aggregate of the following indicators: feeling frustrated, hateful, angry, liking, okay, and satisfied with my body. Respondent choices include strongly disagree (1) to strongly agree (5). The variables that represent negative feelings toward the body were reverse coded so that lower values equate to having more negative feelings toward the body. Overall, higher scores on the 'feelings toward my body index' indicate that the participant had more positive feelings about their body. In general, participants reportedly agreed that they were satisfied, okay, and liked their body while they disagreed with feeling hateful, angry, and frustrated with their body. As such, the majority of respondents had positive feelings toward their body, with an average score of 3.8 on the

Likert scale of agreeableness where 1 = strongly disagree and 5 = strongly agree. In general, there was more variability in responses among females than males, such that the standard deviation for females' feelings toward their body was 0.94 and the standard deviation for males' feelings toward their body was 0.80. Additionally, personal feelings toward parents were examined. It is necessary to include this variable because prior research has indicated that stronger attachment to parents decreases the likelihood of delinquent activities, such as bullying (Espelage & Swearer, 2009; Chan, Choon, & Wing, 2013; Cho & Lee, 2018). Hence, the participants were asked to indicate how they felt about their parents by reporting how often their parents help them, are loving and understanding, make them feel better when upset, let the participant make their own decisions, treat the participant like a baby, and try to control the things the participant does. Respondent choices range from almost always (1) to almost never (3). The positive variables (i.e., my parents help me, are loving, are understanding, make me feel better when upset, and lets me make decisions) were reverse coded so that 1 = almost never and 3 = almost always. As such, higher scores indicate that students had positive feelings toward their parents, while lower scores indicate that students had negative feelings toward their parents. On average, students reportedly had positive feelings toward their parents.

The final set of variables depict the effects of race, geographic location, and BMI. As discussed in existing literature, bully victimization among youth is impacted by race and weight to create overlapping modes of discrimination. In this study, I examined bullying among White, Black, and Hispanic individuals, since those three races were the most prevalent in the sample. As mentioned previously, the majority of respondents were White (53%), followed by Hispanic (29%), and Black (20%). The distribution of participants among the various racial groups was the same for the total sample, femaleonly sample, and male-only sample. Geographic location was also examined to see if it had an impact on the likelihood and frequency of physical bullying. Geographic location was categorized into four values: rural, urban, suburban, and unclassified. A plurality of respondents lived in suburban locations (38%), followed by urban (30%), rural (27%), and unclassified (5%). The distribution of participants among various geographic locations was the same for the total sample, females-only sample, and males-only sample. The BMI of participants was split into two variables: individuals who are at risk of being overweight or are overweight and individuals that are within normal BMI limits. The average student had a healthy BMI status (M = 2.4, SD = 0.72). The average male student had a healthy BMI status (M = 2.4, SD = 0.72). The average male student had a healthy BMI status (M = 2.5, SD = 0.78).

After analyzing the effects of race, weight, and geographic location on each dependent variable, I combined the independent variables to see if being a certain race, gender, weight, and living in a certain geographic location would be more impactful. For example, is it possible that living in a suburban area is related to being physically bullied? Is it also possible that a white girl living in a suburban area is more likely to be physically bullied than a white girl living in a rural area? How does race impact the likelihood of physical bullying across various races and geographic locations? Thus, I created new various to depict the multiplicative effects of being a certain race, weight, gender, and living in a certain location, as these qualities may create overlapping modes of discrimination.

### Methods of Analysis

In order to analyze the quantitative data, I used Bayesian Model Averaging (BMA) to create a narrowed down list of variables that could predict the probability and frequency of physical bullying practices among boys and girls. BMA is an application of Bayesian inference to the problems of model selection, combined estimation and prediction that produces a straightforward model choice criteria and less risky predictions (Fragoso, Bertoli, & Louzada, 2018).

After analyzing how each independent variable correlated with each of the dependent variables, I used exploratory factor analysis (EFA) to determine which, if any, independent variables should be combined into one index. EFA takes a group of independent variables and analyzes them for potential correlations. I utilized EFA to examine variables that I thought were similar enough in nature to be combined into an index. The independent variables that had a stronger correlation to one another indicated that there was some underlying theme between the variables. As such, I created a few indices that represented the independent variables with stronger correlations to one another; feel about parents index, feel about body index, school index, and time spent with friends index.

After examining the potential independent variables with EFA and BMA's, I was able to narrow the list down to a total of 37 independent variables (Table 1). A preliminary correlation matrix consisting of all of the independent and dependent variables of interest was conducted (Table 2).

These independent and dependent variables were then analyzed with nested multiple linear regressions, which is a form of predictive analysis that contains a set of statistical processes to estimate the relationship between one dependent variable and several independent/explanatory variables. By including multiple explanatory variables, I was able to determine which independent variables best predict my dependent variable (Singleton & Straits, 2005). This capability is particularly useful to my study, as it ultimately seeks to determine if gender, race, geographic location, and weight are significant predictors of physical bullying, while also controlling for other relevant variables. Additionally, by conducting a nested series of models, I was able to compare between different models. Nested models were categorized as representing respondent demographic attributes, relationships with friends, perception of school, personal attitudes, and intersectional variables. As the models' progress, additional variables are included which can change the variance and overall model fit. Accordingly, the information provided from the regression models was analyzed to see the predictors of physical bullying perpetration and victimization differ for boys and girls. The results from these regression models are explained further in the findings chapter.

### **Chapter 4: Findings**

In this section, I review the results of the correlation matrix and the multiple regression analyses. The findings have been divided into sections based on the dependent variables; first, the correlations and regressions for the dichotomous indicator of being physically bullied, second the correlations and regressions for the dichotomous indicator of physically bullying others, third, the correlations and regressions for the frequency of physical bullying perpetration, and fourth, the correlations and regressions for the frequency of physical bullying victimization. Additionally, I compare the correlations and regressions of a male-only sample and a female-only sample. The correlation matrices provide insight into how two variables may or may not relate to one another. The matrices were used to identify patterns between the dependent variables and the independent variables, as well as the relationship between the independent predictor variables. The purpose of examining the initial correlation matrix was to explore and determine which pairs of variables require further analysis. There were two types of regression analyses performed: ordinary least squares (OLS) regressions and logistic regressions. The OLS regressions were useful in determining the significant predictors for the frequency dependent variables. However, because this study also examines dichotomous indicators (i.e., the probability of being physically bullied and the probability of physically bullying others), logistic regressions were used to examine the predictors for each of the dichotomous dependent variables: 'you do not physically bully others' and 'you are not physically bullied by others.'

Table 2a and Table 2b display correlation matrices for the independent model variables and the four dependent variables. Table 2a examines the correlations between

the dependent variables and the following model variables: demographics, friend variables, school variables, personal attitudes, race, BMI, and geographic location. The shaded sections in Table 2a represent the significant correlations at the 0.001 level, which are those with a correlation coefficient greater than or equal to r = .035. The first four columns show the correlations between the model variables and the dependent variables: physically bullied, you physically bully others, you do not physically bully others, you are not physically bullied by others.

It is important to note that the geographic location and race variables, by themselves, were not significantly correlated to the physical bullying victimization variables. Additionally, geographic location was not significantly correlated to the physical bullying perpetration variables. However, as previous literature has mentioned, the combined effects of race and weight appear to have an effect on bully-victims (Kahle & Peguero, 2017). As such, I chose to investigate the relationship between the dependent variables and the combined effects of being a particular race, having a certain BMI, as well as living in a certain geographic location. These results are shown in Table 2b. The shaded sections in Table 2b represent the significant correlations at the 0.01 level, which are those with a correlation coefficient greater than or equal to r = .027. The first four columns show the correlations between the model variables and the dependent variables.

## Table 2a

Correlation Matrix for Dependent Variables and Non-Intersectional Independent Variables

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
1 Frequency of Bullying Victimization																									
2 Frequency of Bullying Perpetration	0.30																								
3 Probability of Physically Bullying Others	0.28	0.83																							
4 Probability of Being Physically Bullied	0.84	0.25	0.28																						
5 Gender	-0.09	-0.05	-0.06	-0.10																					
6 Age	-0.04	0.02	0.00	-0.05	-0.08																				
7 SES	-0.07	-0.04	-0.05	-0.07	-0.02	-0.04																			
8 Illness/Disability	0.07	0.06	0.05	0.07	0.00	0.04	0.01																		
9 Number of Female Friends	-0.09	-0.03	-0.02	-0.08	0.21	-0.01	0.05	0.01																	
10 Parents Accept Friends	0.11	0.11	0.10	0.08	-0.04	0.04	-0.15	0.01	-0.06																
11 Friends Age	0.05	0.09	0.09	0.05	0.00	0.10	-0.04	0.08	-0.02	0.08															
12 Time Spent With Friends	0.01	0.09	0.10	0.01	-0.10	0.03	0.02	0.04	0.14	-0.09	0.12														
13 Classmates are Nice	0.16	0.09	0.08	0.14	0.06	0.04	-0.15	0.00	-0.15	0.17	0.04	-0.12													
14 School Index	0.11	0.12	0.13	0.11	-0.05	0.09	-0.18	0.04	-0.07	0.17	0.08	0.02	0.26												
15 Number of Fights	0.16	0.24	0.23	0.15	-0.15	0.05	-0.09	0.07	0.00	0.12	0.14	0.16	0.08	0.18											
16 Feel About My Parents	-0.14	-0.13	-0.13	-0.13	-0.06	-0.08	0.24	-0.04	0.05	-0.34	-0.11	0.07	-0.24	-0.28	-0.16										
17 Feel About My Body	-0.12	-0.06	-0.06	-0.11	-0.18	-0.01	0.18	-0.05	0.03	-0.13	-0.05	0.08	-0.23	-0.24	-0.04	0.30									
18 Large BMI	0.04	0.04	0.04	0.04	-0.05	-0.08	-0.06	0.04	-0.02	0.04	0.01	-0.01	0.04	0.01	0.00	-0.02	-0.22								
19 Normal BMI	-0.04	-0.04	-0.04	-0.04	0.05	0.06	0.06	-0.04	0.02	-0.05	-0.01	0.01	-0.04	0.00	0.00	0.02	0.20	-0.93							
20 White	0.01	-0.07	-0.07	0.02	0.02	-0.01	0.01	-0.03	-0.05	-0.15	-0.11	-0.08	0.03	0.00	-0.07	0.13	0.02	-0.07	0.07						
21 Black	0.01	0.05	0.05	-0.01	0.00	0.04	-0.03	0.06	0.03	0.09	0.08	0.09	0.01	-0.02	0.09	-0.06	0.10	0.05	-0.04	-0.40					
22 Hispanic	0.00	0.04	0.05	0.00	-0.01	-0.01	0.01	-0.01	0.04	0.10	0.05	0.04	-0.02	0.02	0.03	-0.09	-0.07	0.07	-0.06	-0.45	-0.19				
23 Rural	0.03	0.00	-0.01	0.02	0.02	0.00	-0.01	-0.01	0.00	-0.04	-0.02	-0.02	0.01	0.02	0.00	0.06	-0.01	-0.02	0.02	0.19	-0.07	-0.16			
24 Urban	-0.02	0.00	0.00	-0.01	0.00	-0.01	0.00	-0.02	-0.01	0.06	0.00	0.01	0.01	0.00	0.01	-0.04	0.01	0.01	-0.01	-0.20	0.07	0.16	-0.40		
25 Suburban	-0.01	0.01	0.01	0.00	-0.02	-0.02	0.01	0.02	0.02	-0.02	0.00	0.01	-0.02	-0.01	0.00	0.00	0.00	0.01	-0.01	0.01	-0.02	0.01	-0.47	-0.51	
Min	0.00	0.00	0.00	0.00	1.00	10.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.13	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Max	4.00	4.00	1.00	1.00	2.00	17.00	5.00	1.00	4.00	4.00	3.00	6.50	5.00	4.00	5.00	4.00	5.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Mean	0.25	0.22	0.88	0.86	1.52	13.36	3.43	0.43	3.59	1.60	1.23	2.46	2.31	2.17	1.78	3.14	3.79	0.33	0.64	0.53	0.20	0.29	0.27	0.30	0.38
SD	0.75	0.70	0.33	0.34	0.50	1.03	0.93	0.50	0.82	0.92	0.47	1.80	0.83	0.63	1.23	0.46	0.89	0.47	0.48	0.50	0.40	0.46	0.44	0.46	0.49

Note: N = 8536 all correlations > .035 are significant at the .001 level or better in two tailed tests

## Table 2b

Correlation Matrix for Dependent Variables and Interactional Independent Variables

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1 Frequency of Bullying Victimization																				
2 Frequency of Bullying Perpetration	0.296																			
3 Probability of Physically Bullying Others	0.275	0.83																		
4 Probability of Being Physically Bullied	0.835	0.25	0.28																	
5 White, Normal BMI	-0.03	-0.07	-0.07	-0.03																
6 White, Large BMI	0.049	0.00	0.00	0.06	-0.32															
7 Hispanic, Large BMI	0.01	0.04	0.04	0.01	-0.26	0.03														
8 Black, Normal BMI	0.012	0.04	0.04	0.00	-0.16	-0.16	-0.13													
9 White, Rural	0.02	-0.03	-0.03	0.02	0.32	0.18	-0.13	-0.14												
10 Hispanic, Suburban	-0	0.05	0.05	0.00	-0.18	-0.08	0.33	-0.08	-0.17											
11 Rural, Large BMI	0.033	0.02	-0.02	0.02	-0.22	0.41	0.09	-0.11	0.36	-0.11										
12 Rural, Normal BMI	0.007	-0.02	0.02	0.01	0.34	-0.20	-0.16	0.03	0.63	-0.17	-0.14									
13 Suburban, Normal BMI	-0.02	-0.01	-0.01	0.02	0.25	-0.24	-0.20	0.09	-0.27	0.28	-0.17	-0.26								
14 Urban, Large BMI	0	0.02	0.02	0.01	-0.25	0.16	0.36	-0.12	-0.16	-0.12	-0.10	-0.15	-0.19							
15 Black, Large BMI, Rural	-0.01	0.02	0.02	-0.02	-0.09	-0.02	-0.01	-0.04	-0.03	-0.04	0.40	-0.06	-0.07	-0.04						
16 Black, Large BMI, Suburban	0.017	0.00	0.01	0.00	-0.12	-0.01	0.02	-0.06	-0.08	0.02	-0.05	-0.08	-0.09	-0.06	-0.02					
17 Black, Normal BMI, Suburban	0.005	0.03	0.03	0.00	-0.08	-0.09	-0.07	0.57	-0.10	0.00	-0.06	-0.10	0.37	-0.07	-0.03	-0.04				
18 Hispanic, Normal BMI, Rural	0.019	0.02	0.02	0.02	-0.04	-0.07	-0.06	-0.02	0.03	-0.06	-0.05	0.37	-0.10	-0.06	-0.02	-0.03	-0.04			
19 Hispanic, Large BMI, Rural	0.008	0.00	-0.01	0.00	-0.10	0.03	0.37	-0.05	0.02	-0.05	0.43	-0.06	-0.07	-0.04	0.06	-0.02	-0.03	-0.02		
20 White, Large BMI, Rural	0.039	0.01	0.01	0.03	-0.18	0.55	-0.03	-0.09	0.50	-0.09	0.79	-0.11	-0.13	-0.08	0.03	-0.04	-0.05	-0.04	0.11	
Mir	n 0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Max	4.00	4.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Mear	n 0.25	0.22	0.88	0.86	0.24	0.11	0.03	0.11	0.15	0.35	0.12	0.04	0.03	0.10	0.01	0.03	0.04	0.03	0.02	0.05
SD	0.75	0.70	0.33	0.34	0.43	0.32	0.16	0.31	0.36	0.48	0.32	0.20	0.17	0.30	0.12	0.16	0.20	0.17	0.13	0.22

Note: N=8536 all correlations > .027 are significant at the .01 level or better in two tailed tests

# Probability of Physical Bullying Perpetration and Victimization and Independent Model Variables

When reviewing the first correlation matrix (Table 2a), there are several interesting correlations. In fact, a lot of the independent model variables are significantly correlated to all four dependent variables. The probability of students being victimized, the probability of students bullying others, the frequency of being physically bullied, and the frequency of physically bullying others are all correlated with the following variables: gender, SES, illness/disability, large BMI, normal BMI, and being White and having a normal BMI. As such, students that are male, have a low SES, large BMI, illness/disability are more likely to physically bully others and be physically bullied by others than females. Students that are White and have a normal BMI are less likely to physically bully others and to be physically bullied.

With regard to social capital, students whose parents accept their friends are more likely to be physically bullied, as well as physically bully others. Also, students who have friends that are older than them are more likely to physically bully others. Additionally, students who perceive their classmates as nice, engage in fights, do not like school as much, feel that their school performance is somewhat good, and do not feel a lot of pressure from their schoolwork are more likely to be physically bullied, as well as physically bully others. With regard to personal attitudes and feelings, students who have negative feelings toward their parents and their body are more likely to be physically bullied, as well as physically bully others.

However, there are a few differences that are important to discuss as well. First, individuals that are younger are more likely to be physically bullied and to be physically

bullied frequently but are not likely to physically bully others. Second, having more female friends is negatively related to being physically bullied, but is not impact whether a student physically bullies others. Third, being white is negatively correlated with physically bullying others, but is not significantly correlated with being physically bullied. Lastly, being African American or Hispanic are both positively related to physically bullying others, but not correlated with being physically bullied. Interestingly enough, geographic location was not significantly correlated with any of the bullying dependent variables. This result was different from what was expected, as I had hypothesized that living in a rural area might increase the frequency and likelihood of physical bullying.

In the correlations for the intersectional model variables (Table 2b) I examined the relationships between the dependent variables and the combinations of the following variables: race, BMI, and geographic location (Table 2b). The decision to incorporate these intersectional variables was made based on Exploratory Factor Analysis (EFA) and Bayesian Model Averaging (BMA). Several intersectional variables are positively correlated with being physically bullied, such as being white and having a large BMI (r = 0.06); and being white, living in a rural location, and having a large BMI (r = 0.03). On the other hand, only one variable was significantly negatively correlated with being physically bullied: being white and having a normal BMI (r = -0.03). With regard to physically bullying others, the following several intersectional variables were positively correlated with the probability and frequency of physical bullying perpetration: being Hispanic and having a large BMI (r - 0.04), being African American and having a normal BMI (r = 0.04), being a Hispanic student in a suburban location (r = 0.05), and being African American, having a normal BMI, and living in a suburban area (r - 0.03). Only one variable was negatively correlated with physically bullying others, which was being White and living in a rural location (r = -0.03).

### **Regressions Predicting the Probability and Frequency of Being Physically Bullied**

When examining the OLS and logistic regressions (Appendix), there are some interesting significant predictors for being physically bullied. Overall, it appears that being a young student, being a male student, and being a student with a disability are all significant predictors of being physically bullied and being physically bullied more often than others.

Concerning the friend variables, the quantity of female friends is a significant predictor in the likelihood and frequency of physical bullying victimization. For instance, students who do not have a large number of female friends are more likely to be physically bullied, and they are more likely to be bullied more frequently than students who have more female friends.

A student's relationship to their school and classmates also appears to significantly predict physical bullying victimization. Students who get into physical fights and physically bully others are more likely to be physically bullied. Interestingly, students who perceive their classmates as nice, helpful, and accepting are more likely to be physically bullied. This result was unexpected but could perhaps be due to the possibility that students are not physically bullied by their classmates. In fact, as the data indicates, students are typically physically bullied by older individuals.

Finally, the combined effects of being a certain race, having a certain BMI, and living in a certain geographic location can significantly predict the likelihood and

frequency of physical bullying victimization. With regard to being physically bullied, students who have a healthy weight and live in a rural location, regardless of race, are more likely to be physically bullied, with a significance level of 0.01. However, White individuals who have a large BMI, regardless of where they live, are also more likely to be physically bullied, with a significance level of 0.001. Interestingly, African Americans who are overweight and live in a rural area are less likely to be physically bullied than White individuals who are overweight and live in a rural area.

### **Regressions Predicting Probability and Frequency of Physical Bullying Perpetration**

There are also interesting predictors for the probability and frequency of physically bullying others. With regard to physical bullying perpetration, gender, age, and disability do not significantly predict the likelihood and frequency of a student physically bullying others. In fact, none of the demographic variables appear to predict the probability of physically bullying others. However, with regard to the frequency of physical bullying perpetration, it appears that students who have a high SES are more likely to physically bully others frequently than students who are not well off.

Concerning the friend variables, the quantity of female friends is a significant predictor in the likelihood and frequency of physical bullying perpetration. As mentioned previously, students with lower social capital are more likely to be physically bullied. In contrast, students who spend more time with their friends throughout the week and have friends that are older than them are more likely to physically bully others and are more likely to physically bully students more often.

A student's relationship to their school and classmates also appears to significantly predict physical bullying perpetration. Students who get into physical fights and are physically bullied are more likely to physically bully others. Also, students who have negative feelings toward school, feel pressured by schoolwork, and feel that their school performance is low are more likely to physically bully others and to bully others more frequently.

Finally, the combined effects of being a certain race, having a certain BMI, and living in a certain geographic location can significantly predict the likelihood and frequency of physical bullying perpetration. With regard to physically bullying others, students who are Hispanic and live in a suburban area are more likely to physically bully others (p < 0.05). However, students who are Hispanic, overweight, and live in a rural location are less likely to physically bully others (p < 0.05). Finally, students who are White and have a healthy BMI are also less likely to physically bully others, with a significance level of 0.01. These findings suggest that the interactions between race, geographic location, and weight can significantly predict physical bullying behaviors.

### **Comparative Analyses of Gender Subsamples**

Due to the fact that research has indicated bullying practices are gendered, it is important to examine how physical bullying practices may differ based on gender. With regard to the probability of being physically bullied (dependent variable 1, Figure 2), 17% of the boys reported being physically bullied, while only 10.6% of the females reported being physically bullied. As for the number of students who physically bullying others (dependent variable 2, Figure 2), there was a higher percentage of boys (14.5%) that reported they physically bullied others than girls (10.4%). With regard to the frequency of physical bullying, it is worth noting that there is more variation in the frequency of physical bullying among males (Figure 1). This indicates that there is a higher variability in how often males are physically bullied or physically bully others, while females are more likely to report that they are physically bullied or physically bully others less often.

Table 3a and Table 3b display correlation matrices comparing model variables and the dependent variables for the two gender subsamples. Column 1a, 1b, 1c, and 1d presents each predictor as it correlates to the four dependent variables for the female subsample. Row 1a, 1b, 1c, and 1d shows each bivariate correlation between the predictors and the dependent variables for the male subsample. There are several key differences between the two subsamples.

### Table 3a

Correlation Matrix for Dependent Variables and Non-Interactional Independent Variables by Gender

Varial	) la	1b	1c	1d	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	Mean	SD
1a Freque	ency of	0.29	0.27	0.84	-0.05	-0.07	0.07	-0.09	0.11	0.07	-0.01	0.22	0.12	0.15	-0.16	-0.18	0.03	-0.04	0.02	0.00	0.00	0.02	-0.01	-0.01	0.32	0.84
1b Freque	e 0.30		0.83	0.25	0.03	-0.05	0.06	0.00	0.11	0.11	0.10	0.11	0.13	0.23	-0.15	-0.09	0.05	-0.04	-0.07	0.05	0.06	0.01	0.00	0.00	0.26	0.75
1c Probal	0.28	0.83		0.27	0.01	-0.05	0.05	0.01	0.10	0.11	0.10	0.11	0.15	0.21	-0.15	-0.09	0.06	-0.05	-0.07	0.04	0.07	0.01	0.00	0.00	0.86	0.35
1d Probal	0.83	0.25	0.27		-0.07	-0.07	0.06	-0.07	0.10	0.07	-0.01	0.19	0.12	0.13	-0.16	-0.17	0.03	-0.04	0.02	-0.01	0.01	0.01	-0.01	0.00	0.83	0.38
2 Age	-0.04	0.00	-0.02	-0.04		-0.01	0.05	0.06	0.06	0.09	0.03	0.01	0.07	0.05	-0.07	0.03	-0.07	0.06	-0.01	0.07	-0.04	0.00	-0.02	-0.01	13.44	1.04
3 SES	-0.07	-0.02	-0.05	-0.07	-0.07		-0.01	0.05	-0.15	-0.06	0.00	-0.16	-0.17	-0.09	0.22	0.15	-0.06	0.06	0.02	-0.03	0.00	0.00	-0.01	0.01	3.45	0.93
4 Illness	0.08	0.06	0.06	0.09	0.02	0.02		0.02	0.01	0.09	0.06	-0.01	0.04	0.07	-0.04	-0.07	0.04	-0.05	-0.03	0.06	0.00	0.00	-0.05	0.05	0.43	0.50
5 Numb	e -0.05	-0.05	-0.04	-0.05	-0.08	0.06	-0.02		-0.03	0.03	0.23	-0.17	-0.03	0.08	0.02	0.06	0.00	0.00	-0.09	0.07	0.06	0.00	-0.02	0.03	3.41	0.96
6 Parent	s <b>0.09</b>	0.11	0.11	0.06	0.02	-0.16	0.02	-0.09		0.06	-0.09	0.17	0.16	0.11	-0.33	-0.12	0.01	-0.02	-0.15	0.07	0.12	-0.05	0.07	-0.02	1.64	0.96
7 Friend	£ 0.01	0.06	0.08	0.03	0.12	-0.03	0.07	-0.10	0.09		0.14	0.03	0.05	0.13	-0.10	-0.03	0.00	0.00	-0.11	0.08	0.05	-0.04	0.00	0.01	1.23	0.48
8 Time	5 0.00	0.07	0.08	0.01	0.02	0.03	0.03	0.07	-0.10	0.11		-0.14	0.02	0.17	0.05	0.05	0.01	0.00	-0.11	0.12	0.06	-0.04	0.01	0.03	2.65	1.83
9 Classr	r <b>0.11</b>	0.07	0.06	0.09	0.08	-0.15	0.01	-0.17	0.18	0.05	-0.10		0.25	0.09	-0.24	-0.23	0.03	-0.04	0.04	-0.01	-0.01	-0.02	0.03	-0.02	2.27	0.82
10 Schoo	1 <b>0.09</b>	0.10	0.11	0.09	0.12	-0.19	0.03	-0.11	0.18	0.11	0.02	0.27		0.19	-0.28	-0.22	0.01	0.00	0.03	-0.04	0.03	0.02	0.00	-0.01	2.20	0.63
11 Numb	e 0.16	0.24	0.24	0.15	0.03	-0.10	0.07	-0.05	0.12	0.14	0.13	0.09	0.16		-0.16	-0.07	-0.01	0.02	-0.07	0.08	0.02	0.01	0.00	0.01	1.97	1.32
12 Feel A	-0.13	-0.12	-0.12	-0.12	-0.11	0.26	-0.04	0.12	-0.36	-0.11	0.08	-0.24	-0.29	-0.18		0.28	-0.01	0.02	0.12	-0.04	-0.08	0.07	-0.04	-0.02	3.17	0.44
13 Feel A	-0.10	-0.05	-0.05	-0.09	-0.06	0.20	-0.04	0.09	-0.16	-0.08	0.07	-0.23	-0.29	-0.06	0.31		-0.21	0.20	0.04	0.08	-0.10	0.03	-0.01	-0.02	3.96	0.81
14 Large	0.04	0.04	0.02	0.04	-0.09	-0.06	0.03	-0.01	0.08	0.02	-0.05	0.05	0.00	0.00	-0.03	-0.24		-0.93	-0.07	0.01	0.08	-0.02	0.01	-0.01	0.35	0.48
15 Norma	a -0.03	-0.03	-0.02	-0.03	0.07	0.06	-0.04	0.02	-0.07	-0.02	0.04	-0.06	0.01	-0.01	0.03	0.22	-0.93		0.06	-0.01	-0.07	0.01	0.00	0.01	0.62	0.49
16 White	-0.01	-0.07	-0.07	0.01	0.00	0.01	-0.03	0.01	-0.16	-0.11	-0.04	0.01	-0.02	-0.07	0.14	0.01	-0.07	0.07		-0.40	-0.45	0.18	-0.22	0.03	0.52	0.50
17 Black	0.03	0.05	0.06	0.00	0.00	-0.03	0.06	-0.03	0.11	0.08	0.06	0.02	0.00	0.11	-0.07	0.11	0.08	-0.07	-0.40		-0.19	-0.05	0.05	-0.02	0.20	0.40
18 Hispar	n -0.01	0.02	0.02	-0.01	0.01	0.02	-0.01	0.02	0.08	0.05	0.02	-0.03	0.00	0.03	-0.09	-0.06	0.05	-0.05	-0.45	-0.19		-0.18	0.18	0.02	0.20	0.40
19 Rural	0.04	-0.02	-0.03	0.03	0.01	-0.01	-0.01	-0.01	-0.04	0.00	0.00	0.03	0.03	0.00	0.05	-0.04	-0.03	0.03	0.20	-0.08	-0.14		-0.39	-0.47	0.26	0.44
20 Urban	-0.02	0.01	0.01	-0.02	0.00	0.01	0.02	0.00	0.04	0.00	0.01	-0.01	0.00	0.01	-0.05	0.03	0.01	-0.01	-0.19	0.08	0.14	-0.40	0.50	-0.52	0.30	0.46
21 Subur	0.00	0.01	0.02	0.00	-0.04	0.00	0.00	0.02	-0.02	-0.02	0.00	-0.03	-0.02	-0.01	0.02	0.00	0.02	-0.03	0.00	-0.01	0.01	-0.47	-0.50		0.39	0.49
Min	0.00	0.00	0.00	0.00	10.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.13	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Max	4.00	4.00	1.00	1.00	17.00	5.00	1.00	4.00	4.00	3.00	6.50	5.00	4.00	5.00	4.00	5.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Mean	0.19	0.18	0.90	0.89	13.28	3.41	0.43	3.76	1.57	1.23	2.28	2.36	2.14	1.60	3.12	3.64	0.30	0.67	0.53	0.20	0.29	0.27	0.30	0.37		
SD	0.00	0.05	0.31	0.31	1.01	0.93	0.49	0.01	0.88	0.40	1./3	0.83	0.62	1.12	0.4/	0.94	0.46	0.4/	0.50	0.40	0.45	0.45	0.46	0.48		

Note: upper N = 4127, lower N = 4409, upper correlations represent male sample > 0.5 and lower correlations represent female sample >0.039 are significant at the 0.001 level or better in two tailed tests.

### Table 3b

Correlation Matrix for Dependent Variables and Independent Intersectional Variables by Gender

Variables	la	1b	1c	1d	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	Mean	SD
1a Frequency of Bullying Victimization		0.29	0.27	0.84	-0.02	0.04	0.01	0.00	0.03	-0.01	0.03	0.00	-0.02	0.00	-0.01	0.00	0.01	0.02	0.02	0.04	0.32	0.84
1b Frequency of Bullying Perpetration	0.30		0.83	0.25	-0.06	-0.01	0.05	0.04	-0.02	0.06	0.03	-0.01	-0.02	0.02	0.01	0.00	0.03	0.03	-0.01	0.01	0.26	0.75
1c Probability of Physically Bullying Others	0.28	0.83		0.27	-0.07	0.00	0.06	0.03	-0.02	0.07	0.03	-0.01	-0.03	0.02	0.02	0.01	0.01	0.04	-0.01	0.02	0.86	0.35
1d Probability of Being Physically Bullied	0.83	0.25	0.27		-0.03	0.06	0.01	-0.01	0.02	0.01	0.01	0.00	-0.02	0.02	-0.02	-0.01	0.00	0.02	0.00	0.03	0.83	0.38
2 White, Normal BMI	-0.04	-0.07	-0.06	-0.03		-0.32	-0.27	-0.16	0.30	-0.17	-0.22	0.33	0.28	-0.25	-0.09	-0.12	-0.07	-0.02	-0.10	-0.17	0.03	0.16
3 White, Large BMI	0.05	0.00	-0.01	0.06	-0.32		0.00	-0.16	0.19	-0.08	0.39	-0.20	-0.25	0.13	-0.03	-0.03	-0.09	-0.07	0.02	0.55	0.12	0.33
4 Hispanic, Large BMI	0.00	0.02	0.01	0.00	-0.25	0.05		-0.14	-0.14	0.34	0.08	-0.17	-0.21	0.36	-0.02	0.02	-0.08	-0.06	0.36	-0.04	0.24	0.43
5 Black, Normal BMI	0.03	0.04	0.05	0.01	-0.17	-0.15	-0.12		-0.14	-0.08	-0.12	0.06	0.10	-0.13	-0.05	-0.06	0.58	-0.02	-0.05	-0.09	0.12	0.33
6 White, Rural	0.02	-0.04	-0.04	0.02	0.34	0.16	-0.13	-0.14		-0.17	0.38	0.60	-0.26	-0.16	-0.03	-0.08	-0.10	0.04	0.02	0.53	0.18	0.38
7 Hispanic, Suburban	0.00	0.02	0.02	-0.01	-0.18	-0.07	0.32	-0.09	-0.17		-0.12	-0.16	0.27	-0.13	-0.05	0.02	0.01	-0.06	-0.05	-0.09	0.02	0.13
8 Rural, Large BMI	0.04	0.02	0.00	0.03	-0.22	0.42	0.10	-0.11	0.34	-0.10		-0.14	-0.18	-0.11	0.39	-0.05	-0.07	-0.05	0.43	0.78	0.09	0.28
9 Rural, Normal BMI	0.02	-0.02	-0.03	0.02	0.35	-0.20	-0.16	0.02	0.65	-0.17	-0.14		-0.25	-0.15	-0.05	-0.07	-0.09	0.36	-0.06	-0.11	0.16	0.37
10 Suburban, Normal BMI	-0.02	0.00	0.01	-0.02	0.22	-0.23	-0.19	0.09	-0.27	0.30	-0.16	-0.27		-0.19	-0.07	-0.09	0.38	-0.09	-0.08	-0.14	0.24	0.43
11 Urban, Large BMI	-0.01	0.02	0.01	0.01	-0.25	0.18	0.35	-0.12	-0.16	-0.11	-0.09	-0.16	-0.18		-0.04	-0.06	-0.07	-0.06	-0.05	-0.08	0.11	0.31
12 Black, Large BMI, Rural	-0.02	0.03	0.01	-0.02	-0.09	-0.01	-0.01	-0.04	-0.02	-0.04	0.42	-0.06	-0.07	-0.04		-0.02	-0.03	-0.02	0.06	0.01	0.01	0.12
13 Black, Large BMI, Suburban	0.04	0.00	0.01	0.02	-0.13	0.01	0.02	-0.06	-0.08	0.01	-0.05	-0.08	-0.10	-0.05	-0.02		-0.04	-0.03	-0.02	-0.04	0.03	0.16
14 Black, Normal BMI, Suburban	0.00	0.04	0.05	0.00	-0.09	-0.08	-0.07	0.56	-0.10	0.00	-0.06	-0.10	0.36	-0.07	-0.02	-0.03		-0.03	-0.03	-0.05	0.04	0.20
15 Hispanic, Normal BMI, Rural	0.02	0.01	0.01	0.03	-0.05	-0.08	-0.06	-0.03	0.03	-0.06	-0.05	0.38	-0.10	-0.06	-0.02	-0.03	-0.04		-0.02	-0.04	0.02	0.16
16 Hispanic, Large BMI, Rural	0.00	0.00	-0.01	0.00	-0.10	0.04	0.38	-0.05	0.02	-0.04	0.43	-0.06	-0.07	-0.04	0.06	-0.02	-0.03	-0.02		0.10	0.02	0.13
17 White, Large BMI, Rural	0.03	0.00	0.00	0.03	-0.18	0.56	-0.01	-0.08	0.47	-0.08	0.80	-0.11	-0.13	-0.07	0.04	-0.04	-0.05	-0.04	0.13		0.09	0.28
Min	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Max	4.00	4.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Mean	0.19	0.18	0.90	0.89	0.37	0.14	0.10	0.12	0.19	0.11	0.08	0.19	0.24	0.09	0.01	0.03	0.04	0.03	0.02	0.05		
SD	0.66	0.65	0.31	0.31	0.48	0.35	0.30	0.32	0.39	0.31	0.27	0.39	0.43	0.29	0.12	0.16	0.20	0.18	0.12	0.22		

Note: upper N = 4127, lower N = 4409, upper correlations represent male sample > 0.5 and lower correlations represent female sample > 0.039 are significant at the 0.001 level or better in two tailed tests.

In general, there were similarities in the variables that are significant for physical bullying practices among males and females. First, SES and illness/disability were significantly related to the frequency of physical bullying behaviors among male and female students. Additionally, all of the school variables and friend were significantly correlated with being physically bullied, as well as physically bullying others, for both gender subsamples. As such, students who have more female friends, spend more time with their friends, get along with their classmates, and engage in physical fights are more likely to physically bully others, regardless of gender. Conversely, students who have fewer female friends, do not spend a lot of time with their friends, but still get along with their classmates and engage in physical fights are more likely to be physically bullied. Interestingly, geographic location did not appear to be correlated with the frequency of physical bullying victimization and perpetration for either gender subsample. However, when geographic location is examined with the combination of race and weight, there are interesting significant correlations. Additionally, weight and race appear to be related to physical bullying practices on their own and in combination with other characteristics.

With regard to weight, race, and bullying practices, there are several noteworthy correlations. First, having a large BMI is significantly correlated with being physically bullied among females (r = -0.039), but not among males (r = -0.034). Additionally, female students who have a large BMI are likely to be physically bullied more frequently than female students with a healthy BMI (r = 0.04). In contrast, BMI appears to be related to the likelihood of physically bullying others among male students, such that boys are more likely to physically bully others if they have a healthy weight (r = 0.05). However, BMI is not significantly correlated to the likelihood of physically bully others if they have a healthy bullying others within
the female subsample. Second, while being a Hispanic male appears to be positively related to physically bullying others (r = -0.068), there is no relationship between being a Hispanic female and physically bullying others. However, there is a positive relationship between being an African American female and physically bullying others, such that African American females (r = -0.058) are less likely to bully others than White females and Hispanic females.

It should also be noted that when race, weight, and geographic location are combined into intersectional characteristics, there are additional differences in physical bullying victimization between males and females. First, with regard to physical bullying victimization, being a White female and having a healthy BMI is negatively correlated with being bullied, while being White and having a healthy BMI is not significantly correlated among males. Second, being an overweight African American female who lives in a suburban area is positively correlated with being physically bullied (r = 0.04). However, there is no significant relationship between being physically bullied and being an overweight African American male who lives in a suburban area.

With regard to physical bullying perpetration, being an overweight Hispanic student is positively related with physically bullying others within the male subsample (r = 0.05) but not the female subsample (r = 0.02). Additionally, being Hispanic and living in a suburban area is positively related with physically bullying others within the male subsample (r = 0.06) but not the female subsample (r = 0.02). On the other hand, being an African American with a healthy weight is positively related to physically bullying others for females (r = 0.05) but not for males (r = 0.03). Additionally, being an African American with a healthy BMI and living in a suburban location is positively correlated with physically bullying others for females (r = 0.05), but not for males (r = 0.03). Lastly, being White and living in a rural location is significantly, negatively related to physically bullying others for females (r = -0.04) but not for males (r = -0.02).

# Gendered Differences in Dichotomous Indicator of Physical Bullying Victimization

**Female Subsample.** Table 8a examines the final model of predictors for the likelihood of being physical bullied within the female subsample. The final model includes demographic variables, friend variables, school variables, personal attitude variables, and intersectional variables. Demographic variables are significant predictors for whether a student is physically bullied among the male and female subsamples. For females, age and SES are negatively associated with the likelihood of being physically bullied, while having a disability and/or illness is positively associated being physically bullied. Interestingly, none of the friend variables are significantly associated with being physically bullied for the female subsample. With regard to the school variables, all three variables are positively significantly associated with being physically bullied for the female students who believe that their classmates are not nice, get into physical fights, and physically bully others are more likely to be physically bullied.

# Table 4a

Girls				
Probability of Being Physical Bullied				
Variable	В	SE		
Intercept	1.35	0.94		
Demographics				
Age	-0.18	0.05	***	
SES	-0.15	0.06	*	
Disability	0.52	0.10	***	
Friend Variables				
Number of Female Friends	s -0.08	0.08		
Parents Accept Friends	-0.03	0.06		
Friends' Age	-0.03	0.11		
School Variables				
Classmates are Nice	-0.17	0.06	**	
Number of Fights	0.18	0.04	***	
Physically Bullying Others	s 0.62	0.06	***	
Personal Attitudes				
Feel About My Body	-0.10	0.06		
Feel About My Parents	-0.37	0.12	**	
Intersectional Variables				
Normal BMI, Rural	0.35	0.13	**	
White, Large BMI	0.46	0.14	**	
Black, Large BMI, Rural	-1.45	0.69	*	
Psuedo R <sup>2</sup>	0.1077			

# Probability of Being Physically Bullied within the Female Subsample

Note: N=4,409; \*\*\* p < .001; \*\* p < .01; \* p < .05

Concerning the personal attitude variables for females, only feelings toward my parents was negatively significantly associated with being physically bullied, with a significance level of 0.01. Feelings like 'my parents treat me like a baby,' 'my parents do not understand my problems,' and 'my parents are not loving' are indicative of having a negative relationship with their parents. As such, the result indicates that having this negative relationship toward their parents can predict the likelihood of being physically bullied for females.

Regarding the intersectional variables listed in the model for females, having a normal BMI and living in a rural location, as well as being White and having a large BMI

are positively associated with being physically bullied (p < 0.01 for both). On the other hand, being a Black female with a large BMI and living in a rural location is negatively associated with being physically bullied (p < 0.05).

**Male Subsample.** Table 8b shows the final model of predictors for the probability of being physical bullied within the male subsample. For males, age and disability are also significant predictors of being physically bullied, but SES is not.

# Table 4b

Probability of Being Physically Bullied within the Male Subsample

Boys					
Probability of Being Physical Bullied					
Variable	В	SE			
Intercept	2.66	0.76	***		
Demographics					
Age	-0.24	0.04	***		
SES	-0.01	0.05			
Disability	0.22	0.09	*		
Friend Variables					
Number of Female Friends	-0.14	0.04	**		
Parents Accept Friends	0.06	0.05			
Friends' Age	0.20	0.09	*		
School Variables					
Classmates are Nice	-0.38	0.05	***		
Number of Fights	0.12	0.03	***		
Physically Bullying Others	0.53	0.05	***		
Personal Attitudes					
Feel About My Body	-0.33	0.06	***		
Feel About My Parents	-0.36	0.11	***		
Intersectional Variables	Intersectional Variables				
White, Large BMI	0.36	0.11	**		
Hispanic, Large BMI	-0.28	0.14	*		
Psuedo R <sup>2</sup>	0.1219				

Note: N=4,127; \*\*\* p < .001; \*\* p < .01; \* p < .05

As for the friend variables, the number of female friends that a male respondent has is negatively significantly associated with being physically bullied, such that males with more female friends are less likely to be bullied, with a significance level of 0.01.

Friends' age is also a significant predictor for the male subsample, with a significance level of 0.05. Interestingly, none of the friend variables are significantly associated with being physically bullied for the female subsample. With regard to the school variables, all three variables are significantly associated with being physically bullied for both genders. Thus, perceiving classmates as not nice, engaging in physical fights, and physically bullying others are strong predictors of whether a male student is physically bullied.

Concerning the personal attitude variables, feelings about my body and feelings about my parents, both variables were strongly negatively associated with being physically bullied for the male subsample, with a significance value of 0.001. This result suggests that male students who have negative feelings toward parents and disliking their body are more likely to be bullied. However, it is possible that a boy dislikes his body due to being bullied and body-shamed.

Regarding the intersectional variables listed in Table 8b, being White and having a large BMI is positively associated with whether a student is physically bullied (p < 0.01). However, if the male student is Hispanic instead of White, and has a large BMI, then they are less likely to be physically bullied (p < 0.05).

## Gendered Differences in the Likelihood of Physical Bullying Perpetration

**Female Subsample.** Table 9a shows the final model for predicting the third dependent variable, dichotomous indicator of physically bullying others, within the female subsample. There are several significant variables, with a pseudo  $R^2$  of 0.149 for the female subsample. None of the demographics are significantly associated with whether a female respondent chooses to physically bullying others. However, there are several variables in the friend theme that are associated with the probability of physically

bullying others for females. First, friends' age is positively significant for the female subsample, with a significance of 0.05. This result indicates that female students who are friends with older individuals are more likely to physically bully others. Another friend variable, parents' acceptance of friends, was significant for the female subsample with a significance level of 0.01. Time spent with friends, another friend variable, was significant for the female subsample, such that girls who spend more time with their friends are more likely to physically bully others.

# Table 5a

Girls		
Probability of Physical Bullying	Perpetrat	ion
Variable	В	SE
Intercept	-2.63	0.90 **
Demographics		
Age	-0.10	0.05
SES	0.02	0.06
Disability	0.20	0.11
Friend Variables		
Friends Age	0.22	0.11 *
Parents Accept Friends	0.18	0.06 **
Time Spent with Friends	0.11	0.03 ***
School Variables		
School index	0.29	0.09 **
Classmates are Nice	0.02	0.07
Number of Fights	0.38	0.04 ***
Physically Bullied	0.67	0.06 ***
Personal Attitudes		
Feel About My Parents	-0.24	0.12
Intersectional Variables		
White, Rural	0.16	0.12 *
Black, Normal BMI, Suburban	-0.27	0.08 *
Psuedo R <sup>2</sup>	0.1488	

Probability of Physical Bullying Perpetration within the Female Subsample

Note: N=4,409; \*\*\* p < .001; \*\* p < .01; \* p < .05

In regard to the school variables, the following indicators were significantly associated with physical bullying perpetration for both the male and female subsamples:

school index, number of physical fights the respondent engaged in per year, and whether the respondent was physically bullied. The school index is a strong predictor of physical bullying perpetration among females. The significance levels for the other two school variables, number of fights and being physically bullied, was significant at the 0.001 level for females. As such, female students who have good relationships with their classmates and perceive their classmates as nice, but also engage in more physical fights are more likely to physically bully others. Lastly, although there the respondent's feelings toward their parents was examined, it was discovered that this variable was not a significant predictor of physical bullying perpetration for the female subsample.

There are also significant intersectional predictors of physical bullying perpetration. For females, being White and living in a rural location was positively associated with physical bullying perpetration, while being African American, having a normal BMI, and living in a suburban location was negatively associated with physically bullying others.

Male Subsample. Table 9b shows the final model of physical bullying perpetration for the male subsample. Similar to the demographic results within the female subsample, none of the demographics are significantly associated with whether a male respondent chooses to physically bullying others.

# Table 5b

y Age Accept Friends ent with Friends	B -3.78 0.02 0.05 0.05 0.30 0.07 0.13	SE 0.80 **** 0.05 0.10 0.09 **** 0.05 0.03 ***	
y Age Accept Friends ent with Friends	-3.78 0.02 0.05 0.05 0.30 0.07 0.13	0.80 **** 0.05 0.05 0.10 0.09 **** 0.05 0.03 ****	
y Age Accept Friends ent with Friends	0.02 0.05 0.05 0.30 0.07 0.13	0.05 0.05 0.10 0.09 **** 0.05 0.03 ***	
y Age Accept Friends ent with Friends	0.02 0.05 0.05 0.30 0.07 0.13	0.05 0.05 0.10 0.09 **** 0.05 0.03 ***	
y Age Accept Friends ent with Friends	0.05 0.05 0.30 0.07 0.13	0.05 0.10 0.09 *** 0.05 0.03 ***	
y Age Accept Friends ent with Friends	0.05 0.30 0.07 0.13	0.10 0.09 *** 0.05 0.03 ***	
Age Accept Friends ent with Friends	0.30 0.07 0.13	0.09 *** 0.05 0.03 ***	
Age Accept Friends ent with Friends adex	0.30 0.07 0.13	0.09 *** 0.05 0.03 ***	
Accept Friends ent with Friends	0.07 0.13	0.05 0.03 ***	
ent with Friends	0.13	0.03 ***	
dev			
dev			
IUCA	0.35	0.08 ***	
tes are Nice	-0.09	0.06	
Number of Fights		0.03 ***	
Physically Bullied 0.52			
es			
out My Parents	-0.41	0.11 ***	
riables			
, Suburban	0.66	0.14 ***	
arge BMI	0.99	0.28 ***	
1, Normal BMI	-0.32	0.12 **	
, Large BMI, Rural	-1.16	0.44 **	
arge BMI, Rural	-0.65	0.32 *	
<b>2</b> <sup>2</sup>	0.138		
	ut My Parents <b>iriables</b> , Suburban irge BMI , Normal BMI , Large BMI, Rural arge BMI, Rural	ut My Parents -0.41 <b>triables</b> .   , Suburban 0.66   trge BMI 0.99   u, Normal BMI -0.32   , Large BMI, Rural -1.16   arge BMI, Rural -0.65   22 0.138	

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#### Probability of Physical Bullying Perpetration within the Male Subsample

However, there are several variables in the friend theme that are associated with the likelihood of physically bullying others for males and females. First, friends' age is a strong positive predictor for males who physically bully others, such that individuals who have older friends are more likely to physically bully others, with a significance of 0.001. In fact, friends age has a stronger significance for males (p < 0.001) than females. (p < 0.01), which indicates that friends age is a stronger predictor for males than for females. While parents' acceptance of friends was not a significant predictor for the male subsample, time spent with friends was significant for both the female and male subsamples, such that those who spend more time with their friends are more likely to physically bully others.

With regard to the school variables, all three variables were significantly associated with physical bullying perpetration for males. Intriguingly, the school index is a stronger predictor for the male subsample than the female subsample, with significance levels of 0.001 and 0.01 respectively. The significance levels for the other two school variables, number of fights and being physically bullied, were both 0.001 for males and females. However, it is interesting to note that boys who believe that their classmates are not nice are more likely to engage in physical bullying perpetration, but girls are more likely to physically bully others if they have good relationships with their classmates and perceive them as nice.

It also appears that male students' feelings toward their parents is strongly associated with engagement in physical bullying perpetration, with a significance of 0.001. As such, if a male student has a negative relationship with their parents, then they are more likely to engage in physical bullying perpetration. While this will be discussed further in the next chapter, it is important to consider why negative relationships seems to impact physical bullying perpetration among males. It is possible that students who do not have strong ties or bonds with their parents are more likely to bully others, as having fewer social bonds increases deviance and delinquent behaviors (Hirschi, 1969).

Lastly, there were several significant intersectional predictors of physical bullying perpetration. It is interesting to note that there are more predictors for the probability of physical bullying perpetration within the male subsample than within the female subsample. Males, on the other hand, had several more significant intersectional variables. Hispanic males who live in a suburban area, as well as males who have a large BMI and live in a rural area are positively associated with physically bullying others (p < 0.001). Being a male with a normal BMI and living in a suburban area is negatively associated with physical bullying perpetration (p < 0.01). Additionally, being a Hispanic or White male with a large BMI and living in a rural location is associated with physical bullying perpetration (p < 0.01 and p < 0.05 respectively).

## Gendered Differences in Frequency of Physical Bullying Perpetration

Table 6a shows the final model for frequency of physical bullying perpetration among female respondents, and Table 6b shows the final model for frequency of physical bullying perpetration among male respondents. There are a few differences in predictors of physically bullying others for female and males. First, with regard to the demographic indicators, the only variable that is significantly associated with physically bullying others often within the female subsample is SES, which is significant at the 0.05 level. None of the demographic variables are significant predictors for males who physically bully others often.

# Table 6a

01113				
Frequency of Physical Bullying Perpetration				
Variable	В	SE		
Intercept	-0.17	0.16		
Demographics				
Age	0.00	0.01		
SES	0.03	0.01	*	
Disability	0.02	0.02		
Friend Variables				
Time Spent with Friends	0.02	0.01	***	
Parents Accept Friends	0.03	0.01	**	
Friends' Age	0.02	0.02		
School Variables				
School Index	0.04	0.02	*	
Classmates are Nice	-0.01	0.01		
Number of Fights	0.10	0.01	***	
Physically Bullied	0.25	0.01	***	
Personal Attitudes				
Feel About My Parents	-0.05	0.02	*	
Intersectional Variables				
Hispanic, Suburban	0.07	0.05		
White, Normal BMI	-0.05	0.02	*	
Black, Large BMI, Rural	0.15	0.08		
Hispanic. Normal BMI, Suburban	-0.06	0.06		
Adjusted R <sup>2</sup>	0.1384			

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# Frequency of Physical Bullying Perpetration within the Female Subsample

Note: N=4,409; \*\*\* p < .001; \*\* p < .01; \* p < .05

Concerning friend variables, all three variables were significant predictors of the frequency of physical bullying victimization for males, but only two variables were significant for females. Time spent with friends and parents' acceptance of friends were both significantly associated with individuals who physically bully others frequently, regardless of gender. However, parents' acceptance of friends was a stronger predictor of females who physically bully others often, with a significance level of 0.01. Also, while friends' age was not a significant predictor for females, it was significant for males who physically bully others often, with a significance level of 0.01.

## Table 6b

Boys		
Frequency of Physical Bullying Per	petration	
Variable	В	SE
Intercept	-0.37	0.19
Demographics		
Age	0.02	0.01
SES	0.01	0.01
Disability	0.03	0.02
Friend Variables		
Time Spent with Friends	0.03	0.01 ***
Parents Accept Friends	0.03	0.01 *
Friends' Age	0.07	0.02 **
School Variables		
School Index	0.05	0.02 **
Classmates are Nice	-0.02	0.01
Number of Fights	0.08	0.01 ***
Physically Bullied	0.22	0.01 ***
Personal Attitudes		
Feel About My Parents	-0.10	0.03 ***
Intersectional Variables		
Rural, Large BMI	0.33	0.08 ***
Urban, Large BMI	0.10	0.04 **
Black, Normal BMI	0.08	0.03 *
Hispanic, Large BMI, Rural	-0.30	0.10 **
White, Large BMI, Rural	-0.23	0.08 **
Hispanic, Suburban	0.23	0.05 ***
Hispanic. Normal BMI, Suburban	-0.15	0.06 *
Adjusted R <sup>2</sup>	0.1453	

# Frequency of Physical Bullying Perpetration within the Male Subsample

Note: N=4,127; \*\*\* p < .001; \*\* p < .01; \* p < .05

As for the school variables and attitude variables, all variables were statistically significant. That is, the school index, number of fights the respondent has per year, and whether the respondent is physical bullied are all significantly associated with the how often an individual physically bullies others, regardless of gender. Additionally, respondent's feelings toward their parents was a significant predictor of the frequency of physical bullying perpetration. Interestingly, the respondents' feelings toward their parents was a stronger predictor for males who physically bully others frequently than for females, with a significance level of 0.001 and 0.05 respectively.

Finally, there are more intersectional variables that are associated with males than females who physically bully others frequently. As mentioned previously, there may be more significant predictors for the male subsample because there was more variability in the frequency of physical bullying perpetration within the male subsample. As such, only the following variable was a significant predictor for the female subsample; being White and having a normal BMI, with a significance level of 0.05. In contrast, among the male subsample, having a large BMI and living in a rural location is positively associated with males who physically bully others frequently, as well as having a large BMI and living in an urban location. Additionally, when accounting for race in relation to weight and rurality, it is discovered that being African American and having a normal BMI is associated with how often a boy physically bullies others, with a significance at the 0.05 level. However, White and Hispanic males with large BMIs that live in rural locations are less likely to physically bully others often. It is interesting to note that, without taking BMI into consideration, Hispanic males who live in suburban locations are also strong predictors for physically bullying others frequently, with a significance level of 0.001. But Hispanic males who have a normal BMI and live in suburban areas are also associated with physically bullying others frequently, although the significance level is lower for this indicator (p < 0.05).

## Gendered Differences in Frequency of Physical Bullying Victimization

Lastly, Table 7 consists of the final models for physical bullying victimization frequency rates among males and females. With regard to demographics, age is a significant predictor for both genders, with a significance level of 0.001 and 0.001 respectively. This result indicates that younger students are more likely to be physically bullied often. Additionally, having an illness/disability is a significant predictor of physical bullying victimization frequency, such that girls with a disability or illness are likely to be physically bullied often.

# Table 7

Frequency of Physical Bullying Victimization within the Male and Female Subsample

Girls			Boys		
Frequency of Being Physically	Bullied		Frequency of Being Physically Bullied		
Variable	В	SE	Variable	В	SE
Intercept	0.86	0.18 ***	Intercept	1.30	0.21 ***
Demographics			Demographics		
Age	-0.03	0.01 ***	Age	-0.06	0.01 ***
SES	-0.02	0.01	SES	0.00	0.01
Disability	0.08	0.02 ***	Disability	0.07	0.02 **
Friend Variables			Friend Variables		
Number of Female Friends	-0.02	0.02	Number of Female Friends	-0.05	0.01 ***
Parents Accept Friends	0.01	0.01	Parents Accept Friends	0.03	0.01 *
Friends' Age	-0.04	0.02	Friends' Age	0.05	0.03 *
School Variables			School Variables		
Classmates are Nice	-0.04	0.01 ***	Classmates are Nice	-0.14	0.02 ***
Number of Fights	0.04	0.01 ***	Number of Fights	0.04	0.01 ***
Physically Bullying Others	0.27	0.01 ***	Physically Bullying Others	0.27	0.02 ***
Personal Attitudes			Personal Attitudes		
Feel About My Body	-0.03	0.01 *	Feel About My Body	-0.10	0.02 ***
Feel About My Parents	-0.08	0.02 ***	Feel About My Parents	-0.09	0.03 **
Intersectional Variables			Intersectional Variables		
White, Rural	0.04	0.02	White, Rural	0.04	0.03
White, Large BMI	0.07	0.03 *	White, Large BMI	0.07	0.03 *
Large BMI, Urban	-0.05	0.03	Large BMI, Urban	-0.10	0.04 *
Black, Large BMI, Suburban	0.13	0.06 *	Hispanic, Suburban	-0.08	0.04 *
Adjusted R <sup>2</sup>	0.1176		Adjusted R <sup>2</sup>	0.152	
Note: $N = 4400$ ; *** $n < 0.01$ ; ** $n < 0.1$	* n < 05		Note: N=4127; *** $n < 0.01;$ ** $n < 0.01$	1. * - < 05	

Note: N=4409; \*\*\* p < .001; \*\* p < .01; \* p < .05

Note: N=4127; \*\*\* p < .001; \*\* p < .01; \* p < .05

Interestingly, while none of the friend variables are significant predictors of being physically bullied frequently among girls, all three friend variables are significant predictors for boys. As such, it is possible that the quantity of friends and time spent with friends are only significant predictors of the frequency of physical bullying victimization among males. Male students who have fewer female friends, have friends that are not the same age as them, and have parents that are accepting of their friends are more likely to be physically bullied frequently.

With regard to school variables and attitude variables, all model variables are significant. As such, all of the school variables (i.e., classmates are nice, number of physical fights, and physically bullying others), proved to be associated with being physically bullied frequently for girls and boys, with a significance level of 0.001. However, while number of fights and physically bullying others are positive predictors, it appears that perceiving classmates as nice is a negative predictor for how often a student is physically bullied. As such, students are more likely to be physically bullied frequently if they who have negative relationships with their classmates but engage in physical fights and physically bully others. Concerning personal attitudes, feelings about my body are negatively associated with being physically bullied frequently for both genders, with a significance level of 0.05 for girls and a significance level of 0.001 for boys.

Lastly, there are several differences in significant intersectional predictors for frequency of physical bullying victimization within the subsamples. First, being White and living in a rural area does not appear to be a significant predictor for being physically bullied frequently for boys and girls. However, being White and having a large BMI appear to both be significantly associated with being physically bullied frequently among males and females. Although having a large BMI and living in an urban area is not a significant predictor for being physically bullied frequently among females, it is a slightly significant predictor for males, with a significance level of 0.05. Lastly, it appears that being black, having a large BMI, and living in a suburban area is positively associated with being physically bullied more often among females, while being Hispanic and living in a suburban area is negatively associated with being physically bullied more often among males.

#### **Chapter 5: Discussion**

The purpose of this research was to analyze how physical bullying behaviors can be affected by body characteristics (e.g., race, gender, weight, and the intersectionality of these social identities), rurality, and social capital. Grounded in the literature, I asked the following research questions: (1) What is the likelihood of girls and boys using physical violence as a means for bullying? (2) Are girls in rural areas more likely to resort to physical bullying practices? (3) To what extent does social class, weight, race, geographic location, and social capital impact a girl's tendency to be physically bullied? (4) To what extent does social class, weight, race, geographic location, and social capital impact a girl's tendency to physically bully others? (5) Are there differences between the predictors for girls' and boys' use of physical violence as a way of being physically bullied? (6) Are there differences between the predictors for girls' and boys' who physically bully others? Data were retrieved from the HBSC (2009-2010) survey. Descriptive statistics, correlation matrices, and regressions were completed and analyzed. In this chapter I interpret the results and provide answers for these research questions.

## Likelihood of Engaging in Physical Bullying Practices

The first research question asks if there are differences in the probability of girls and boys engaging in physical bullying behaviors. Previous research estimated that 12.8% to 27.8% of students reported experiencing physical bullying (Kowalski & Limber, 2007; Robers et al., 2014; Stubbs-Richardson et al., 2018; Wang et al., 2009). The data from the current study supports this notion, as 13.7% of students in the sample had reportedly been physically bullied. Additionally, 12.4% of students had reported that they physically bullied others. However, the probability of engaging in physical bullying practices changes based on the gender of the student, where the student lives, and the race of the student. As suggested in the literature review, girls are less likely to engage in physical bullying (Carrera-Fernandez et al., 2013; Iossi Silva et al., 2013; Jeffrey, Miller & Linn, 2001; Stubbs-Richardson et al., 2018). The data supports this fact and goes a step further by providing information regarding rates of physical bullying; 10.5% of females reported physically bullying others and 10.5% reported being physically bullied. Boys, on the other hand, are more likely to engage in physical bullying behaviors; 14.5% of males reported physically bullying others and 17% reported being physically bullied. As such, boys are more likely to be bullied physically and to physically bully others than girls. This result not only reaffirms what is already reported in previous literature, but it also provides information on the differing probability of physical bullying victimization among boys and girls. It is interestingly that boys are more likely than girls to be physically bullied.

One explanation for the differences in the likelihood of engaging in physical bullying behaviors is the status hierarchy within the schools, as well as the normative performances of masculinity and femininity. To further explain, in the United States, a majority of males have more power and dominance than females, so they are not perceived as vulnerable (Evans & Smokowski, 2016). However, some men of color and men who are perceived as feminine might appear to be very vulnerable as well. However, for the most part, White and African American men are perceived as dominant and powerful. Additionally, boys and girls are expected to behave in differing ways, such that girls are sweet, quiet, and friendly. Boys, on the other hand, are allowed to use violence and aggression, since it is seen as a normative performance of young masculinity (Ringrose & Renold, 2009). However, it is generally only acceptable for boys to perform violent behavior towards other boys. As such, if a boy decides to physically bully a girl, then he would be transgressing the normative performance of masculinity (Ringrose & Renold, 2016).

With regard to geographic location, prior research has not reached a consensus on where bullying occurs most. Some research suggests that the prevalence rate for being bullied is higher in rural locations while others suggest that there is no difference between rural and urban areas. The findings from the current study supports the claim that the probability of being physically bullied does not significantly differ based on geographic location. Although there are differences in the likelihood of engaging in physical bullying practices in various geographic locations, these differences are not significant (Table 2a). The likelihood of being physically bullied is highest in suburban areas (5%), followed by rural (4%) and urban areas (4%).

One potential explanation for the discrepancy in this study's results and that of the previous literature (Stockdale et al., 2002) is the conceptualization and operationalization of bullying. In the current study, physical bullying was defined as a situation where a student was hit, kicked, pushed, shoved around, or locked indoors. However, Stockdale et al. (2002) conceptualized physical bullying as an occurrence where a student was pushed around. Moreover, the timeframes of bullying differed between these studies. For instance, Stockdale et al. (2002) discovered that 66% of the students in rural locations were physically bullied at least once a week, while this study asks whether students have been physically bullied in the past 60 days. Also, Stockdale et al.'s (2002) study includes

schools in rural Indiana, while the current study focuses on schools within rural locations across the United States. Additionally, Stockdale and I used different data sets. My data set is newer than Stockdale's, which might provide a better picture of physical bullying in recent years. Lastly, age may have played a factor in the differences in results, as Stockdale et al. (2002) examined physical bullying among 4<sup>th</sup>, 5<sup>th</sup>, and 6<sup>th</sup> grade students. I, on the other hand, examined physical bullying among students in the 7<sup>th</sup>, 8<sup>th</sup>, and 9<sup>th</sup> grade. More studies would have to be done to see if there are higher percentages of bullying within rural schools in Indiana, as well as among students of a younger age/grade level.

As for racial disparities, the data found that the probability of being physically bullied is not significantly related to being an African American student or a Hispanic student. Despite not being significant, it is worth noting that Hispanic individuals (4%) are more likely to be physically bullied than African American individuals (3%). Interestingly, the data show that there is a higher chance of being physically bullied for white boys than boys who belong in non-white racial categories. In fact, being a white boy is a significant predictor of being physically bullied (Appendix). One plausible reason for the racial differences in physical bullying victimization is type of bullying behaviors. It is possible that, although white boys are more likely to be physically bullied, boys of color might be more likely to be verbally bullied because of their race (Boulton, 1995; Mooney, Creeser, & Blatchfor, 1991; Wang, Wang, Zheng, & Atwal, 2016).

The data also show that White boys are less likely to physically bully others than boys in different racial categories, while African American and Hispanic boys are more likely than White boys to physically bully others. Moreover, the regression results suggest that being a Hispanic boy is a significant predictor for physically bullying others. One possible reason that White boys are less likely to engage in physical bullying perpetration than African American and Hispanic boys is the racial diversity within schools and self-fulfilling prophecy. Several previous studies that examine bullying in the school have found that schools with more racial diversity have higher prevalence rates of bullying (Durkin et al., 2012; Schumann, Craig, & Rosu, 2013). This is because race is a very important and common identifier that is used to determine and form friendships (Aboud, Mendelson, & Purdy, 2003). As such, students that attend highly diverse schools may feel threatened by students of other races, identify themselves more strongly with their in-group peers, and behave more negatively and aggressively toward out-group members (Tajfel, 1978; Tajfel & Turner, 1979; Vitoroullis & Valliancourt, 2015). Additionally, stereotypes regarding African Americans are that they are dangerous and aggressive. As such, the perception of African Americans as more aggressive may create the self-fulfilling prophecy, such that individuals who buy into the stereotype act in ways to elicit aggressive behaviors from African Americans (Rist, 1970; Zimmerman, Khoury, Vega, Gil, & Warheit, 1995).

#### Are girls in rural areas more likely to resort to physical bullying practices?

The second research question asks whether the effect of being a certain gender and living in a certain geographic location would change the probability of engaging in physical bullying behaviors. The results from the data suggest that geographic location is not significantly related to whether a girl engages in physical bullying practices. Although non-significant in nature, there was a higher percentage of girls being physically bullied in suburban areas (4%), followed by rural (3%) and urban areas (3%). Also, although non-significant, there was a higher percentage of girls that physically bully others in suburban areas (4.2%), followed by urban (3%) and rural areas (2%).

Physical bullying was also not significantly correlated with geographic location for boys. Despite not being significant, it is interesting to note that boys were more likely to be physically bullied, as well as physically bullying others, in suburban areas (7% and 6% respectively), followed by urban (5% and 4% respectively) and rural areas (5% and 4% respectively).

Also, although non-significant, it is important to examine the directionality of the non-significant correlations between living in a certain geographic location and being physically bullied. In line with the percentages discussed above, it is discovered that being physically bullied is negatively correlated with living in rural areas for boys and girls. However, being physically bullied is positively correlated with living in an urban or a suburban area for boys and girls. This suggests that, although non-significant, students are less likely to be physically bullied if they live in a rural area, while students are more likely to be physically bullied if they live in an urban or suburban area.

Again, while these findings are non-significant, it does indicate that there may be instances of more physical bullying in urban and suburban areas. There are several possible explanations for this occurrence, such as community context, in-group/out-group phenomena, and racial diversity. Urban areas often have large schools that serve a large number of students. It is also expected that urban schools have more racial diversity than schools in rural location.

The data of this study supports this notion, as there is a disproportionate number of White individuals living in rural locations. Additionally, according to the data, urban areas are more racially diverse, with African Americans making up 21% of the urban population, Whites making up 32% of the urban population, and Hispanics making up 15% of the urban population. Suburban areas are also somewhat racially diverse, with White individuals making up 47% of the population, African Americans making up 16% of the population, and Hispanics making up 20% of the population. Rural areas, on the other hand, are populated mostly by White individuals (60%), followed by African American individuals (14%), and Hispanic individuals (3%). As such, it is possible that the more racially diverse urban and suburban areas are more likely to experience a stronger in-group/out-group phenomenon. Thus, people living in urban and suburban areas have stronger in-group ties with others of the same race and may engage in more violent behavior toward individuals who belong to the out-group. Also, it is well known that urban areas are more likely to be socially disorganized, have higher concentrations of poverty, and more gang affiliations. Thus, this higher rate of poverty and violence may be correlated to the increase in physical bullying perpetration within urban and suburban areas.

# Effects of Social Class, Social Capital, Weight, Race, and Geographic Location on Female Physical Bullying Victimization

The third research question was proposed in order to examine the effects of social class, weight, race, geographic location, and social capital on the frequency and probability of a student being physically bullied. As mentioned previously, geographic location by itself does not appear to have a significant effect on the likelihood of engaging in physical bullying behaviors among the full sample or the gendered subsamples. However, when controlling for gender, weight, race, geographic location,

social class, and social capital, as well as other characteristics, a more detailed picture emerges of their effects on the probability of physical bullying victimization. After controlling for the other variables, it appears that weight, geographic location, and race by themselves do not have an effect on whether a female student is physically bullied. However, social class and social capital seem to have a negative effect on physical bullying victimization, such that girls who perceives themselves as lower class and have fewer female friends are more likely to be physically bullied. This supports the notion that victims of bullying are isolated from others and often do not have many close friendships. This result supports prior studies, which indicate that victims of bullying are more socially isolated, have less social capital, and hold a lower position within the school network (Barboza et al., 2009; Cook et al., 2010; Duffy et al., 2017; Goldbach et al., 2018; Lodder et al., 2016; Sentse et al., 2014; Sterzing et al., 2014; Veenstra et al., 2005). Additionally, according to Social Dominance Theory, one would expect that the individuals with very little power and connections to classmates to be easier targets of bullying.

Still, as previous research shows, it is important to examine the interaction between gender and these other characteristics (Kahle & Peguero, 2017). Interestingly, when combined, the effects of weight, race, and geographic location appear to change the probability of physical bullying victimization among girls. For White girls who are at risk of being overweight or are overweight, the likelihood of physical bullying victimization increases. However, for African American girls who are at risk of being overweight or are overweight and live in a rural area, the probability of physical bullying victimization decreases. This suggests that White girls who are overweight are more likely to be physically bullied than African American girls who are overweight and live in rural areas.

The differences seen among overweight White girls and African American girls in a rural location could mean several things. First, the differences could be due to the fact that African Americans do not internalize the overweight stigmatization as much as White individuals (Himmelstein, Puhl, & Quinn, 2017). As such, it may be normalized within African American culture to be accepting of other African Americans with a large BMI. However, the dominant culture within the United States, especially toward White girls, is to be as skinny as possible. As such, White girls who are overweight often internalize the stigma that comes with being overweight. As such, White girls are violating the normative culture for White females (Himmelstein, Puhl, & Quinn, 2017). There is another possible explanation for why African American overweight girls in rural settings are bullied less, which is that being overweight in rural areas is acceptable. As previous literature explains, individuals in rural areas are more likely to be obese because of the limited grocery stores and the lengthy distance from one store to another (Kegler, Prakash, Hermstad, Anderson, Haardofer, & Raskind, 2020). Additionally, African Americans that live in rural locations are disproportionately located within the southern states. It is well known that southern rural areas are centralized around southern homestyle cooking. The southern rural style of cooking revolves around high calorie, high fat drinks and foods, such as fried chicken and sweet tea. Thus, not only can it be more difficult to find healthy food because of the limited stores in rural areas, but the culture in southern rural areas highlights the importance of southern homestyle cooking.

As such, individuals living in southern rural areas are more likely to be overweight than individuals living in urban areas.

The data also indicates that a girl, regardless of her race, who lives in a rural location and has a healthy weight is more likely to be physically bullied than a girl who lives in a rural location and is overweight. This further supports the notion that it is common and socially acceptable for individuals in rural location to be overweight. It is also possible that girls who have a healthy weight and live in a rural location are among the minority group, so they are easier to bully. This is in line with Ringrose and Renold's (2009) study, which suggests that those who violate a normative behavior and appearance are more likely to be bullied. Additionally, it is possible that, since there are fewer girls that have a normal weight in rural areas, girls who have a normal BMI are outcast and rejected by their peers. As such, girls with a normal BMI are considered to be a part of the out-group by the majority of students. In accordance with the Social Dominance Theory, girls living in rural areas and have a healthy weight would have less social capital, social position, and power than girls who are overweight. As such, girls who have a healthy weight are easier targets of victimization.

With regard to the frequency of bullying victimization, weight, race, geographic location, SES, and social capital do not increase the frequency of being physically bullied for girls. However, once the interaction between weight, race, and geographic location is examined, the frequency rate of bullying victimization changes. White girls who are overweight or at risk of being overweight are physically bullied more than girls who have a healthy weight (Table 8). This also supports the idea that White girls are subjected to standards of being skinny that girls of different racial backgrounds do not have to go through.

However, the data also indicates that African American girls who live in a suburban area and have a large BMI are physically bullied more than girls with a healthy weight (Table 8). Although previous literature suggests that African American girls are not stigmatized as much for being overweight, it could be possible that the multiplicative effect of being overweight, African American, female, and living in a suburban area causes this change in the frequency of an African American girl being physically bullied. Effects of Social Class, Social Capital, Race, Weight, Geographic Location on Female Physical Bullying Perpetration

The fourth research question in this study asks whether the intersectionality of an individual's race, weight, and gender, as well as geographic location, have an effect on the frequency and likelihood of physically bullying others. Additionally, this research question asks whether social capital affects physical bullying perpetration rates.

Within the female subsample, social capital appears to influence the probability physical bullying perpetration. Girls who have friends that are older than them, have parents that accept their friends, and spend more time with their friends throughout the week are more likely to physically bully others. This supports results from prior studies on the social hierarchy of bullying, which suggests that students with higher social capital have more power and are more likely to bully others (Evans & Smokowski, 2016; Forsberg & Thornberg, 2016; Williford et al., 2011). Additionally, prior studies have indicated that older individuals are more likely to bully younger individuals, as the older individual has more power and status. As such, by associating with older students, a

female student is likely to receive more power, status, and dominance by association. It is also important to note that race, social class, weight, and geographic location do not appear to influence bullying perpetration.

However, among the girls that do physically bully others, social class, social capital, race, and weight appear to have an effect on how often they bully others. First, girls who have a higher SES are more likely to physically bully others more often. Second, with regard to social capital, girls who spend more time with their friends and have parents that are accepting of their friends are also more likely to physically bully others more frequently. The aforementioned result was expected, as individuals with more money and friends have more power and social dominance than those who have lower SES and fewer friends Also, girls who are overweight are likely to physically bully others more frequently. However, with regard to race, it is interesting to note that White girls physically bully others less frequently than Hispanic and African American girls (Appendix). One explanation for this would be that, for minority students, there could be a potential moderating effect of attachment to the school, use of violence, urbanicity, and affiliation with other delinquent students on whether they physically bully others (Peguero, 2012). Several studies have suggested that minority groups tend to go to schools with increased levels of violence and belong to communities that have higher levels of violence (Brunson & Miller, 2009; Gottfredson, 2001; Kozol 2005; Mateu-Gelabert & Lune, 2007; Peguero, 2011; Peguero, 2012). Additionally, as mentioned previously, the majority of White respondents were located in rural locations. As such, this result may not be indicative of a racial difference, but rather a geographic difference in the frequency of physical bullying perpetration.

It is also important to note that there are differences in the probability and frequency rates of bullying perpetration based on the combined effects of weight, class, geographic location, race, and social capital. First, girls are more likely to physically bully others if they are White and live in a rural location. While this result may seem strange to some, it actually supports the notion that rural communities are not completely idyllic safe havens from violence and bullying. Second, girls are less likely to physically bully others if they are African American, have a healthy BMI, and live in a suburban area. Third, with regard to the frequency of bullying perpetration, the data show that the combined effect of being a White girl and having a healthy BMI decreases the frequency of physical bullying perpetration, such that a White girl with a healthy BMI is less likely to physically bully others often than White girls who are overweight. These results indicate that "racial and ethnic minorities can disrupt imposed social and cultural stereotypes, therefore increasing experiences of harassment and bullying at school" (Kahle & Peguero, 2017, p. 340). As such, the combination of being a certain race, gender, weight, and living in a geographic location has multiplicative effects on the likelihood of a student physically bullying others.

#### **Gendered Differences in Predictors of Student Physical Bullying Perpetration**

The fifth research question was asked in order to discover potential gendered differences in physical bullying victimization. This study finds that the predictors that are significant for boys who physically bully others are not the same as the predictors for girls. First, with regard to social capital, friends' age is a stronger predictor for boys who physically bully others than for girls who physically bully others. Boys who have friends that are older than them are more likely to physically bully others. One plausible explanation for this phenomenon is that older students have a higher status, more dominance and power. As such, a younger student will receive more power and dominance if he or she affiliates with students who are older than them.

Another interesting difference between boys and girls is that boys who have negative feelings toward their parents are more likely to physically bully others than boys who have positive feelings and relationships with their parents. Social control theory would support this concept, suggesting that students with low attachment to parents may be more likely to violate norms and rules. Interestingly enough, a girl's feelings toward her parent does not appear to significantly influence the likelihood of physical bullying perpetration. This result could indicate that the social bonds a girl has with her parents are not an important predictor of bullying behaviors. As such, there may be other ties that prevent a female student from bullying others, such as attachment to peers or school, commitment to getting good grades and conforming to norms, and involvement in socially accepted activities.

There are also several intersectional differences among weight, race, and geographic location for Hispanic boys and girls who physically bully others. Unlike the female subsample, Hispanic boys who live in suburban areas are more likely to physically bully others. However, once we examine weight and geographic location, we see that Hispanic boys who are overweight or at risk of being overweight and live in a suburban area are more likely to physically bully others frequently than Hispanic boys who have a healthy weight. Once again, this supports the notion that individuals who are overweight are more likely to engage in physical bullying perpetration because they have more power and dominance than individuals who have a normal BMI. Second, boys who are overweight or at risk of being overweight and live in a rural location are more likely to physically bully others than boys who have a healthy weight and live in a rural area. Additionally, boys who are overweight or at risk of being overweight and live in a rural location or an urban location are likely to physically bully others more frequently than boys who have a healthy weight and live in a rural or urban location. This supports the notion that obese boys are likely to be bullies because of their physical dominance (Griffiths et al., 2005). However, Hispanic and White boys who are overweight and live in a rural location are actually less likely to physically bully others. This suggests that, although being overweight in a rural location can be a predictor for physical bullying among boys, ethnic and racial identity can disrupt and negate the likelihood of physically bullying others.

Lastly, it was found that an African American boy with a large BMI is likely to physically bully others more frequently than an African American boy with a healthy BMI. This also aligns with the results of previous studies, which suggest that overweight boys are more likely to be bullies because of their physical dominance (Griffiths et al., 2005).

#### Gendered Differences in Predictors of Student Physical Bullying Victimization

The final research question asks whether there are gendered differences in physical bullying perpetration. The data in this study shows that the predictors of the probability and frequency rates of being physically bullied differs based on whether the student is a boy or a girl. Within the male subsample, boys were more likely to be physically bullied if they had fewer female friends and if they had friends the same age as them than boys who had higher social capital and friends that are older than themselves. Additionally, while race did not appear to impact bullying victimization among girls, the data shows that White boys were more likely to be physically bullied than Hispanic and African American boys (Appendix). Moreover, although girls with lower SES are more likely to be physically bullied, SES does not impact the chances of a boy being physically bullied.

When examining the interaction between race and weight, it is discovered that White boys who are overweight or at risk of being overweight are more likely to be physically bullied than White boys who have a healthy weight. Also, unlike the female subsample, being an overweight or at risk of being overweight Hispanic boy reduces the likelihood of being physically bullied (Table 8). These results regarding overweight youth differs from prior research, which indicates that all boys are more likely to be physically bullied if they are overweight (Farhat et al., 2010; Griffiths et al., 2006). As such, the results from the current study suggest that racial and ethnic identity matters and can affect boys' experience of being physically bullied at school. As such, it is possible that the cultural and social expectations of being thin and fit do not translate to Hispanic boys. In fact, prior research has indicated that Hispanic children are disproportionately overweight. Moreover, research has indicated that the obesity in Hispanic children could be related to low SES or family beliefs and practices (Garcia et al., 2019). Therefore, Hispanic boys who are obese may be less likely to be bullied than White boys because it is generally acceptable and normative for Hispanic individuals to be overweight.

Regarding the frequency of bullying victimization among boys that are physically bullied, the data shows that White boys are physically bullied more often than Hispanic boys and African American boys (Appendix). Additionally, boys that have fewer female friends, have parents that are accepting of their friends, and have friends around the same age as they are likely to be physically bullied more frequently. This differs from the female subsample, as race and social capital did not impact the frequency of being physically bullied. Hispanic boys that live in suburban areas are likely to be physically bullied less than African American boys or White boys in suburban areas. Lastly, regardless of race, boys that are overweight or at risk of being overweight and live in an urban area are likely to be physically bullied more frequently. This is consistent with prior trends regarding boys who are overweight. In particular, some studies have indicated that younger overweight boys are more likely to be victims of bullying, as being overweight deviates from appearance ideals (Farhat et al., 2010; Griffiths et al., 2005).

The differing predictors among boys and girls also suggests that physical bullying is gendered, such that there are different predictors for boys and girls of various races, weight, and geographic location. As previous literature suggests, bullying is a gendered phenomenon, such that boys are more likely to physically bully others while girls are more likely to use social and relational forms of bullying (Carrera-Fernandez et al., 2013; lossi Silva et al., 2013; Jeffrey, Miller, & Linn, 2001; Kahle & Peguero, 2017; Ringrose & Renold, 2009; Sterzing et al., 2014; Stubbs-Richardson et al., 2018). The data from the current study adds another layer to understanding gendered bullying, by showing that there are different predictors for boys and girls who physically bully others and are physically bullied.

In summary, the results from the current study have provided several interesting and noteworthy implications. Concerning the likelihood of physical bullying, this study confirms prior studies which indicate that physical bullying perpetration is higher for boys than for girls. The study builds on to prior research by examining the frequency of physical bullying among both boys and girls. The results from the study indicate that several of the predictors for physical bullying perpetration and victimization among boys are the same predictors among girls. With regard to the demographic variables, SES and disability/illness were significant predictors for both boys and girls. Social capital, attachment to school, and engagement in bullying behaviors and physical fights also appear to be significant predictors of physical bullying perpetration and victimization for both boys and girls. However, there are a few differences in intersectional predictors for boys and girls. As such, the combined effects of race, weight, and rurality impact physical bullying for girls and boys differently.

#### **Chapter 6: Conclusion**

While prior studies have noted that there are gendered differences in bullying practices, no previous study had examined how certain physical characteristics, social identities, and social capital can influence girls' use of physical violence as a form of bullying. While girls are less likely to engage in physical bullying practices than boys, there are instances in which girls do. As such, this exploratory research was carried out to examine what factors might affect physical bullying behaviors among boys and girls. For instance, this research examined whether race, weight, social capital, and geographic location could affect physical bullying perpetration and victimization among both genders. Additionally, this research was carried out to determine what, if any, gendered differences there are in physical bullying practices.

For the most part, social capital, perceptions of school, and prior engagement in fights and bullying practices can be used to predict the likelihood and frequency of physical bullying perpetration and victimization. With regard to social capital, the results indicate that students who have a large number of female friends are more likely to engage in physical bullying perpetration. Also, students who have friends that are older than themselves and spend more time with their peers are more likely to bully others frequently. However, students who have close friends that are the same age as them, do not spend a lot of time with their peers, and have fewer female friends are more likely to be physically bullied because they have low social capital. Additionally, students who have negative perceptions of their school and classmates but engage in physical fights and bullying practices are more likely to be physically bullied by others. On the other hand, those who have positive perceptions of their school and classmates, engage in physical fights, and have been physically bullied are more likely to physically bully others and to bully others frequently.

This research emphasizes the importance of examining physical bullying practices through an intersectional lens. That is, instead of examining just race by itself, it is important to examine race in combination with geographic location, gender, and weight. With regard to the intersectional variables, the results varied. For the most part, the explained variance within the regression models were higher for the male subsample than the female subsample. Additionally, there were more intersectional variables that significantly predicted physical bullying practices for males than for females. It should be noted that the effect of race, weight, and geographic location by themselves was fairly small or even insignificant in some cases. However, when the combined effect of gender, weight, race, and geographic location are examined, there are several significant results that appear within the data. As such, future research should consider examining these variables in conjunction with one another, as living in a certain geographic location and being a certain race, gender, and weight can affect the likelihood and frequency of physical bullying practices. Also, it would be interesting to examine these intersectional variables in relation to other forms of bullying, such as verbal bullying and cyberbullying.

This research also emphasizes the importance of taking gender into account, since instances of physical bullying among females has been long understudied. As stated in the literature review, studies have revealed that bullying is a gendered phenomenon. Scholars have found that there are gendered differences in bullying perpetration, bully
victimization, choice in victims, and victim responses to bullying. Additionally, one prior study has examined bullying practices as transgressions of normative performances. The current research expands on previous literature by noting the types of gendered differences in physical bullying perpetration and victimization. This study also builds upon prior studies by examining transgressions of normative performances as a potential cause of physical bullying victimization among both genders.

This study examined physical bullying through the Social Dominance and Socioecological theoretical lens. According to Social Dominance Theory, individuals who have more power and dominance are more likely to perpetrate bullying practices. Prior studies have found that there are hierarchies are based on gender (e.g., boys have more power than girls), age (e.g., older individuals have more power than younger individuals), and an arbitrary-set system (e.g., socially significant groups such as ethnicity or social class that create hierarchies). The results from this study confirm the notion that power is an important aspect of bullying. As such, students who are overweight, male, older, are friends with older students, and have larger social capital are more likely to be bullies than students who have a healthy weight, female, younger, are friends with students who are the same age as them and have low social capital. The current research also suggests that power hierarchies are more complex, as the results suggest that concentrations of poverty, racial diversity within communities, and culture within communities may impact power relations and differentials. The second theoretical lens used in this study, socioecological theory, examines how social capital and social position can influence power relations and bullying practices. Previous research had revealed that students who are more popular are more likely to be bullies, while individuals who have less social capital

are more likely to be victims (Barboza et al., 2009; Duffy et al., 2017; Lodder et al., 2016; Sentse et al., 2014). The current research supports the socio-ecological theory, as social capital is a significant predictor of physical bullying practices within this study. However, results also show distinctions between race and geographic location, which allude to the possibility of differences in cultural expectations of weight and gender, which may moderate the relationship between social capital and physical bullying perpetration and victimization.

Additionally, while this study focuses on social dominance theory and socioecological theory, it may be fruitful to also examine physical bullying practices using participant role theory. As mentioned in the literature review, participant role theory posits that there are several roles that students play: the bully, the assistant of the bully, the reinforcer of the bully, the victim, the bully-victim, the onlooker/bystander, and the defender of the victim (Levy et al., 2012; Salmivalli et al., 1996). While this study examines demographics and behaviors of bullies and victims, it does not examine how race, geographic location, weight, and gender can impact the likelihood of students participating in another role. As such, it would be beneficial for future research to examine this study's model variables in relation to bully-victims, bystanders, assistants, reinforcers, and defenders.

Finally, given that the particular focus of this study is physical bullying among male and female students, I was able to establish a precise representation of physical bullying practices within both genders. However, the findings in this study cannot be automatically generalized to all other forms of bullying. As such, it would be advantageous for future researchers to continue to investigate these model variables in relation to other forms of bullying perpetration and victimization, such as verbal bullying and cyberbullying.

#### Limitations and Considerations for Future Research

My research contributes to literature on physical bullying by providing an updated exploratory analysis of physical bullying among boys and girls, with an emphasis on an intersectional perspective. Although the findings of this study are significant, there are a few limitations that should be acknowledged, and could be addressed in future research.

First, the findings of this study are limited due to the timeframe that the survey was conducted. This research used data from a 2009-2010 nationally representative survey. In the future, it would be important to update the survey and measures, as well as gather more current data from students attending school today.

Additionally, this research indicates that, although non-significant in nature, there are differences in bullying practices within urban, suburban, and rural areas. Though, when geographic location is examined with the combination of gender, weight, and race, there are differences of physical bullying practices found between suburban, rural, and urban locations. This result contributes to prior research, because it states that suburban areas, which have been long understudied within the literature on bullying, can be significantly different from rural and urban areas. Although this research does address some physical bullying practices within suburban areas, it is limited in its generalizability. As such, it would be beneficial for future research to examine bullying practices within suburban areas in-depth.

Third, although this study examines social class and SES briefly, it may be beneficial to explore the effect of social class further. In this study, subjective SES was measured, but there wasn't an objective measure of SES, so the respondent's actual SES unknown. Additionally, this study did not explore whether or not youth bully others within their own social class or if they bully across class. Future research should include objective SES measures so that the effect of social class and geographic location can be studied in full. That is, do students in one particular geographic location tend to view themselves as lower class? How does that subjective SES impact bullying practiced compared to a more objective measure? This study is also limited in nature because it solely focuses on quantitative measures. Thus, it might be useful for future research to consider conducting qualitative research, which may provide more answers on the effect of social class on bullying practices.

Finally, while the findings of this study are suggestive, they are preliminary findings that should be further explored. The extent of this study is limited in its exploration of the reasons why students who identify as a certain race, weight, and gender and live in a certain geographic location have different experiences in the probability and frequency rates of physical bullying practices. However, the significance and consistency of the results throughout this study supports the notion that the interplay of race, gender, weight, and geographic location impact the likelihood of physical bullying. As such, all possible explanations to support the findings of this study should be examined further in future research.

Research like the current study can be of value to scholars and policymakers alike, as it can be helpful in creating more preventative strategies for bullying and increases scholar knowledge on female physical bullying practices. As such, the findings from this research can be used to guide school policies toward bullying prevention and intervention. Based off the results from this study, it is recommended that policymakers consider physical bullying practices among females in the development of policies. In addition, future policies should encourage teachers to recognize individual behaviors and characteristics that are associated with physical bullying victimization across gender.

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## Appendix

The tables presented in this appendix represent the regression models that examined the following non-intersectional variables: race, weight, and geographic location. That is, each of these variables were measured and examined by themselves, instead of in combination with the other variables.

### Probability of Physical Bullying Victimization and Non-Intersectional Variables

The first table represents a regression model for the probability of physical bullying victimization within the female subsample. In this regression model, nonintersectional variables are examined, such as race, weight, and rurality. The results indicate that race, by itself, is not a significant predictor of physical bullying victimization among girls. Additionally, geographic location is not a significant predictor of physical bullying victimization, as well as having a large BMI among girls.

Female				
	Probability of Being Physically Bullied			
Variable		В	SE	
	Intercept	1.29	0.99	
Demogra	phics			
	Age	-0.19	0.05 ***	
	SES	-0.15	0.06 *	
	Disability	0.51	0.10 ***	
Friend V	ariables			
	Number of Female Friends	-0.08	0.08 ***	
	Parents Accept Friends	-0.03	0.06	
	Friends' Age	-0.03	0.11	
School V	ariables			
	Classmates are Nice	0.17	0.06 **	
	Number of Fights	0.18	0.04 ***	
	Physically Bullying Others	0.62	0.06 ***	
Personal	Attitudes			
	Feel About My Body	-0.10	0.06	
	Feel About My Parents	-0.38	0.12 **	
Non Intersectional Variables				
	Large BMI	0.26	0.33	
	Normal BMI	0.17	0.32	
	White	0.21	0.12	
	Black	-0.07	0.15	
	Rural	0.22	0.11	
	Psuedo R <sup>2</sup>	0.104		

Note: N=8,536; \*\*\* p < .001; \*\* p < .01; \* p < .05

The table below represents the regression model for the probability of physical bullying victimization within the male subsample. In this regression model, nonintersectional variables are examined. As such, this model examines race by itself, and weight by itself. The model shows that White boys are more likely to be physically bullied than African American and Hispanic boys. In fact, the only significant nonintersectional variable was being a White person.

Male				
	Probability of Being Physica	ally Bul	lied	
Variable		В	SE	
	Intercept	2.68	0.77	***
Demogra	phics			
	Age	-0.24	0.04	***
	SES	-0.01	0.05	
	Disability	0.22	0.09	*
Friend V	ariables			
	Number of Female Friends	-0.13	0.04	**
	Parents Accept Friends	0.06	0.05	
	Friends' Age	0.21	0.09	*
School V	ariables			
	Classmates are Nice	-0.37	0.05	***
	Number of Fights	0.12	0.03	***
	Physically Bullying Others	0.53	0.05	***
Personal	Attitudes			
	Feel About My Body	-0.34	0.06	***
	Feel About My Parents	-0.37	0.11	***
Non Inte	rsectional Variables			
	Large BMI	-0.02	0.09	
	White	0.29	0.10	**
	Hispanic	-0.01	0.11	
	Black	-0.06	0.16	
	Psuedo R <sup>2</sup>	0.121		
Note: N=4,127; *** p < .001; ** p < .01; * p < .02				< .05

# Probability of Physical Bullying Perpetration and Non-Intersectional Variables

The following table examines the probability of physical bullying perpetration within the female subsample This regression model also examines the non-intersectional variables. Once again, race by itself does not appear to be a significant predictor of female physical bullying perpetration. Having a normal BMI and geographic location also do not appear to significantly predict bullying perpetration among females.

Probability of Physical Bu	ullying Pe	erpetra	ation
	В	SE	
Intercept	-2.70	0.90	**
phics			
Age	-0.09	0.05	
SES	0.02	0.06	
Disability	0.20	0.11	
ariables			
Friends Age	0.22	0.11	*
Parents Accept Friends	0.17	0.06	**
Time Spent with Friends	0.11	0.03	***
ariables			
School index	0.30	0.09	**
Classmates are Nice	0.02	0.07	
Number of Fights	0.39	0.04	***
Physically Bullied	0.67	0.06	***
Attitudes			
Feel About My Parents	-0.23	0.12	
rsectional Variables			
Normal BMI	0.02	0.11	
White	-0.22	0.12	
Black	0.07	0.14	
Rural	-0.18	0.15	
Suburban	0.16	0.12	
Psuedo R <sup>2</sup>	0.1496		
	Probability of Physical Bu Intercept phics Age SES Disability ariables Friends Age Parents Accept Friends Time Spent with Friends ariables School index Classmates are Nice Number of Fights Physically Bullied Attitudes Feel About My Parents resectional Variables Normal BMI White Black Rural Suburban Psuedo R <sup>2</sup>	Probability of Physical Bullying Pe         B         Intercept       -2.70         phics         Age       -0.09         SES       0.02         Disability       0.20         ariables       Friends Age       0.22         Parents Accept Friends       0.17         Time Spent with Friends       0.11         ariables       School index       0.30         Classmates are Nice       0.02         Number of Fights       0.39         Physically Bullied       0.67         Attitudes       Feel About My Parents       -0.23         resectional Variables       Normal BMI       0.02         White       -0.22       Black       0.07         Rural       -0.18       Suburban       0.16	B         SE           Intercept         -2.70         0.90           phics         -

The table below examines the likelihood of boys physically bullying others. The results indicate that being Hispanic is the only significant predictor of physical bullying perpetration among males. As such, Hispanic boys are more likely to physically bully others than White boys. Weight and geographic location did not appear to significantly predict bullying perpetration among males.

	Male			
	Probability of Physical Bullying Perpetration			
Variable		в	SE	
	Intercept	-4.04	0.86 ***	
Demogra	phics			
	Age	0.02	0.05	
	SES	0.05	0.05	
	Disability	0.04	0.10	
Friend V	ariables			
	Friends Age	0.28	0.09 **	
	Parents Accept Friends	0.06	0.05	
	Time Spent with Friends	0.13	0.03 ***	
School V	ariables			
	School index	0.34	0.08 ***	
	Classmates are Nice	-0.09	0.06	
	Number of Fights	0.27	0.03 ***	
	Physically Bullied	0.52	0.05 ***	
Personal	Attitudes			
	Feel About My Parents	-0.39	0.11 ***	
Non Inte	rsectional Variables			
	Large BMI	0.48	0.30	
	Normal BMI	0.16	0.30	
	White	-0.20	0.11	
	Hispanic	0.24	0.11 *	
	Rural	0.21	0.13	
	Suburban	0.09	0.11	
	Psuedo R <sup>2</sup>	0.135		
	Note: N=4,127; *** p < .001	; ** p <	.01; * p < .05	

# **Frequency of Physical Bullying Perpetration and Non-Intersectional Variables**

The table below shows the regression model for physical bullying perpetration and non-intersectional variables within the female subsample. The only nonintersectional variable that was significant was being White. As such, girls are less likely to physically bully others frequently if they are White than if they are Black or Hispanic.

Female				
	Frequency of Physical Bully	ing Perpetration		
Variable	2	B SE		
	Intercept	-0.16 0.17		
Demogr	aphics			
	Age	0.00 0.01		
	SES	0.03 0.01 *		
	Disability	0.02 0.02		
Friend V	ariables			
	Time Spent with Friends	0.02 0.01 *		
	Parents Accept Friends	0.03 0.01 ***		
	Friends' Age	0.02 0.02 **		
School V	ariables			
	School Index	0.04 0.02 ***		
	Classmates are Nice	-0.01 0.01 ***		
	Number of Fights	0.10 0.01 *		
	Physically Bullying Others	0.25 0.01 ***		
Persona	l Attitudes			
	Feel About My Parents	-0.05 0.02 ***		
Non Int	ersectional Variables			
	Large BMI	0.04 0.05		
	Normal BMI	0.01 0.05		
	White	-0.07 0.02 **		
	Black	-0.02 0.03		
	Hispanic	-0.03 0.03		
	Suburban	0.02 0.02		
	Rural	-0.01 0.02		
	Adjusted R <sup>2</sup>	0.1379		

The table below shows the regression model for the frequency of physical bullying perpetration among males. The non-intersectional variables within the model that are significant are large BMI and being African American. As such, African American boys are likely to physically bully others more frequently than White boys or Hispanic boys. Additionally, boys with a large BMI are more likely to physically bully others more often than boys who have a healthy weight.

	Male		
	Frequency of Physical Bull	ying Pe	erpetration
Variable		В	SE
	Intercept	-0.44	0.21 *
Demogra	aphics		
	Age	0.01	0.01
	SES	0.01	0.01
	Disability	0.03	0.02
Friend V	ariables		
	Time Spent with Friends	0.03	0.01 ***
	Parents Accept Friends	0.03	0.01 *
	Friends' Age	0.07	0.02 **
School V	ariables		
	School Index	0.05	0.02 **
	Classmates are Nice	-0.02	0.01
	Number of Fights	0.08	0.01 ***
	Physically Bullying Others	0.22	0.01 ***
Personal	Attitudes		
	Feel About My Parents	-0.09	0.03 ***
Non Inte	rsectional Variables		
	Large BMI	0.14	0.06 *
	Normal BMI	0.09	0.06
	White	-0.03	0.03
	Black	0.04	0.03 *
	Hispanic	0.06	0.03
	Rural	0.06	0.05
	Urban	0.01	0.05
	Suburban	0.03	0.05
	Adjusted R <sup>2</sup>	0.14	

Note: N=4,127; \*\*\* p < .001; \*\* p < .01; \* p < .05

## **Frequency of Physical Bullying Victimization and Non-Intersectional Variables**

The table below shows the regression model for the frequency of physical bullying victimization and non-interactional variables within the female subsample. None of the non-interactional variables significantly predict the frequency of physical bulling victimization among girls.

Female			
Frequency of Being Physically Bullied			
Variable		В	SE
	Intercept	0.85	0.18 ***
Demogra	phics		
	Age	-0.03	0.01 ***
	SES	-0.02	0.01
	Disability	0.08	0.02 ***
Friend V	ariables		
	Number of Female Friends	-0.02	0.02
	Parents Accept Friends	0.01	0.01
	Friends' Age	-0.04	0.02
School V	ariables		
	Classmates are Nice	-0.04	0.01 ***
	Number of Fights	0.04	0.01 ***
	Physically Bullying Others	0.27	0.01 ***
Personal	Attitudes		
	Feel About My Body	-0.03	0.01 *
	Feel About My Parents	-0.08	0.02 ***
Non Inte	rsectional Variables		
	Large BMI	0.01	0.02
	White	0.03	0.02
	Black	0.02	0.03
	Rural	0.08	0.04
	Urban	0.01	0.04
	Suburban	0.03	0.04
	Adjusted R <sup>2</sup>	0.1162	
	Note: N=4,409; *** p < .001; **	p < .01;	* p < .05

Finally, the last table, shown below, presents a regression model of the frequency of physical bullying victimization and non-intersectional variables within the male subsample. The only non-intersectional variable that is significant is being White. As such, boys are likely to be physically bullied more frequently if they are White than if they are Hispanic.

	Male			
	Frequency of Being Physically Bullied			
Variable		В	SE	
	Intercept	1.33	0.22 ***	
Demogra	phics			
	Age	-0.06	0.01 ***	
	SES	0.00	0.01	
	Disability	0.07	0.02 **	
Friend V	ariables			
	Number of Female Friends	-0.05	0.01 ***	
	Parents Accept Friends	0.03	0.01 *	
	Friends' Age	0.05	0.03 *	
School V	ariables			
	Classmates are Nice	-0.14	0.02 ***	
	Number of Fights	0.04	0.01 ***	
	Physically Bullying Others	0.27	0.02 ***	
Personal	Attitudes			
	Feel About My Body	-0.11	0.02 ***	
	Feel About My Parents	-0.09	0.03 **	
Non Inte	rsectional Variables			
	Large BMI	-0.02	0.03	
	White	0.06	0.03 *	
	Hispanic	-0.02	0.03	
	Urban	-0.04	0.06	
	Rural	0.00	0.06	
	Suburban	-0.04	0.06	
	Adjusted R <sup>2</sup>	0.1509		
	Note: N=4,127; *** p < .001;	** p < .01	; * p < .05	



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