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Adolescent Bullying and Socioeconomic Status in Latin America and the Caribbean; An Investigation Across Individual, School and Policy Levels

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Adolescent Bullying and Socioeconomic Status in Latin America and the Caribbean; An Investigation Across Individual, School and Policy Levels

A dissertation submitted in partial satisfaction of the

requirements for the degree Doctor of Philosophy in Community Health Sciences

by

Natalia Dutra Oliveira Woolley

2020

ABSTRACT OF DISSERTATION

Adolescent Bullying and Socioeconomic Status in Latin America and the Caribbean; An Investigation Across Individual, School and Policy Levels

by

Natalia Dutra Oliveira Woolley

Doctor of Philosophy in Community Health Sciences

University of California, Los Angeles, 2020

Professor James A. Macinko, Chair

Bullying during childhood and adolescence can negatively influence various aspects of youth development and long-term well-being. Adults who were bullied as children or adolescents are more likely to struggle with mental health problems such as panic disorders and anxiety, while adolescent bullies are more likely to engage in violent behaviors later in life. Yet, bullying is a common experience for many youths around the world and global surveys estimate that approximately one in three adolescent males and one in four females have been the target of bullying at school.

This dissertation focuses on adolescent bullying in Latin America and the Caribbean, a region of the world affected by high levels of intentional violence among youth, but that so far has been relatively under researched. Together, these three papers explore the role of socioeconomic factors at the individual and school levels and assess the national policy landscape in the region. The first paper focuses on the relationship between student socioeconomic status and different dimensions of bullying victimization (e.g. physical and verbal). The second paper investigates how the school's socioeconomic context relates to student bullying victimization. These two papers use data from the 2015 Program for International Student Assessment (PISA). The third paper provides an overview of the antibullying legislative context in Latin America and the Caribbean. This paper includes a descriptive analysis of existing school-based antibullying laws and uses both empirical and iterative methods to create a quantitative legal dataset, which is subsequently used to assess the scope of existing laws, bullying definitions, and preventive measures.

Analyses of the PISA data reveal a sizeable number of missing data, especially among more vulnerable students. Data completeness also varies across participating countries. These findings highlight the difficulties of conducting large international assessments and should support future studies on the topic by underscoring measurement challenges and existing data gaps. Results from the last paper indicate most countries in the region have yet to adopt national antibullying laws. Nevertheless, encouraging signs include the fact that the most populous countries in the region have laws in place and that new laws have steadily emerged over the past ten years.

The dissertation of Natalia Dutra Oliveira Woolley is approved.

Randall Kuhn

Elizabeth D'Amico

Patrick Heuveline

James A. Macinko, Committee Chair

University of California, Los Angeles

2020

DEDICATION PAGE

This dissertation is dedicated to Benicio, Sienna, Solange, Pedro and Fernanda. This is for you and for me. Eu amo voces. To George, thank you for that first drive through the UCLA campus, 15 years ago. You knew I belonged here long before I did.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

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This dissertation was written by many hands. My advisor, James A. Macinko, has been an incredible motivator and believer, and for that, I am so very thankful. I was also lucky to have the support of other brilliant academics including Dr. Jody Heymann, and my committee members, Drs. Kuhn, D'Amico and Heuveline. In addition, part of my dissertation was conceived, articulated, and written while I worked at the UCLA World Policy Analysis Center. I genuinely appreciate the help and insights from the staff and postdocs there, especially from Willetta Waisath and Vanessa Ríos-Salas.

My family has also been an integral part of this journey. My children, Benicio and Sienna were the fuel to my drive and the warmth after long hard days. My partner, George, gave me the operational support and psychological bandwidth to embrace my ambitions and to dream big. My mother paused her life in Brazil many times so that I could continue to move ahead in my PhD. My father and sister inspired me with their intelligence and humor. Last, but not least, I also had the support of a village of "PhD whisperers", peers who have been so generous with their time, advice, and intellect. Thank you all.

Lastly, I wanted to acknowledge the tough and uncertain times we currently live in. I wrote the following statement one day before stay at home orders were issued in the state of California to prevent the spread of the novel coronavirus.

I write this on March 15th, 2020. The coronavirus has been fast spreading throughout the world, and in the past 4 days there has been major panic in the United States, as schools have closed, workers have been told to work from home, and most large gatherings have been

canceled. People have ravaged supermarkets and stockpiled toilet paper, hand sanitizer, and canned foods. Worst yet, thousands have lost their lives and health care systems are under major strain. The future feels uncertain.

One thing is clear, the challenges for public health workers are immense. This pandemic has affected the entire world and will have long-lasting effects. As millions prepare to spend weeks in isolation, mental health delivery systems, both at the individual and the community levels, will have to be strengthened. Clear faults in our national public health system and how we collaborate internationally have been painfully exposed. Fake news and misinformation continue to run rampant online. Real scientists, backed by real data, are often discredited in the face of a source-less tweet or text. These challenges will set the public health agenda for decades to come and I am honored to join a community of people who are ready to tackle them. For the past 10 years, I have met so many people who are bright, passionate, and committed to the greater good. I look forward to joining my fellow public health workers in making the world a healthier, safer, and more equitable place.

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Woolley, N., & Macinko, J. (2019). Association between sociodemographic characteristics and sexual behaviors among a nationally representative sample of adolescent students in Brazil. Cadernos de Saúde Pública, 35(2), e00208517. Epub February 11, 2019.

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CHAPTER I: INTRODUCTION

Children and adolescents need a safe and nurturing school environment to learn and develop into healthy adults (UNESCO, 2017a). Yet thousands of youths suffer from violence at school or live in fear of being targeted (Elgar, McKinnon, et al., 2015; UNESCO, 2017a). Bullying, commonly described as recurrent and unprovoked aggression towards someone perceived to be more vulnerable (Olweus, 1994), is one of the most widespread forms of school violence (Elgar, McKinnon, et al., 2015). Worldwide estimates show that approximately one-third of adolescent students have been bullied at some point in their lives (Elgar, McKinnon, et al., 2015). Furthermore, although school bullying rates often vary, some studies have found it to be more pervasive in low and middle-income countries (Elgar, McKinnon, et al., 2015), and in countries with higher levels of income inequality (Elgar, Craig, Boyce, Morgan, & Vella-Zarb, 2009)

Bullying has been categorized according to the type and medium of aggression, and the nature of involvement. For instance, bullying can happen either in person or online, and types of in-person bullying include physical (e.g. punching, slapping and pushing), verbal (e.g. teasing and swearing at someone), and relational aggression (e.g. social exclusion and spreading rumors) (J. Wang, Iannotti, & Nansel, 2009). In contrast, cyberbullying takes place in online platforms such as social media and text messages (e.g. making threats and cyber stalking) (Ybarra & Mitchell, 2004). As for the nature of bullying involvement, it has been typically grouped into three interconnected categories; (1) victim-only; (2) perpetrator-only; and (3) perpetrator-victims

(J. Wang et al., 2009). Bullying involvement can also be indirect when for instance, bystanders watch and cheer on peer aggression (Evans & Smokowski, 2015).

Researchers have sought to identify individual characteristics that may put youths at higher risk of bullying victimization. Some well-established risk factors include being overweight or obese and having a learning disability (Hong & Espelage, 2012). In contrast to physical and cognitive characteristics, less is known about how circumstantial characteristics, such as adolescent socioeconomic status and peer networks, may relate to victimization (Dishion & Tipsord, 2011; Tippett & Wolke, 2014). Adolescent individual and contextual socioeconomic characteristics, in particular, are often a salient aspect of adolescent health and health-related behaviors (Torsheim et al., 2004; Viner et al., 2012) and therefore their potential to impact bullying should be further investigated.

Cross-sectional studies show that bullying involvement is correlated with higher rates of mental health problems, somatization (i.e. headaches, backaches), suicidal thoughts, and poorer academic performance (Due et al., 2005; D. L. Espelage & Holt, 2013; Gruber & Fineran, 2016; D. Nikolaou, 2017). Longitudinal studies also show that bullying victimization during childhood and adolescence is associated with higher rates of mental health problems later in life (Copeland, Wolke, Angold, & Costello, 2013), while adolescent bullies are more likely to engage in serious violent behaviors in adulthood (M. J. Kim, Catalano, Haggerty, & Abbott, 2011).

The widespread prevalence of bullying, coupled with its negative impacts on youth development, has made the problem a public health concern (Elgar, McKinnon, et al., 2015; UNESCO, 2017a). International organizations, such as UNESCO, have also emphasized that

addressing school violence is a key element in advancing the United Nations' (UN) global development agenda (UNESCO, 2017a). This subject may gain even greater visibility as countries have been called to report national bullying prevalence at schools to support the UN Sustainable Development Goals (SDGs) and their related indicators (UNESCO, 2017b).

To this date, limited data on causes, dimensions, and impacts of bullying have been a major challenge in designing and supporting bullying prevention efforts globally (UNESCO, 2017a). Most research on bullying has been conducted in high-income countries, even though bullying prevalence appears to be higher in the Global South (i.e. low and middle-income countries) (Elgar, McKinnon, et al., 2015), home to about 70% of the world's youth (Oliveira-Campos et al., 2014). Besides, research has been mostly focused on identifying physical and cognitive characteristics that may increase bullying involvement risk (Kljakovic & Hunt, 2016), while broader aspects such as youths' socioeconomic status, exposure to community violence, and the policy context have received less attention (Hong & Espelage, 2012; Tippett & Wolke, 2014)

This dissertation has investigated the relationship between socioeconomic characteristics (both at the individual and contextual levels) and bullying victimization. While these characteristics have been shown to be important factors in various aspects of adolescent health and health-related behaviors (Torsheim et al., 2004; Viner et al., 2012), less is known about how they may relate to bullying (Tippett & Wolke, 2014).

In addition, the present studies drew from a representative sample of eight countries in the Latin American and the Caribbean region (LAC), a subset of countries in the Global South.

The focus on LAC countries is due to multiple reasons. Youths in this region are disproportionally affected by interpersonal violence (Global Burden of Disease Pediatrics et al., 2016) and socioeconomic inequality (Ortiz & Cummins, 2011) compared to adolescents in other regions of the world. Research on bullying and socioeconomic inequality has shown a positive association between income inequality (measured by the Gini coefficient), and prevalence of bullying victimization among youth (Elgar et al., 2009). However, research on the topic so far has been limited to European countries, which have less inequality compared to LAC countries (OECD, 2015b). Moreover, research on individual socioeconomic status and bullying victimization has also been restricted to high-income countries in Europe and North America and has yielded inconclusive results (Tippett & Wolke, 2014). To my best knowledge, there has been no comprehensive research on this topic in the LAC region (Tippett & Wolke, 2014). Therefore, it is necessary to build a deeper understanding of the risk factors related to individual bullying victimization in the region and to identify institutional obstacles that may hinder schools and governments' ability to tackle the problem.

Countries in Latin America and the Caribbean also have some of the highest rates of violent crime (e.g. assault and homicide) in the world (UNODC, 2015). The positive association between bullying aggression during adolescence and violent acts in adulthood (M. J. Kim et al., 2011), indicates that bullying prevention should be a priority in any comprehensive effort that LAC governments may undertake to decrease overall violence. Yet, while many LAC countries have begun to recognize this and have adopted school-based antibullying legislation in the past ten years, there has been no systematic analysis of these laws.

The effect of school bullying prevention in the LAC region could extend beyond violence reduction to impact educational outcomes and economic growth. Low educational performance has been identified as a key factor hindering economic development in the region (OECD, 2010). In one international assessment of adolescent knowledge in math and science, both key components in economic innovation and growth, LAC countries fared second to last, only ahead of countries in Sub-Saharan Africa. Evidence that bullying victimization has a significant negative impact on student performance in Latin America and the Caribbean (Delprato, Akyeampong, & Dunneb, 2017), suggest that efforts to lower rates of bullying could potentially contribute to improve educational outcomes and support future economic development.

1.1 Study Aims and Research Questions

This dissertation has addressed current gaps in youth bullying research by investigating the association between adolescent bullying victimization and socioeconomic status in the LAC region at the 1) individual; 2) school; and 3) policy levels. This approach can contribute to our understanding of how peer aggression at the individual level is potentially connected to wider systemic factors, which may in turn, support and even propagate the problem.

The key research questions include:

- How does adolescents' socioeconomic status relate to their experience with bullying?
- Does the school context matter?
- How have governments addressed the problem of bullying among adolescents?

The following study aims, questions, and hypotheses were created to answer these key questions:

Study Aim 1: To investigate the individual-level association between adolescent bullying victimization and socioeconomic status among students across Latin America and the Caribbean. Also, to explore differences in the association between SES and bullying victimization according to the type of bullying and to assess whether the direction and magnitude of these associations differ by sub-dimensions of SES (i.e. family wealth and cultural possessions).

Question 1.1: Is individual socioeconomic status associated with bullying victimization in Latin America and the Caribbean?

Hypothesis 1.1: Overall, bullying victimization will be negatively associated with SES, meaning those with lower SES will be more likely to report being victims of bullying.

Rationale: Low-SES youths are at higher risk of bullying victimization because they are more likely to be exposed to violence at home and in their neighborhoods, and these experiences can shape youths' interaction with others making them more vulnerable to peer aggression (Eriksen & Jensen, 2006). Low-SES youths might also have fewer means to enjoy the same lifestyle as their peers, and evidence suggests this isolating experience can make them more vulnerable to bullying aggression (Tippett & Wolke, 2014).

Question 1.2: Are there differences in the association between bullying victimization and SES according to the type of bullying (i.e. physical, verbal, and relational)?

Hypothesis 1.2: The association between bullying victimization and SES will be stronger for physical bullying, compared to other types of bullying.

Rationale: Low-SES youths are more likely to be exposed to violence at home, and to engage in physical fights compared to youths with higher SES, and therefore might be at higher

risk of being involved in physical bullying (Amanullah, Heneghan, Steele, Mello, & Linakis, 2014; Eriksen & Jensen, 2006; Simpson, Janssen, Craig, & Pickett, 2005).

Question 1.3: Does the association between bullying and SES differ by sub-dimensions of SES (i.e. cultural possessions and family wealth)?

Hypothesis 1.3a: SES will have a negative association with bullying victimization, except for cultural capital. Cultural capital will be positively associated with bullying victimization.

Hypothesis 1.3b: The association between SES and bullying victimization will be moderated by gender: males will be more likely to report bullying victimization if they have more cultural capital, all else equal.

Rationale: Economic capital in the form of family wealth may be a protective factor against bullying victimization since this resource can enable youths to attend safer and more advantaged schools (Bradshaw, Sawyer, & O'Brennan, 2009; OECD, 2017b). On the other hand, adolescent males who have more cultural capital (e.g. participates in artistic activities, owns books of poetry) might be perceived to be more effeminate, which will put them at higher risk of bullying victimization, particularly given the dominant gender roles in LAC societies (Lehman & A. Dumais, 2016).

Question 1.4: Are there differences in the association between different types of bullying victimization and SES dimensions?

Hypothesis 1.4: The associations between different dimensions of SES and types of bullying victimization will differ in magnitude and significance. For instance, I hypothesize that

cultural possessions will be positively associated with physical bullying, whereas family wealth will be negatively associated with relational bullying.

Rationale: Each SES dimension may influence different aspects of adolescent development, and their impact may vary across gender and age. For example, studies have linked low parental education to a higher prevalence of relational bullying among their children, because low parental education correlates with higher levels of parental stress and increased family conflict, which in turn, influences the quality of children's peer interactions (Curtner-Smith et al., 2006). In contrast, other dimensions of SES, such as higher cultural capital, may put youths at risk of physical bullying (e.g. being hit, having money taken away), especially among males who are perceived to be more effeminate and weaker because of that (Lehman & Dumais, 2016).

Question 1.5: To what extent does the association between bullying and SES vary by country?

Hypothesis 1.5: The direction and magnitude of the relationship between bullying victimization and SES will vary across LAC countries.

Rationale: The LAC region is composed of countries with a wide range of socioeconomic backgrounds (The World Bank, 2019). Existing evidence shows that bullying prevalence is positively correlated with some aspects of socioeconomic context, such as national economic inequality as measured by the Gini coefficient (Elgar et al., 2009). Given the variety of socioeconomic contexts in the region and its relationship to bullying prevalence, I expect the

association between bullying and student SES will not be constant across the sampled LAC countries.

Study Aim 2: To investigate the impact of the school socioeconomic context on student bullying risk in Latin American and the Caribbean. Moreover, to assess potential interactions between schools' socioeconomic context, school climate, and student's socioeconomic status in exposure to bullying.

Question 2.1: Is there an association between bullying victimization and schools' socioeconomic context in Latin America and the Caribbean?

Hypothesis 2.1a: Schools with lower socioeconomic means will have higher rates of bullying victimization, all else equal.

Rationale: Schools with lower socioeconomic means (i.e. composed of mostly low SES students) are more likely to have higher student-teacher ratios, resulting in less student supervision and higher risk of bullying victimization (Hong & Espelage, 2012). In addition, schools with higher concentration of students from low-SES are more likely to be in communities affected by crime and violence, which may contribute to higher prevalence of school bullying (Bowes et al., 2009).

Hypothesis 2.1b: Schools with higher socioeconomic inequality will have higher rates of bullying victimization, all else equal.

Rationale: Country-level studies of socioeconomic inequality and bullying point to a positive relationship between the two, meaning the more inequality the higher prevalence of bullying among youths (Elgar et al., 2009). One possible explanation is that socioeconomic

inequality negatively affects social cohesion (Elgar et al., 2009). I hypothesize that this relationship will also be present at the school level.

Question 2.2: Does the nature or strength of the association between student socioeconomic status and bullying victimization change as a function of the schools' socioeconomic context?

Hypothesis 2.2a: Low SES students will be more likely to report bullying victimization in schools with higher socioeconomic means (i.e. composed of mostly higher SES students), compared to similar low SES students in schools with lower socioeconomic means.

Rationale: In schools with higher socioeconomic means, low SES students may stand out and become the target of bullying because they cannot afford the same lifestyle as their peers (Tippett & Wolke, 2014).

Hypothesis 2.2b: Low SES students will be more likely to report bullying victimization in schools with more socioeconomic inequality compared to similar low SES students in schools with less inequality.

Rationale: Schools with more socioeconomic inequality may lead to stronger endorsement and more widespread engagement in behaviors aimed at highlighting social status differences such as bullying (Due et al., 2009). Students with lower socioeconomic status might, therefore, be at greater risk.

Question 2.3: Does school climate impact the relationship between bullying victimization and schools' socioeconomic context?

Hypothesis 2.3: The association between school socioeconomic context and student bullying will be modified by the school climate. It is hypothesized that in schools with a more positive school climate, the magnitude of the association between school socioeconomic context and bullying will be lower compared to schools with a more negative school climate.

Rationale: A positive school climate has been shown to be a protective factor against bullying (Klein, Cornell, & Konold, 2012), and therefore, it is possible that school climate can mitigate the association between bullying and the school socioeconomic context.

Question 2.4: Is the relationship between bullying victimization and schools' socioeconomic context different across LAC countries?

Hypothesis 2.4: The direction, magnitude, and statistical significance of the association between bullying victimization and schools' socioeconomic context will differ across LAC countries.

Rationale: The LAC region encompasses a heterogeneous group of countries in terms of social norms, wealth, and income inequality (The World Bank, 2019). Moreover, each country has a unique educational system with different policies and priorities (OECD, 2010). Given this myriad of factors, it is unlikely that the association between bullying victimization and schools' socioeconomic context is uniform across all countries in the region.

Study Aim 3: To identify, compile, and compare current school-based antibullying legislation in Latin America and the Caribbean. In addition, to assess the extent to which vulnerable adolescents, such as those with low SES are explicitly protected by the legislation.

Question 3.1: What is the scope of the school-based antibullying legislation in each LAC country?

Question 3.2: How does each country define bullying?

Question 3.3: Are there mandated procedures in each country's legislation regarding the consequences of bullying involvement? And if so, what are they?

Question 3.4: Does each country's legislation include provisions to prevent bullying? If so, what are they?

Question 3.5: How do these main components of countries' antibullying legislations relate to the available policy evidence?

Hypotheses 3.1-3.5: The scope of the legislation and definition of bullying will be relatively similar across legislative texts. More variation will be found with regards to the mandated procedures in instances of bullying, the provisions to prevent this behavior, and their adherence to existing policy evidence.

Rationale: It is likely that the scope of all legislation will include public schools since these institutions are administered by the governments enacting these laws. Also, since all of the legislative texts have been enacted during the past 20 years, they may include the most common forms of bullying (e.g. physical, verbal, and cyber) (J. Wang, Iannotti, & Luk, 2012). In contrast, there is less consensus around effective ways to prevent bullying, and what are the appropriate corrective measures (Hatzenbuehler, Schwab-Reese, Ranapurwala, Hertz, & Ramirez, 2015; National Academies of Sciences & Medicine, 2016), therefore it is expected that legislative texts will exhibit a variety of approaches.

CHAPTER II: BACKGROUND

2.1 Bullying Impact on Adolescent Health

Bullying has been considered a public health priority (Elgar, McKinnon, et al., 2015; Srabstein et al., 2008) given its widespread prevalence among youth, and ample evidence connecting it to the development of both physical and mental health problems later in life (UNESCO, 2017a).

At the most immediate level, victims of physical bullying may sustain serious injuries from being pushed, hit, or slapped. Although there are no known direct estimates of the number of serious injuries caused by physical bullying, administrative data from emergency rooms show that over a seven-year period, youths who suffered intentional injuries at school were responsible for about 736,014 emergency room visits in the United States alone (Amanullah et al., 2014). Moreover, friends or acquaintances were identified as the perpetrators in 86% of the cases, suggesting potential instances of physical bullying aggression, and the most common diagnoses included contusions, lacerations, and fractures (Amanullah et al., 2014).

Other aspects of physical well-being can also be impacted by bullying victimization, irrespective of the type of bullying. For instance, researchers have highlighted a connection between bullying and somatization disorders, which are defined as the physical symptoms stemming from psychological distress (Lipowski, 1988). In one multi-country cross-sectional study, males and females who reported being bullied at school weekly had higher odds of having headaches and stomach aches (Due et al., 2005). Also, one prospective cohort study of elementary students in the Netherlands showed that those who were bullied at baseline were

more likely to report sleeping problems, bedwetting and poor appetite at follow up (Fekkes, Pijpers, Fredriks, Vogels, & Verloove-Vanhorick, 2006).

Bullying involvement has also been shown to influence individuals' mental health in both the short and long-term. Cross-sectional studies have pointed to a positive association between bullying involvement and low self-esteem, depression, and anxiety disorders (Gini & Pozzoli, 2009; Kaltiala-Heino, Rimpela, Rantanen, & Rimpela, 2000; van der Wal, de Wit, & Hirasing, 2003). A positive association between bullying victimization during adolescence and anxiety later in life was also found in one longitudinal study in the U.S. in which researchers found a higher prevalence of panic disorders and generalized anxiety among adults with past bullying experiences (Copeland et al., 2013).

Even more severe, bullying involvement has been linked to suicidal thoughts and attempts. According to one retrospective study of British adults, those who recalled being bullied during childhood were more likely to report suicidal attempts, even after controlling for potential confounders such as unemployment status, level of debt, family health history and childhood trauma (Meltzer, Vostanis, Ford, Bebbington, & Dennis, 2011). In addition, one study in the U.S. showed that adolescent cyberbullying victimization was linked to a 14.5% increase in the prevalence of suicidal thoughts, and to an 8.7% increase in suicide attempts among this population (D. Nikolaou, 2017).

Lastly, bullying involvement has been associated with a higher risk of substance use, a behavior that might put youth on a lifelong path of addiction, abuse, and other related health problems (Sourander et al., 2007; Tharp-Taylor, Haviland, & D'Amico, 2009). Interestingly, this

relationship appears to be contingent upon the type of substance (e.g. alcohol, cigarettes) and the nature of bullying involvement (e.g. victim-only versus perpetrator-only). For instance, a positive association between alcohol use and bullying involvement has been found for both perpetrators (Kaltiala-Heino et al., 2000; Sourander et al., 2010) and victims (Mitchell, Ybarra, & Finkelhor, 2007; Windle, 1994). In contrast, studies have found cigarette-smoking initiation to be associated only with perpetrator-victims (Weiss, Mouttapa, Cen, Johnson, & Unger, 2011), while marijuana use was higher among perpetrators-only compared to the other groups (M. J. Kim et al., 2011).

Key Points:

- Bullying affects approximately one in three adolescent males and one in four adolescent females worldwide.
- Bullying involvement has a negative impact on health and development as this experience can:
  - Worsen physical health, either from injuries sustained from physical aggression or from somatization symptoms (e.g. headaches and back aches).
  - Lead to the development of mental problems such as depression and anxiety disorders.
  - Trigger suicidal thoughts and attempts.
  - Lead to substance use such as smoking cigarettes and drinking alcohol.

2.2 Predictors of Bullying Victimization

Over the past twenty years, extensive research has been carried out to better understand bullying patterns and risk factors. Cross-sectional studies indicate, for instance, that bullying prevalence varies across age and sex, and can change depending on the type of bullying (e.g. physical, verbal, etc.) (Y. S. Kim, Boyce, Koh, & Leventhal, 2009; Nansel et al., 2001). Overall, victimization tends to be higher among younger adolescents (around 11 years old) and decreases

over time (Craig et al., 2009). Physical bullying and cyberbullying, in particular, are typically higher among younger adolescents and decline as students enter high school, whereas verbal bullying tends to remain high throughout adolescence (J. Wang et al., 2012). Furthermore, adolescent males typically report higher rates of victimization from physical bullying, while females report higher rates of verbal aggression (Craig et al., 2009).

Physical appearance and sexual orientation are common targets of victimization, regardless of the type of bullying. In one meta-analysis of studies from Europe, North America, China, and Australia, researchers found that both overweight and obese students were at higher risk of bullying compared to their peers (Van Geel, Vedder, & Tanilon, 2014). Victimization is also rampant among LGBTQ students, as evidence by one survey of students in the District of Columbia, which found that 74% LGBT students reported being victims of verbal bullying, and 55% of students felt unsafe at school because of their sexual orientation (Berry, 2018).

In addition to visible characteristics, psychosocial traits, such as one's ability to interact effectively with peers and to avoid socially undesirable behaviors, can also influence bullying exposure risk (X. Q. Wang et al., 2018). Researchers have also been careful to note that the association between these traits and bullying is unlikely to be unidirectional. In other words, while certain psychosocial traits can increase bullying risk, victimization can also impact students' ability to create and maintain meaningful social connections (Reijntjes et al., 2011).

Key Points:

- Bullying is more prevalent among children and younger adolescents.
- Physical bullying is more prevalent among males, while females tend to report higher rates of verbal bullying.
- Overweight, obese and LGBTQ students have higher rates of bullying exposure.

2.3 Socioeconomic Factors and Bullying

Researchers have hypothesized several reasons why children and adolescents from lower socioeconomic status may be at greater risk of bullying victimization. First, low SES youths might stand out for being unable to afford the material goods and lifestyle enjoyed by their peers, and often, youths who differ from their group become the target of bullying (Maher & Elias, 2007). Moreover, youths who cannot afford to go on outings on the weekends or do not own a smartphone, for example, might be less likely to bond with a group of friends. This, in turn, can make youths more vulnerable to bullying because social groups are an important buffer against victimization (Paul & Cillessen, 2003).

The home and school environments might also contribute to low SES youths' higher odds of bullying victimization. At home, low SES youths are more often subjected to violence, in the form of sibling aggression, harsher parenting style, and exposure to intimate partner violence (Eriksen & Jensen, 2006). Additional stressors such as lack of parental emotional support and financial strain are also more prevalent in the lives of low SES youths (Miller & Taylor, 2012). As a consequence, children and adolescents can have difficulty regulating their emotions and develop internalizing behavioral disorders that make them more likely to be bullied (Paul &

Cillessen, 2003), including depression and social withdrawal (McFarlane, Groff, O'Brien, & Watson, 2003). At school, children and adolescents from low SES are often clustered in disadvantaged schools (Crosnoe, 2009) which are less likely to provide a stable and safe environment (Bradshaw et al., 2009). As a result, students in disadvantaged schools may be more exposed to a negative school environment, marked by a higher prevalence of school violence such as bullying (Bradshaw et al., 2009).

Low SES youths may also lack access to intellectual and social resources (Tippett & Wolke, 2014) which enables them to develop the necessary problem-solving skills (Stanton-Salazar, 1997) to prevent or deescalate peer conflict. The absence of such resources can also hinder their ability to navigate institutional settings, such as schools (Stanton-Salazar, 1997). Therefore low SES students might face greater challenges in accessing services (e.g. psychological counseling), establishing role model relationships and receiving emotional support from school teachers and staff (Stanton-Salazar, 1997), all of which can help mitigate the effects of bullying victimization when it occurs (Rigby, 2004).

However, despite the various potential pathways connecting low SES to bullying victimization, research on the topic has so far yielded inconclusive findings. For instance, although one meta-analysis of 22 studies indicated that odds of bullying victimization were 52% higher among low SES youths (OR=1.52, 95% CI=1.36, 1.71), the magnitude and statistical significance of this association were contingent upon the country in which the study took place, the type of SES measurement (e.g. continuous or categorical) and how SES was conceptualized (e.g. affluence or overall SES) (Tippett & Wolke, 2014).

Some of the problems in drawing conclusions from these studies include a lack of standardization and operationalization of SES measurements (Tippett & Wolke, 2014). Socioeconomic status is a latent and multidimensional concept (Braveman, Cubbin, Marchi, Egerter, & Chavez, 2001), and there is broad consensus that it should not be measured using one single variable (Braveman et al., 2001). The most common measures include educational achievement, occupation, income, and wealth (Braveman, 2006; Currie, Elton, Todd, & Platt, 1997; Willson, 2007). Because children and adolescents are not yet part of the workforce and have not finished their education, these SES measures are often collected from parents or at the household level (Currie et al., 1997).

Challenges in capturing SES among youths include, but are not limited to, household living arrangements, contextual factors, and youths who may not know about their parental income and education. For instance, for adolescents who do not live with one or both of their parents, such as children of divorced parents, parental and household SES information may differ (Currie et al., 1997). Also, parental income might not be a good measure for adolescents living in low and middle-income countries because income is more volatile and prone to seasonal changes in these areas (O'Donnell, 2008). Researchers recommend instead using more stable measures such as household assets or consumption (O'Donnell, 2008). It may also be difficult to assess SES directly from youths. For instance, they might not know specific details about their parents' salary. Researchers have approached this challenge by creating measures of household expenditures and consumption since these are direct corollaries of income (Currie et al., 1997). For example, some school-based surveys, such as the "Health-Behavior in School-aged

Children" (HSBC) survey, ask adolescents about household assets (e.g. television ownership and the number of bathrooms in the house) and spending habits such as the number of holiday trips in the previous twelve months (Currie et al., 1997; Elgar, Pfortner, et al., 2015).

A meta-analysis of SES and bullying illustrated some of the challenges in assessing SES and bullying and included studies covering a wide range of measurements for these two concepts (Tippett & Wolke, 2014). For example, some studies used single-variable measures of SES, such as "having experienced hunger in the previous 30-days" (Wilson, Bovet, Viswanathan, & Suris, 2012), while others used more complex indexes which included a series of parent-reported measures such as overall income level, educational and occupational levels of both mothers and fathers (Jansen, Veenstra, Ormel, Verhulst, & Reijneveld, 2011). In addition, while some studies had more subjective measures of SES, such as adolescents' perception of whether they considered themselves to be high, middle or low SES (Y. S. Kim et al., 2009), others had more objective measures which inquired whether adolescents lived in households with certain goods (e.g. cars, computers, etc.) (J. Wang et al., 2009).

Regarding the measurement of bullying, the meta-analysis indicated that many studies assessed bullying victimization with more general questions (e.g. have you been bullied in the past 12 months ?), as opposed to using behavior-based questions that account for the multiple dimensions of bullying (e.g. physical, verbal, relational, etc.) (Tippett & Wolke, 2014). General measurements of bullying, as opposed to more specific behavior-based questions, may underestimate the prevalence of bullying victimization among certain groups of youths. This was the case in one study among adolescents in the United States, where researchers concluded that

minority students were more likely to underreport bullying victimization experiences when asked if they had been bullied or not, versus when asked questions with examples and descriptions of bullying behaviors (Sawyer, Bradshaw, & O'Brennan, 2008). As a result, studies with general assessments of bullying are not able to investigate whether the association between SES and bullying differs depending on the type of bullying, and may also run the risk of underestimating the association between SES and bullying (Tippett & Wolke, 2014). Therefore, further analysis using behavior-based questions, allow for a more comprehensive investigation of the association between SES and bullying, and can help tailor antibullying interventions to address the more salient risk behaviors.

The majority of studies on the topic have also been carried out in high-income countries (Tippett & Wolke, 2014), and there is scant evidence on the topic in low and middle-income countries. Searches on PubMed and the Scientific Electronic Library Online (an online research repository focused on countries in Latin America and the Caribbean) for the key terms including bullying, socioeconomic status, Latin America, the Caribbean, yielded very few results.

Like the studies in North America and Europe, the few studies available in the LAC region indicate an inconsistent association between socioeconomic status and bullying. One study among early adolescents (ages 11 to 14 years old) in Brazil, found no association between maternal education, overall socioeconomic level and bullying for neither victims nor aggressors (Rech, Halpern, Tedesco, & Santos, 2013). However, the study was limited to one medium-sized city in the Southern region of Brazil and cannot be generalized to the entire country.

Similar to Brazil, one study in Bogota, Colombia, noted an absence of a significant association between socioeconomic status and bullying (Cepeda-Cuervo, Pacheco-Duran, Garcia-Barco, & Piraquive-Pena, 2008). However, the authors did not provide detailed information as to how socioeconomic status was collected or measured. Furthermore, study subjects were drawn solely from public schools and represented only students from low and middle socioeconomic status (Cepeda-Cuervo et al., 2008). Therefore, results do not capture differences in bullying victimization across the whole SES spectrum. Unlike Brazil, and Colombia, one study in Guadalajara, Mexico, found that bullying victimization was higher among adolescents (11-16 years old) whose fathers had low educational achievement, lived in more precarious housing conditions, did not have access to cellphones or computers, and whose mothers worked in the informal sector (Vega López, González Pérez, Valle Barbosa, Flores Villavicencio, & Vega López, 2013). In sum, given the scarcity of research on the socioeconomic determinants of bullying victimization in the region, this dissertation fills an important gap in our current understanding of the risk factors associated with bullying in a region of the Global South.

Key Points:

- Low SES youths may be at higher risk of bullying victimization, while also facing challenges in accessing resources that can help mitigate its effects.
- However, research on the topic has so far generated weak or inconclusive findings.
- Studies have employed a wide range of adolescent SES measures, with varying levels of robustness.
- In addition, most studies have focused on high-income countries, and little is known about countries in the Global South including those in the Latin America and the Caribbean region.

CHAPTER III: THEORETICAL FRAMEWORK AND CONCEPTUAL MODEL

This dissertation used Bronfenbrenner's Ecological model as the overall framework to structure each level of analysis and to articulate how different concepts, both within and across each level, relate to each other. Three additional theories, Link and Phelan's theory of Fundamental Causes of Health Inequalities (FCHI), Bourdieu's theory of Social Reproduction, and Shaw and Mackay's Social Disorganization theory, guided the selection and application of the specific concepts for the analysis under each study aim.

3.1. Ecological Model

Urie Bronfenbrenner first proposed the Ecological model in the late 1970s and further developed it through the course of his career (Bronfenbrenner, 1979, 1994, 1999; Bronfenbrenner & Morris, 2007). Although Bronfenbrenner initially applied the Ecological model to investigate child development problems, researchers later expanded the model's application to other topics and populations (Bronfenbrenner, 1994). This model is defined by the premise that individual actions take place within a broader context of four embedded systems: micro, meso, exo, and macrosystems. A final system, the chronosystem, pertains to the temporal aspects of the whole model (Bronfenbrenner, 1994).

The microsystem is the immediate environment around the individual and is characterized by face-to-face interactions (Bronfenbrenner, 1994). Examples of microsystems relevant to the bullying experience include interactions taking place in the family, the classroom, and the peer group (National Academies of Sciences & Medicine, 2016).

The mesosystem refers to the inter-relations between two or more microsystems. This system encompasses relationships existing in more than one setting (Bronfenbrenner, 1999). Researchers have studied how the interaction between teacher-adolescent and peer-to-peer can affect students' perception of safety in the school and the incidence of bullying (Hong & Espelage, 2012). For instance, a positive teacher-adolescent relationship can directly impact peer-to-peer aggression because, in addition to providing direct supervision of students during class time, teachers can set behavioral expectations and the disciplinary climate in the class. Teachers can also offer emotional support to students which can help youths' psychosocial development and reduce the risk of disruptive classroom behaviors (Wei, Williams, Chen, & Chang, 2010). Moreover, teachers can be instrumental in delivering antibullying interventions and helping shape students' attitudes towards bullying behavior (Swift et al., 2017).

The exosystem describes the factors occurring in multiple settings, one in which the individual might not be physically present (Bronfenbrenner, 1979). The neighborhood environment is one example of an exosystem factor that can influence bullying involvement (Hong & Espelage, 2012). Researchers have posited that youths living and attending school in neighborhoods afflicted by crime, delinquency and neighbor conflict are embedded in a larger environment in which violence such as bullying is normalized and commonplace (Bowes et al., 2009; D. Espelage & Swearer, 2009; Hong & Espelage, 2012).

Exosystems are embedded into a broader macrosystem, and this system is the "blueprint" for the cultural norms, beliefs, and legislative context of society (Bronfenbrenner, 1994). As a response to bullying, most U.S. states, for example, have adopted macrosystem-level measures

and have passed antibullying legislation (Hall, 2017). Although few studies have analyzed the effectiveness of these laws, some emerging evidence indicates their potential benefits in decreasing bullying (Hatzenbuehler et al., 2015). For instance, states that list LGBTQ status as a protected class against bullying have lower rates of bullying against this population (Hall, 2017). However, some of these studies relied on cross-sectional methods and were not able to establish a causal effect of these policies (Hall, 2017). Moreover, these studies did not account for multilevel factors that may have confounded the association between states with LGBTQ status protections and lower prevalence of LGBTQ bullying (Hall, 2017). One example of a potential confounder at the state level would be an ethos of acceptance and open-mindedness among the population, which would enable lawmakers to enact this type of legislation, while also having a population that is less likely to discriminate against LGBTQ groups.

Lastly, the chronosystem refers to changes or consistencies throughout the life course and historical periods, and these factors relate to both individual level characteristics and environmental level factors (Bronfenbrenner, 1994). The emergence of cyberbullying, for example, could only take place during the current historical period which has been characterized by the widespread adoption of mobile technology and social media use (D.L. Espelage, Rao, & Craven, 2013; National Academies of Sciences & Medicine, 2016).

One shortcoming of the ecological model is its implicit assumption that the outlined systems can accurately categorize all factors associated with bullying (McLeroy, Bibeau, Steckler, & Glanz, 1988). However, this predetermined number of systems can sometimes be a drawback. For example, as the last and broadest system, the macrosystem can end up

"flattening" structural factors that could be further categorized into different ecological levels. For instance, both national antibullying legislation and global trends, such as rising nationalism and xenophobia, could be considered macrosystem factors contributing to bullying victimization. Yet, the first set of factors happens within a country, while the second generally operates between countries. Hence, the limited number of system levels could obstruct further specifications of causal pathways and confer equal significance to hierarchical factors.

In addition, although the ecological model provides a comprehensive framework for investigating bullying, it does not offer a prescriptive list of factors that must be present in empirical analyses. As a result, differing applications of the model might result in a myriad of non-comparable factors, even among studies that aim to investigate the same problem. Therefore, the present dissertation aimed not only to identify the theories applied in conjunction with the Ecological model, but also to specify the concepts drawn from these theories, and where they are located within the model's multiple systems.

3.2. Fundamental Causes of Health Inequality

According to the "Fundamental Causes of Health Inequality" (FCHI) theory, people with higher socioeconomic status have access to more flexible resources (e.g. income, wealth, knowledge) and will allocate them in ways to protect, secure, improve, and ameliorate their health (Diez Roux, 2012; Link & Phelan, 1995; Phelan, Link, & Tehranifar, 2010). In line with Bronfenbrenner's Ecological model, Link and Phelan also recognize that the health benefits of having access to flexible resources operate on many levels (Phelan et al., 2010). At the individual level, flexible resources such as money, education, and social connections can impact health-

related behaviors by determining what information people receive, the quality of food and medications they can afford, and whether they have work benefits such as access to a gym or paid sick-leave. At the contextual-level, these flexible resources can ensure, for example, that individuals live in safe neighborhoods with high-quality schools (Phelan et al., 2010). Moreover, among people with higher SES, even those who do not actively engage in health protective actions may still benefit from their networks in what is called the "spillover effect" (Freese & Lutfey, 2011).

FCHI has been used to explain the persistence of health inequalities in the face of a changing epidemiological context, particularly in high-income countries. In other words, SES has remained a significant factor related to many health inequalities even though nations have moved away from high and volatile morbidity and mortality rates (driven by infectious diseases), to lower and more stable mortality rates attributed mainly to non-communicable diseases (Link & Phelan, 1995).

Other core principles of FCHI theory include an emphasis on connecting distal factors, such as educational achievement and occupation, to both health-related behaviors and outcomes. These connections are often referred to as "metamechanisms" since they comprise a wide range of causal mechanisms (Diez Roux, 2012). In addition, FCHI theory opposes the single-disease study model often used in medicine to investigate disease etiology, claiming it to be a reductionist approach because it fails to consider the contextual complexity by which individuals improve, maintain or harm their health (Link & Phelan, 1995) Instead, FCHI theory emphasizes

scientific inquiry that embraces multiple pathways between distal factors and the health-related outcomes or behaviors of interest (Phelan et al., 2010).

Another important aspect of the empirical application of this theory is its translational focus, meaning that research findings should be used to inform policies and interventions aimed at reducing health disparities (Diez Roux, 2012). Some approaches to apply research findings based on FCHI theory include working directly to reduce resource inequalities and developing policies and programs in which the role of flexible resources is either minimized or accounted for (Phelan et al., 2010).

Two key concepts of the FCHI theory are particularly salient for the investigation of the association between socioeconomic status and adolescent health. The first concept, "latent mechanisms", can guide the selection of health-related outcomes that are most relevant for the adolescent population. "Latent mechanisms" are defined to be part of the web of causal pathways connecting metamechanisms to health outcomes and behaviors (Polonijo & Carpiano, 2013). While, the effect of these mechanisms on overall morbidity and mortality is not immediate, it is likely to be observed later in life (Polonijo & Carpiano, 2013). Applying the FCHI theory lens to the present dissertation, it is possible to classify the outcome of interest (i.e. bullying victimization) as a "latent mechanism". That is because bullying is known to impact the long-term health of its victims (Copeland et al., 2013). Second, in line with FCHI theory, bullying victimization is not linked to a sole health outcome but instead can negatively affect a multitude of health outcomes (e.g. depression, anxiety, headaches, etc.) (Due et al., 2005).

The second concept, "spillover effect", informs the selection and construction of the individual-level socioeconomic status variables in the analyses. The "spillover effect" in FCHI theory suggests that adolescents benefit from a network of parents, educators, and health providers who can assist them with health protective knowledge and resources, even as the adolescents themselves are not actively seeking to improve or protect their health (Polonijo & Carpiano, 2013). For example, adolescents whose parents earn a higher income may have more access to fruits and vegetables (Bere, van Lenthe, Klepp, & Brug, 2008), while those with parents with higher educational achievement may benefit from parental knowledge about disease prevention and adhere to preventative treatments at higher rates (Polonijo & Carpiano, 2013). In the context of adolescent bullying involvement, evidence indicates that parents with higher SES are more likely to engage with the school community (e.g. teachers, principals, and other parents) (Hill et al., 2004). As a result, parents learn about school policies and behavioral expectations and can shape their children's behaviors, which can contribute to lowering the risk of youth's development of social and behavioral problems at school (Hill et al., 2004). Therefore, the concept of "spillover effect" can help explain why high SES adolescents may exhibit better health-related behaviors and outcomes compared to their low SES peers, even though they are not directly earning an income or exercising a high-status occupation (Polonijo & Carpiano, 2013). Existing evidence also provides further support for the use of parental socioeconomic status data in the investigation of the role of SES in youth bullying victimization.

Nevertheless, there are a few limitations in applying FCHI to study adolescent populations. First, this population is not affected by high levels of morbidity and mortality

making it difficult to detect significant socioeconomic differences in these specific outcomes. In addition, measures of peer social status might be more relevant than parental socioeconomic status when studying certain adolescent behaviors and outcomes (Hanson & Chen, 2007).

3.3. Theory of Social Reproduction

The second theory used in this dissertation, Pierre Bourdieu's theory of Social Reproduction, assisted in creating a more complex understanding of individual socioeconomic status, looking beyond economic resources alone. In addition to economic capital, which Bourdieu defined as the resources that can be "immediately and directly converted into money" (P. Bourdieu, 1986, p. 16), the sociologist also identified other dimensions of capital, including cultural and social capital. Bourdieu believed that these immaterial dimensions of capital also played a vital role in reproducing existing social inequalities (P. Bourdieu, 1986).

Cultural capital was defined by Bourdieu as possessing three forms or states; 1) the embodied state (e.g. one's dispositions); 2) the objectified state (e.g. books, objects of art, musical instruments); and 3) the institutionalized state (e.g. educational qualifications) (P. Bourdieu, 1986). Although each of these three forms of cultural capital has its unique characteristics, they all contribute to the categorization and ranking of individuals into social groups and to the reproduction of social inequalities. Moreover, Bourdieu believed higher SES groups controlled and transmitted cultural capital from one generation to the next, helping to maintain and legitimize their social positions and dominance over other forms of capital (Pierre Bourdieu & Clough, 1996).

Bourdieu described social capital as the membership conferred by a social group and the related obligations and benefits that stem from the membership status (P. Bourdieu, 1986; Carpiano, 2006). Some qualities of social capital include the fact that it is relational, and therefore its essence resides in the social organizations of which individuals are members. Social capital can also be material because individuals may convert group membership into resources, by for example borrowing money from a friend or receiving a graduation gift from a family member (Hawe & Shiell, 2000). In contrast to other sociologists who have also theorized about social capital and its defining properties (Hawe & Shiell, 2000), Bourdieu's understanding of social capital emphasized the resource aspect of networks and how they can operate for the benefit of a group (Carpiano, 2006). Moreover, his definition openly acknowledged that social capital can produce exclusion of individuals or groups who are not connected to these networks (Hawe & Shiell, 2000).

Researchers have begun to analyze the relationship between different dimensions of SES and bullying victimization, although evidence is still scarce (Tippett & Wolke, 2014). Existing literature seems to indicate that bullying victimization risk might not be equal across multiple dimensions of SES. For instance, research on bullying victimization among adolescents in the United States found a positive association between bullying victimization and cultural capital, measured as participation in clubs/academic extracurricular activities and music courses (Lehman & A. Dumais, 2016). Furthermore, researchers concluded this association was moderated by gender, as boys who participated in these activities were perceived to be more effeminate and were, therefore, targets of bullying (Lehman & A. Dumais, 2016). In contrast, a

negative association between social capital and bullying victimization has been hypothesized by researchers investigating the association between country income inequality and bullying (Elgar et al., 2009).

3.4. Social Disorganization Theory

Social Disorganization theory originated from Clifford Shaw and Henry Mackay's research on neighborhood crime and juvenile delinquency in Chicago dating back to the early 1900s (Kubrin & Weitzer, 2003). Their findings suggested that crime rates in certain Chicago neighborhoods remained stable, even as the demographic composition of the neighborhood changed (Kubrin & Weitzer, 2003). In addition, the researchers noted that crime was closely related to neighborhood-level characteristics such as rates of unemployment, homeownership, and even infant mortality (Sutherland, 1943). They concluded that crime rates could not be explained solely by the individual characteristics of neighborhood residents, but that some neighborhood characteristics also had a meaningful impact on crime and juvenile delinquency (Kubrin & Weitzer, 2003).

One important aspect of this theory is the hypothesized mediating effects of social ties and social control on the relationship between neighborhood characteristics and crime rates (Kubrin & Weitzer, 2003). For example, in neighborhoods with a higher proportion of homeownership and lower rates of residential mobility, neighbors can form stronger social ties and exert more social control over their environment, by engaging in neighborhood crime watch, reporting suspicious behaviors, and paying close attention to the neighborhood's children

(Kubrin & Weitzer, 2003). These preventive behaviors thus discourage illicit activities in the neighborhood and contribute to lower crime and delinquency rates.

More recently, applied research of Social Disorganization theory has investigated how contextual factors can impact adolescent development and have analyzed the role of social ties and social control on this population (D. Espelage & Swearer, 2009). For instance, researchers have proposed that neighborhoods with low social ties and social control are detrimental to adolescent development because youths are less likely to receive social support and supervision from nonparent figures and might, therefore, engage in risky activities (D. Espelage & Swearer, 2009).

Neighborhoods can also impact youth development by determining which school youths are eligible to attend. Research on the impact of neighborhood on adolescent violence highlighted that the school environment might be one of the most relevant factors contributing to adolescent violent behavior and victimization. For instance, in one study of adolescent residential mobility in Chicago, researchers found no difference in violent behavior and victimization between adolescents that did not change neighborhoods and those who moved but remained within the same school district (Sharkey & Sampson, 2010). On the other hand, those who moved to the outskirts of the city and left the Chicago school district were less likely to have experienced violent victimization or engaged in violent behavior compared to those who did not relocate (Sharkey & Sampson, 2010).

Researchers have also narrowed the application of Social Disorganization Theory to the school context itself and have highlighted some relevant school characteristics that may

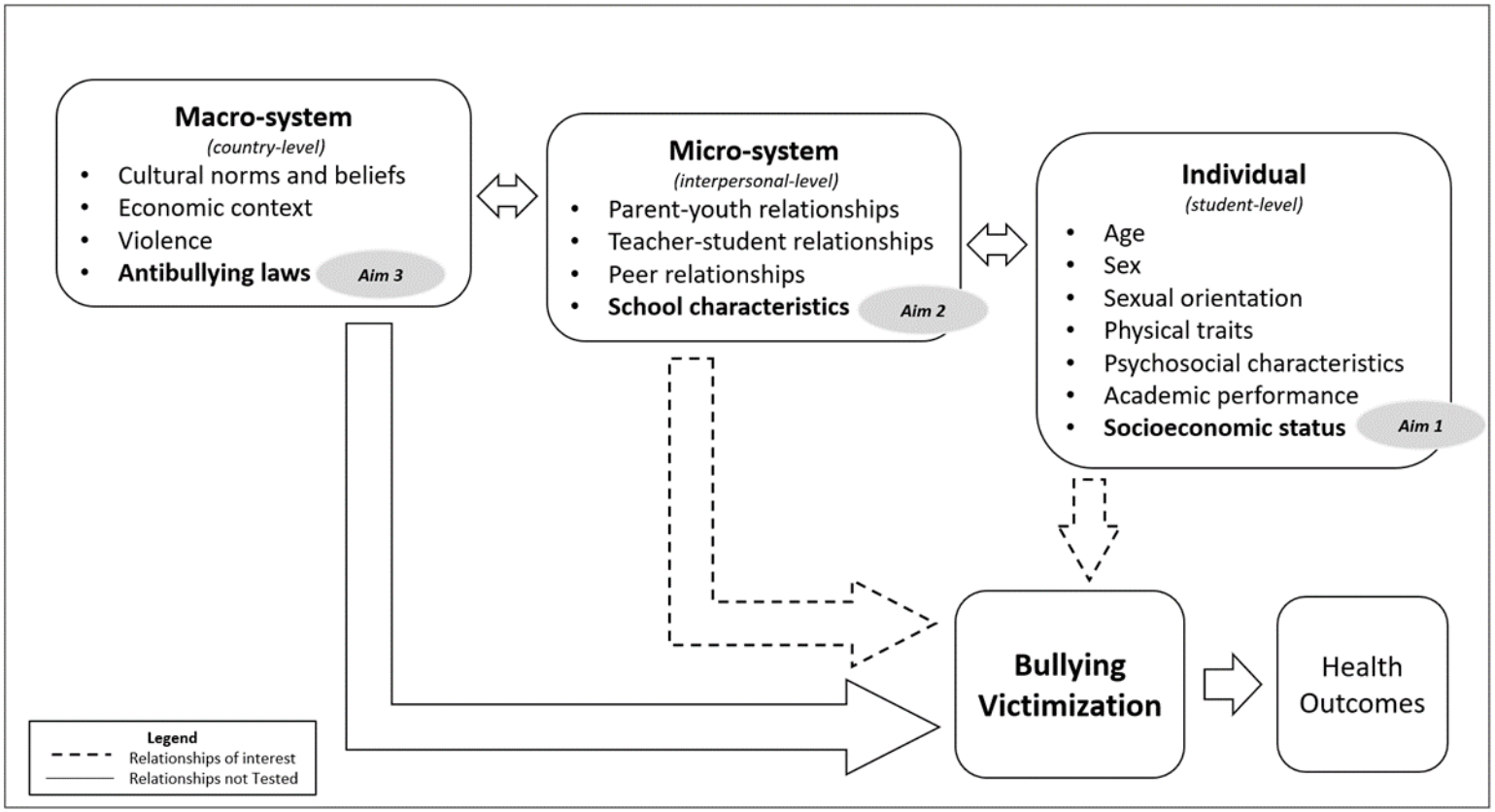
contribute to undesirable school behaviors including bullying. Some of these factors include a concentration of student poverty, large school size, school location (e.g. urban, suburban or rural), high suspension rates, and large student-teacher ratios (Bradshaw et al., 2009). These factors are likely to impact the prevalence of school bullying because they negatively affect the school climate and are associated with higher odds of students endorsing retaliatory attitudes and feeling unsafe at school (Bradshaw et al., 2009).

Social disorganization theory can also be used to further explore one of the key features of school bullying; the fact that aggression scarcely happens as a one-time event and is instead a repetitive occurrence. Studies that have extended social disorganization theory to analyze how neighborhood disadvantage impacts arrests and convictions, showed a negative association between disadvantage and justice outcomes (Regoeczi & Jarvis, 2013). Moreover, researchers found that this association was mediated by neighborhoods' sense of collective efficacy, measured as neighborhood social cohesion and mutual trust (Regoeczi & Jarvis, 2013). In the case of school bullying, students attending disadvantaged schools might be less likely to report aggression due to mistrust or fear of retaliation, which in turn allows bullying aggression to reoccur and to remain widespread.

3.5. Conceptual Model

Together, these theories and framework guided concept selection, mapping, and articulation of how concepts relate to each other and to other factors salient to youth bullying victimization. The three most study-relevant systems of the Ecological model; macro, micro, and individual, are illustrated and understood to be nested within each other [Figure 3.1.].

Figure 3.1 Conceptual Model- Bullying Victimization and Socioeconomic Factors



It is important to note that the concepts included in the model are not exhaustive as many other factors can impact bullying and socioeconomic status (e.g. neighborhood, child-parent relationships, etc.). However, those were not included in the figure to make the depiction of the selected concepts clearer. The arrows in the model symbolize the key relationships of interest. Dashed arrows represent the associations that were analyzed in the present papers. Bidirectional arrows underscore the interplay between concepts, as opposed to a unidirectional causal mechanism. Moreover, the solid arrows depict the associations that were not investigated, but that are still relevant to the theories in this model and to the associations between bullying victimization and socioeconomic factors.

Out of all these theories, Bronfenbrenner's Ecological model has been the most used in the study of bullying, and as the large body of evidence suggests, bullying victimization is not simply determined by individual characteristics, but instead is, directly and indirectly, related to a myriad of factors at various system-levels (Hong & Espelage, 2012).

By bringing in the Fundamental Cause of Health Inequalities (FCHI) theory it is possible to narrow this complex web of factors to those specific to youths' socioeconomic conditions. Through the lens of FCHI theory, bullying victimization can be understood as a negative health-related outcome, and people with higher socioeconomic status will use their flexible resources to avoid and/or mitigate its effects. For instance, parents with higher SES have more control over the school context (illustrated in Figure 1 as part of the microsystem) since they can use their financial resources to live in more affluent neighborhoods and select safer schools (Phelan et al., 2010). Higher SES parents are also more likely to be engaged in school activities, to shape their

children's behaviors to match the school's expectations and to advocate on their children's behalf if the need arises (Hill et al., 2004). Thus, through this "spillover effect", higher SES youths might be less likely to be the victims of bullying.

FCHI theory also contests the single-disease approach commonly used in the field of public health and supports the idea that each health outcome is the result of a complex number of factors and that each of these factors can also affect various other health outcomes (Diez Roux, 2012). In line with this thinking, current evidence suggests youth bullying victimization is not tied to a single adverse health outcome but instead can impact many aspects of youths' mental and physical health, and even negatively affect their school attendance and performance (UNESCO, 2017a).

FCHI theory can also help to articulate how bullying victimization can support the reproduction of health inequalities. Higher prevalence of bullying victimization among low SES youths can reinforce existing health disparities because bullied students are more likely to drop out of school or suffer academically (Delprato et al., 2017). The resulting poor educational achievement and low income may make these youths more vulnerable to other negative health problems later in life, such as obesity and other chronic diseases (Dinsa, Goryakin, Fumagalli, & Suhrcke, 2012).

It is also important to reiterate that although most associations depicted in the conceptual model allude to a unidirectional association, some of these associations might be bidirectional. Moreover, associations between factors at one level of the model might impact factors at other levels. For example, while the association between bullying victimization and individuals' health

outcomes takes place at the individual level, it can impact the school context at the microsystem level. That is because bullied students who end up developing anxiety, depression, or substance use problems, may contribute to a more negative school climate thus reinforcing the bullying victimization cycle (Quinn, Fitzpatrick, Bussey, Hides, & Chan, 2016).

Bourdieu's theory of Social Reproduction is used to elucidate different dimensions of the SES concept, located within the individual system of the conceptual model. Akin to FCHI theory, Bourdieu's theory recognizes that SES is a multidimensional concept grounded on individuals' access to various types of flexible resources. Although not illustrated in Figure 1 for clarity, SES according to Bourdieu, is comprised of economic, social, and cultural capital (P. Bourdieu, 1986). Research on the association between SES and bullying has yet to unpack how each of these aspects relate to bullying victimization, and whether all of them act as protective factors against bullying or not. Yet, emerging evidence suggests the association might not be equal across different types of capital, and that, in fact, cultural capital may even increase the odds of bullying victimization among boys (Lehman & Dumais, 2016).

Parallel to Bourdieu's theory of Social Reproduction, Social Disorganization theory helps to articulate how broader socioeconomic factors can influence violence and delinquency patterns within any specific environment (Kubrin & Weitzer, 2003).

First, Social Disorganization theory focuses on environmental characteristics associated with violence and delinquency According to this theory, violence does not arise from individual traits but from the social disconnect brought about by community poverty, disenfranchisement, and instability (Kubrin & Weitzer, 2003). Applied to the school context, social disorganization

research has highlighted some relevant school characteristics associated with bullying, including a concentration of student poverty, large school size, school location (e.g. urban, suburban or rural), high suspension rates, and large student-teacher ratios (Bradshaw et al., 2009). These factors are likely to impact the prevalence of school bullying because they negatively affect the school climate and are associated with higher odds of students endorsing retaliatory attitudes and feeling unsafe at school.

The multisystem framework of the Ecological model also allows me to identify more distal factors related to bullying victimization, which in the present conceptual model include the economic context, the prevalence of violence, antibullying legislation, and other country-specific contextual factors (e.g. social and cultural norms). Within the economic context, socioeconomic inequality is intrinsic to the understanding of individual socioeconomic status, since this concept is a direct reflection of how resources are allocated within society. Both the theory of Social Reproduction and FCHI theory are concerned with the reproduction of socioeconomic inequality (shown inside the conceptual model's macrosystem), and its impact on individuals. With regard to bullying, high rates of country-level inequality have been linked to a higher prevalence of bullying victimization and physical fighting among adolescent students (Elgar et al., 2009). Moreover, researchers have also noted a significant association between early childhood exposure to income inequality and bullying victimization during adolescence (Elgar et al., 2019). One of the reasons posed is that inequality's ties to violence can contribute to an environment of increased distrust and diminished social capital, where adolescents feel disconnected from their

neighborhoods and peer-networks, and are thus at higher risk of suffering from bullying victimization (Elgar et al., 2009).

Lastly, country and anti-bullying legislation are also highlighted as two distal factors influencing bullying victimization. Bullying victimization prevalence is known to vary widely from country to country, possibly because of each country's unique combination of cultural and social norms, inequality, and violence prevalence (Elgar, McKinnon, et al., 2015). Antibullying legislation is another macro-level factor that can impact school bullying victimization through different pathways. For example, the existence of antibullying laws can signal to society what types of behaviors are deemed unacceptable (National Academies of Sciences & Medicine, 2016). In addition, antibullying laws may contain provisions, such as promoting tolerance and training school staff, that can improve the school context and therefore reduce the prevalence of bullying in schools (National Academies of Sciences & Medicine, 2016).

CHAPTER IV: DATA SOURCES

This dissertation is comprised of three papers corresponding to each of the three aims discussed under "Study Aims, Research Questions, and Hypotheses" section in chapter one. The first paper (aim one) consists of an individual-level, cross-sectional analysis of data from the Program for International Student Assessment (PISA). The second paper (aim two) also uses PISA data and employs a multilevel analysis approach to investigate both individual and school-level factors related to bullying victimization. Finally, the last paper (aim three) consists of a descriptive analysis of a legal dataset that was created through an empirical content analysis of existing school-based antibullying legislation in the LAC region.

4.1. Data Source: Program for International Student Assessment (PISA)

The Organization for Economic Cooperation and Development (OECD) has administered the Program for International Student Assessment (PISA) triennially since 2000 to evaluate education systems across several countries worldwide (OECD, 2017b). The rationale for the test's content is informed by a few core tenets such as using innovative approaches to measure students' skills and to assess their ability to apply academic knowledge under a variety of life situations. PISA topics and questionnaires are also designed to inform and shape national education policy by identifying the profile of high-performing students and schools and highlighting individual and institutional barriers to achievement. In addition, the test aims to measure academic and life skills that can be used in the labor market. As a way to achieve this aim, the test prioritizes knowledge and skills acquired towards the end of compulsory schooling (around the age of 15-years-old), as adolescents prepare to join the labor force or pursue a higher

education degree (OECD, 2015a). Lastly, PISA strives to provide comparable data across a wide range of countries by ensuring that test contents have cultural and linguistic breadth, and by partnering with local experts from participating countries throughout the testing process (OECD, 2015a).

In 2015, PISA included 35 OECD member countries plus 37 partner countries and economies. Details regarding the number of participating students and schools for each country are presented in appendix table 4.1**.** A computer-based test was used in 57 countries and economies, while 15 countries and economies applied a paper-based test due to a lack of resources to implement the computer format (OECD, 2017c). In total, the test was comprised of 72 participating countries and economies and included approximately 540,000 students, representing 29 million 15-year-olds around the world (OECD, 2017c).

Each PISA cycle measures students' in-depth knowledge of one subject, and out of the two hours allotted for the test, almost half of test time is reserved for that subject. Similar to 2006, PISA 2015 was dedicated to measuring adolescent students' scientific knowledge. Examples of real-life situations, such as how to identify symptoms of dehydration, informed different sets of open-ended and multiple-choice questions. In addition to the science section, the test also included brief assessments of student knowledge in reading, mathematics, collaborative problem solving, and had an optional section in financial literacy.

PISA also collected context information from students and principals. In addition, countries and economies could opt to administer questionnaires for parents and teachers, with the latter being first introduced in the 2015 cycle. Context questions were grouped into three

categories; student and school background (e.g. student gender, and school location), processes (e.g. school governance system, programs offered at the school, and grade repetition) and non-cognitive outcomes (e.g. student well-being, and achievement motivation) (OECD, 2017c).

Students had about 35 minutes to complete their context questionnaire (OECD, 2017c). Questions covered topics such as students' assessments about their lives inside and outside school, how students spent their time at school, different aspects related to learning science both at school and in general, and family and household characteristics. The section on students' life experiences included questions on overall life satisfaction and job aspiration, among others. This section also contained multiple question items on different types of bullying victimization (e.g. physical, relational, etc.), which were first introduced during this test cycle. The section on student's family and household characteristics contained around twenty questions on topics such as maternal and paternal education, household possessions, student and parental country of origin, and languages spoken at home. Appendix tables 4.2 through 4.4 contain the student SES-related questions used in the subsequent analyses.

Principals provided information about the school context, and their questionnaire took about one hour to complete. The questionnaire was divided into six categories; school background, management processes, teaching staff, assessment and evaluation practices, targeted student groups, and school climate (OECD, 2017c). School background questions collected information about the surrounding community, the size of the school, teacher-student ratio, and available student resources (e.g. computers and science laboratory). Questions under the management processes category assessed principals' practices regarding managing and

mentoring teachers and establishing educational guidelines for the schools. The evaluation practices category included questions on both internal and external evaluation tools employed by the schools. The targeted student groups category contained questions about students with special needs and included one question on principals' estimate of the percentage of students in the school who came from socioeconomically disadvantaged homes. Lastly, the school climate category assessed principals' perceptions of disruptive behaviors from both teachers and students. A more detailed description of the school principal questions used in this dissertation is included in appendix tables 4.5-4.9 of this chapter.

After data collection, the PISA research team used the student and school context questions to create multiple indexes measuring latent concepts such as student SES, and principal educational leadership. PISA researchers used both Item Response Theory (IRT) with a generalized partial credit model and Principal Component Analysis (PCA) to create these indexes. Some examples of indexes generated with IRT at the student level were *sense of belonging to school* and *enjoyment of cooperation*, and at the school level were t*eacher-related factors affecting the school climate* and *shortage of educational materials*. A few SES-related indexes were also calculated with IRT, including *home possessions, family wealth*, and *cultural possessions.* These latent concepts were scaled to have a mean of zero and a standard deviation of one across OECD countries (with equally weighted countries) (OECD, 2017c).

Multiple analyses were undertaken to assess construct validity of these indexes. For instance, internal consistency was assessed for each country, and each index by calculating Cronbach's alpha coefficients. Cross-country reliability was another important goal. PISA

conducted analyses of invariance of item parameters across countries and questionnaire languages within one country (OECD, 2017c). The resulting statistic, the root mean square deviance (RMSD), compared the fit of item parameters for a group versus the international standard. Values close to zero indicated that the international item parameters described the response for a group very well. A value of 0.3 was set as the cut-off point and larger values indicated that the international item parameters were not a good fit for that particular group (OECD, 2017c). Appendix table 4.10 includes Cronbach's alpha coefficients for each country in the LAC region, and each index of interest.

In addition to IRT, PCA methods were used to calculate a composite score of student socioeconomic status. Three components provided the basis for the calculation of the SES index: parental education, highest parental occupation, and home possessions (the last one calculated with IRT). Before conducting PCA, data imputation with a random component was used in cases where students had no information for one out of the three components (OECD, 2017c). Students with two or more missing components were assigned as missing the SES value. After the imputation procedure, the three components were standardized for all OECD and partner countries and economies and had an OECD mean of zero and standard deviation of one (OECD, 2017c). These standardized components were then used in the PCA to generate the SES index. PISA measured the consistency of the SES index across countries by reviewing factor loadings and reliability scores (measured with Cronbach's Alpha) for all participating countries and economies. Appendix table 4.11 includes factor loading for each of the three components, and Cronbach's alpha coefficients for each country in the LAC region.

4.1.1 PISA's SES Measures; Adoption, Validity, and Reliability

PISA's publicly available datasets contain a series of socioeconomic indexes calculated by the OECD based on PISA's student background questionnaire. These indexes include the index of economic, social, and cultural status (ESCS), home possessions, family wealth, cultural possessions at home, and home educational resources to name a few. PISA's internal checks for validity and cross-country reliability, outside studies have indicated that PISA's socioeconomic indices are theoretically sound (Caro, Sandoval-Hernández, & Lüdtke, 2014), and a growing number of peer-reviewed articles have used PISA as a secondary data source (Hopfenbeck et al., 2018).

One systematic review focused on PISA's cognitive domains (i.e. reading, math, and science) found the number of published articles grew from about four in 2000 to more than one hundred in 2014, totaling 654 original articles published during this time (Hopfenbeck et al., 2018). Most articles were published in journals in the field of education (229), followed by economics (59), while only two articles were published in health-related journals. The review also highlighted that one common topic of inquiry was socioeconomic inequality and a substantial number of articles used PISA's SES measures (109) as a central part of the analysis, while many more used these measures as control variables. Moreover, many studies analyzed aspects of inequality at various levels (e.g. student, school, and country) (Hopfenbeck et al., 2018).

Some of the potential reasons for the growing use of PISA's SES data are first, because PISA has created a comprehensive, theory-based SES index, and second because PISA has

gathered socioeconomic data since its first inception in 2000 allowing researchers to analyze trends over time (OECD, 2017c). This index encompasses multiple dimensions of the SES concept (e.g. economic and cultural), and the scientific community has praised PISA's efforts to create a stable and comparable indicator of youth SES (Rutkowski & Rutkowski, 2013). Yet, limitations can arise from the need to balance indexes that are both theoretically driven and cross-country comparable. For instance, one analysis of 2009 PISA used exploratory equation modeling to evaluate PISA's operationalization of the theory-based concepts of social, cultural, and economic capital (Caro et al., 2014). The study compared PISA's indexes against the influential theories from Bourdieu, Bernstein, and Coleman, and concluded PISA's theory-based approach was rigorous and sound.

In contrast, one study analyzed the cross-country reliability of the SES indexes using confirmatory factor analysis and classical item statistics and concluded that some indexes created by PISA researchers appeared to be reliable, others were less so (Rutkowski & Rutkowski, 2013). The study concluded that more context-specific variables should be included in the questionnaire going forward. These results also indicate that the cross-country reliability of the measures used by PISA may depend on the type of analysis used to obtain the indexes and measure their reliability.

Guided by the theoretical framework outlined in chapter 4, the present analyses focused on three of PISA's SES indexes; ESCS, family wealth, and cultural possessions. The ESCS index has three key components: parental education, highest parental occupation, and household possessions. The last one was calculated with Item Response Theory (IRT) and included both

questions on family wealth and cultural possessions. Before conducting PCA, data imputation with a random component was used in cases where students had no information for one out of the three components (OECD, 2017c). Students with two or more missing components were assigned as missing the SES value. After the imputation procedure, the three components were standardized for all OECD and partner countries, and had an OECD mean of zero and standard deviation of one (OECD, 2017c). These standardized components were then used in the PCA to generate the SES index. This index is well-known for being detailed and theory-based, and for encompassing multiple dimensions of SES (OECD, 2016).

The family wealth and cultural possessions indexes were calculated with IRT, and were also standardized to have an OECD mean of zero and standard deviation of one (OECD, 2017c). PISA questions used to derive each of the three indexes (i.e. family wealth, cultural possessions, and household possessions) are shown below [Table 4.1]:

Table 4. 1. SES-related questions. PISA 2015

Questions	Answers	Family Wealth	Cultural Possessions	Household Possessions
Which of the following are in your home? *A desk to study at *A quiet place to study *A computer you can use for schoolwork * Educational software * Books to help with your schoolwork * Technical reference books *A dictionary	Yes No			X
How many books are there in your home?	0-10 books 11-25 books 26-100 books 101-200 books 201-500 books More than 500 books			X

Table 4. 1. SES-related questions. PISA 2015				
Questions	**Answers**	**Family Wealth**	**Cultural Possessions**	**Household Possessions**
Which of the following are in your home? * Classic literature (e.g. Shakespeare) * Books of poetry * Works of art (e.g. paintings)	Yes No		X	X
How many of these are there at your home? *Books on art, music, or design *Musical instruments (e.g. guitar, piano)	None One Two Three or more		X	X
Which of the following are in your home? *A room of your own *A link to the Internet	Yes No	X		X
Country-specific wealth item 1	Country-specific measures listed in appendix table 4.4	X		X
Country-specific wealth item 2		X		X
Country-specific wealth item 3		X		X
How many of these are there at your home? * Televisions * Cars * Rooms with a bath or shower * Cell phones with Internet access * Computers * Tablet computers * E-book readers	None One Two Three or more	X		X

4.1.2 PISA's Sample of Countries in Latin America and the Caribbean

Ten countries in Latin America and the Caribbean participated in the 2015 PISA: Argentina, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Mexico, Peru, Trinidad and Tobago, and Uruguay. However, the PISA questionnaire in Argentina and Trinidad and Tobago did not include questions on bullying victimization and therefore these two countries were not included in the analyses. The eight remaining countries totaled 74,196 students across

2,615 schools. All eight LAC countries implemented the computer-based test. Together, these eight countries covered the Northern, Central, Caribbean, and Southern areas of the LAC region, and included a wide range of socioeconomic and demographic contexts

PISA tests used in LAC countries were originally developed in English and French and their contents were thoroughly reviewed by representatives from all participating countries and economies prior to the translation process. PISA used a double-translation design where the original test was translated into the target language by two independent translators and these versions were reconciled by a third translator. According to PISA, this translation approach allowed translators to spot and resolve discrepancies more efficiently and precisely (OECD, 2017c). All translators were trained on PISA's translation guidelines, and final versions were independently verified by professionals with native command of the target language, and extensive experience with English translations (OECD, 2017a). Among the LAC countries, tests were applied in Portuguese in Brazil and in Spanish in the remaining seven countries.

Schools provided the sampling-units for all participating LAC countries except Colombia, in which the sampling-unit was the physical location ("sede"), given unique features of this country's educational system (OECD, 2017c). Both implicit and explicit stratification methods were used to select participating schools, and each country had unique stratification parameters to account for the local context [Appendix Table 4.12]. Explicit stratification entailed dividing schools into strata (e.g. different states or regions of a country) and then selecting an independent sample from each stratum (OECD, 2017c). Subsequently, implicit stratification steps helped to reach a proper sample allocation of schools across all groups within the explicit

strata. Implicit stratification consisted of sorting, rather than grouping, schools within each unique stratum according to a selected set of characteristics such as levels of funding and gender composition (OECD, 2017c).

After the school sample was identified, the following step was to select students within each school. The schools that agreed to participate in the 2015 PISA had to submit a list of all eligible students from which the sample of students was drawn from. The lists were compiled either at the national, state, or local level and were comprised of all 15-year-old students in grades 7 or higher in participating schools. National PISA program managers selected students using KeyQuest, a sampling software, and used systematic sampling (student lists were sorted by grade and gender) to draw an equal probability sample (OECD, 2017c). Program managers then returned the lists to participating schools, which were later used to identify the selected students during test day.

4.2. Data Source: Legal Surveillance Data

Legal interventions have been central to the solution or alleviation of many public health concerns (National Academies of Sciences & Medicine, 2016). For instance, traffic laws setting speed limits and requiring seat belt use have reduced motor vehicle accidents, while laws limiting employees' exposure to toxic chemicals have contributed to safer workplace conditions (National Academies of Sciences & Medicine, 2016). Moreover, the existence of a law can signal to society what behaviors are appropriate and what are inappropriate or undesirable (National Academies of Sciences & Medicine, 2016).

Legislation is a term used to refer to a group of laws on a topic (Oxford Dictionaries). Governments around the world have begun to adopt school-based antibullying legislation to address the widespread prevalence of youth bullying (Hall, 2017; Hatzenbuehler et al., 2015). This type of intervention can be of great value given its potential to shape the behaviors not only of students, but also of teachers, school administrators, parents and the community in general (Hall, 2017). In addition, bullying prevention at the legislative level is considered an "upstream" intervention by public health standards, and it can promote broad changes in norms and values by making school environments more tolerant and inclusive. In the U.S. alone, 49 out of 50 states have enacted antibullying laws, and many other countries such as South Korea, Australia and Chile have also followed suit (Hatzenbuehler et al., 2015; UNESCO, 2017a). State legislation in the U.S. has received significant attention from researchers who have worked to compile antibullying laws, and to synthesize and compare them (Hatzenbuehler et al., 2015). In contrast, antibullying legislation in other parts of the world has received less attention. Moreover, there have been few studies evaluating the effectiveness of antibullying laws, and as a result there are no set of evidence-based standards when it comes to this type of legislation (Hatzenbuehler et al., 2015).

One way to compile, monitor and analyze antibullying legislation is to create a legal dataset that can be used to synthesize laws from multiple countries. The process of creating a legal dataset draws from both quantitative and qualitative research methods to extract and quantify information from legal texts (Burris, 2014). Legal datasets have been used to monitor and evaluate legislation covering a wide range of topics. For instance, in one multi-country

study, a legal dataset was created to analyze laws on minimum marriage age and exceptions allowing for early marriage. The resulting dataset was then used to establish which countries met international human rights agreements, and which were failing to prevent underage marriage (Arthur et al., 2018). In addition, legal datasets on national laws regarding minimum wage standards have been used to evaluate the impact of minimum wages on children's nutritional status (Ponce et al., 2017). Finally, findings from these analyses have been used to inform advocacy work (Burris, 2014) from groups supporting legislative changes in a wide range of topics such as parental leave and sexual harassment in the workplace (WORLD Policy Analysis Center, 2018).

To address this dissertation's third aim, a legal dataset using school-based, nationally enacted legislation was created. In brief, the creation of this dataset included scoping legislative material using primary sources in the local language, and secondary sources including international repositories of country legislation such as the PLANIPOLIS portal, a repository of national education laws. In addition, coding of legislation and descriptive analysis of the findings were also carried out. More details on the sourcing and analysis processes are covered in the "Methods" section of chapter 7.

Narrowing antibullying laws to the school context resulted in a more consistent cross-country comparison, and better targeting of the population of interest (i.e. adolescents). First, school-based legislation allowed for a more direct comparison of youth-focused antibullying laws in the LAC region, where some countries, such as Chile, have also enacted laws to address bullying in other contexts including the workplace (D'Albora, Lázaro, Sandoval, & Becker,

2012). Legislation regulating bullying interactions in the work environment was not well suited for the current analysis, since youths would represent just a small fraction of the population targeted. In addition, youths spend a large amount of their time at school, thus school-based antibullying laws were likely to cover a significant proportion of bullying experiences among people in this age group.

4.3 Appendices: Tables

Appendix Table 4.1 Participating Countries and Economics. PISA 2015							
	Country	**Students (N)**	**Schools (N)**				
OECD Members	Australia	14,530	758	**Partner Countries/Economies**	Albania	5,215	230
	Austria	7,007	269		Algeria	5,519	161
	Belgium	9,651	288		Argentina	6,349	234
	Canada	20,058	759		Brazil	23,141	841
	Chile	7,053	227		B-S-J-G (China)	9,841	268
	Czech Republic	6,894	344		Bulgaria	5,928	180
	Denmark	7,161	333		Colombia	11,795	372
	Estonia	5,587	206		Costa Rica	6,866	205
	Finland	5,882	168		Croatia	5,809	160
	France	6,108	252		Cyprus	5,571	126
	Germany	6,504	256		Dominican Republic	4,740	194
	Greece	5,532	211		Former Republic of Yugoslavia	5,324	106
	Hungary	5,658	245		Georgia	5,316	262
	Iceland	3,371	124		Hong Kong (China)	5,359	138
	Ireland	5,741	167		Indonesia	6,513	236
	Israel	6,598	173		Jordan	7,267	250
	Italy	11,583	474		Kazakhstan	7,841	232
	Japan	6,647	198		Kosovo	4,826	224
	South Korea	5,581	168		Lebanon	4,546	270
	Latvia	4,869	250		Lithuania	6,525	311
	Luxembourg	5,299	44		Macao (China)	4,476	45
	Mexico	7,568	275		Malaysia	8,861	225
	Netherlands	5,385	187		Malta	3,634	59
	New Zealand	4,520	183		Moldova	5,325	229
	Norway	5,456	229		Montenegro	5,665	64
	Poland	4,478	169		Peru	6,971	281
	Portugal	7,325	246		Qatar	12,083	167
	Slovak Republic	6,350	290		Romania	4,876	182
	Slovenia	6,406	333		Russia	6,036	10
	Spain	6,736	201		Singapore	6,115	77
	Sweden	5,458	202		Chinese Taipei	7,708	14
	Switzerland	5,860	227		Thailand	8,249	73
	Turkey	5,895	187		Trinidad and Tobago	4,692	49
	United Kingdom	14,157	288		Tunisia	5,375	165
	United States	5,712	177		United Arab Emirates	14,167	473
					Uruguay	6,062	220
					Viet Nam	5,826	188
** B-S-J-G (China) data represent the regions of Beijing, Shanghai, Jiangsu, and Guangdong*							

Student and school context questions, PISA 2015.

Student Questions

The index "Overall SES" was a combination of ;1) parental education; 2) highest parental occupation; and 3) household possessions. Separate sub-indexes were also created to analyze different aspects of household possessions such as family wealth and cultural possessions.

Parental Education

Appendix Table 4.2 Parental Education Questions. PISA 2015.	
Question	**Answers***
What is the highest level of schooling completed by your mother?	ISCED level 3A ISCED level 3B, 3C ISCED level 2 ISCED level 1 She did not complete ISCED level 1
Does your mother have any of the following qualifications?	ISCED level 6 ISCED level 5A ISCED level 5B ISCED level 4
What is the highest level of schooling completed by your father?	ISCED level 3A ISCED level 3B, 3C ISCED level 2 ISCED level 1 She did not complete ISCED level 1
Does your father have any of the following qualifications?	ISCED level 6 ISCED level 5A ISCED level 5B ISCED level 4
*Questionnaires were adapted for each country so that the adolescents were given context-specific answer options	

ISCED refers to the International Standard Classification of Education, which is managed by the United Nations International Family of Economic and Social Classifications. This system of classification for education, allows for cross-country comparison of educational achievement. The table below shows the equivalent education for each level(OECD, 2017c).

Appendix Table 4.3 ISCED Level Description. PISA 2015.	
ISCED Level	**Education Equivalent To**
0	Pre-primary education
1	Primary education
2	Lower secondary education
3 A	Upper secondary education providing access to ISCED 5A and 5B programs and/or ISCED Level 4
3 B or C	Upper secondary education providing direct access to the labor market or to ISCED 5B programs
4	Non-tertiary post-secondary
5A	University level tertiary education
5B	Non-university tertiary education
6	Advanced research programs

Parental Occupation

1. What is your mother's main job (e.g. schoolteacher, kitchen-hand, sales manager)? Please type in the job title.
2. What does your mother do in her main job (e.g. teaches high school students, helps the cook prepare meals in a restaurant, manages a sales team)? Please use a sentence to describe the kind of work she does or did in that job.
3. What is your father's main job (e.g. schoolteacher, kitchen-hand, sales manager)? Please type in the job title.
4. What does your father do in his main job (e.g. teaches high school students, helps the cook prepare meals in a restaurant, manages a sales team)? Please use a sentence to describe the kind of work he does or did in that job.

Household Possessions

Appendix Table 4.4 Country Specific Measure of Wealth. PISA 2015				
	Item 1	**Item 2**	**Item 3**	**Answers**
Brazil	Blu-Ray	Videogame	An iPod	Yes No
Chile	A second home (holiday or weekend)	Digital video camera	Microwave	Yes No
Colombia	Digital camera	N/A	Encyclopedia	Yes No
Costa Rica	Cable TV service (Sky, Cable Tica, Amnet, etc.)	A video game console	A home theater system	Yes No
Dominican Republic	Microwave	Air conditioner	Decoration articles	Yes No
Mexico	Blu-ray	Telephone line	Microwave	Yes No
Peru	Video games (PlayStation, Nintendo, Wii, etc.)	Refrigerator	Clothes washing machine.	Yes No
Uruguay	A dishwasher	Refrigerator with freezer	Notebook PC or laptop (not including Ceibal)	Yes No

School Context

Appendix Table 4.5 Class size Question. PISA 2015	
Question	**Answers**
What is the average size of classes in in your school?	15 students or fewer 16-20 students 21-25 students 26-30 students 31-35 students 36-40 students 41-45 students 46-50 students More than 50 students

(School Size) 1. As of February 1, 2015, what was the total school enrolment (number of students)?

Number of boys: _____

Number of girls: _____

Appendix Table 4.6 School Type Question. PISA 2015	
Question	**Answers**
Is your school a public or a private school?	A public school (This is a school managed directly or indirectly by a public education authority, government agency, or governing board appointed by government or elected by public franchise.) A private school (This is a school managed directly or indirectly by a non-government organization, e.g. a church, trade union, business, or other private institution.)

(School Type) 1. About what percentage of your total funding for a typical school year comes from the following sources?

Government (includes departments, local, regional, state and national) % _____

Student fees or school charges paid by parents % _____

Benefactors, donations, bequests, sponsorships, parent fundraising % _____

Appendix Table 4.7 School Location. PISA 2015	
Question	**Answers**
Which of the following definitions best describes the community in which your school is located?	• A village, hamlet or rural area (fewer than 3 000 people) • A small town (3 000 to about 15 000 people) • A town (15 000 to about 100 000 people) • A city (100 000 to about 1 000 000 people) • A large city (with over 1 000 000 people)

Appendix Table 4.8 Questions on Student-Related Factors Affecting School Climate. PISA 2015	
Question **In your school, to what extent is the learning of students hindered by the following phenomena?**	**Answers**
Student truancy	Not at Very all Very Little To some extent A lot
Students skipping classes	Not at Very all Very Little To some extent A lot
Students lacking respect for teachers	Not at Very all Very Little

Appendix Table 4.8 Questions on Student-Related Factors Affecting School Climate. PISA 2015	
Question **In your school, to what extent is the learning of students hindered by the following phenomena?**	**Answers**
	To some extent A lot
Student use of alcohol or illegal drugs	Not at Very all Very Little To some extent A lot
Students intimidating or bullying other students	Not at Very all Very Little To some extent A lot

Appendix Table 4.9 Questions on Teacher-Related Factors Affecting School Climate. PISA 2015	
Question-In your school, to what extent is the learning of students hindered by the following phenomena?	**Answers**
Teachers not meeting individual students' needs	Not at Very all Very Little To some extent A lot
Teacher absenteeism	Not at Very all Very Little To some extent A lot
Staff resisting change	Not at Very all Very Little To some extent A lot
Teachers being too strict with students	Not at Very all Very Little To some extent A lot
Teachers not being well prepared for classes	Not at Very all Very Little To some extent A lot

Reliability and Factor Loadings

Reliability (Cronbach's Alpha) obtained through Item Response Theory (IRT) and reliability (Cronbach's Alpha) and factor loadings obtained through Principal Component Analysis (PCA) for SES-related scales in countries in the LAC region, PISA 2015.

Appendix Table 4.10 Reliability for IRT Generated Indexes. PISA 2015			
Country	**Home Possessions**	**Cultural Possessions**	**Family Wealth**
Chile	0.81	0.57	0.75
Mexico	0.82	0.60	0.85
Brazil	0.83	0.52	0.79
Colombia	0.86	0.58	0.82
Costa Rica	0.86	0.60	0.81
Dominican Republic	0.86	0.56	0.84
Peru	0.87	0.51	0.85
Uruguay	0.83	0.63	0.75

Appendix Table 4.11 Factor Loadings and Reliability from PCA Calculations of Overall SES. PISA 2015				
Country	**Highest Parental Occupation**	**Parental Education**	**Home Possessions**	**Reliability**
Chile	0.85	0.84	0.77	0.76
Mexico	0.85	0.85	0.80	0.77
Brazil	0.82	0.80	0.78	0.71
Colombia	0.81	0.78	0.80	0.70
Costa Rica	0.82	0.79	0.82	0.73
Dominican Republic	0.79	0.77	0.75	0.66
Peru	0.86	0.82	0.81	0.76
Uruguay	0.83	0.82	0.77	0.73

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Appendix Table 4.12 Sample Size and Stratification Variables. PISA 2015				
Country	**Students (N)**	**Schools (N)**	**Explicit Strata**	**Implicit Strata**
Brazil	23,141	841	• State • Grade • Certainty selections	• Funding • HDI quintiles • ISCED level • Capital/Interior • Urbanization
Chile	7,053	227	• Funding • School level School track • Certainty selections	• National test score level • Percentage of females • Urbanization • Region
Colombia	11,795	372	• Region • Grade • Main shift • Certainty selections	• Urbanization • Funding • Weekend school or not • School gender composition • ISCED program orientation
Costa Rica	6,866	205	• School type • Certainty selections	• School track Urbanization • Shift • Region • ISCED level
Dominican Republic	4,740	194	• Funding • Urbanization • ISCED level • Grade • Certainty selections	• Shift • School size • Program
Mexico	7,568	275	• School level • School size	• School program • Funding • Urbanization
Peru	6,971	281	• Funding • Urbanization • Grade	• Region • School gender composition • School type
Uruguay	6,062	220	• Institutional sector • School level • Certainty selection	• Location/Urbanization • School gender composition
Total	74,196	2,615		
HDI: Human Development Index ISCED: International Standard Classification of Education Funding				

CHAPTER V: BULLYING AND SOCIOECONOMIC STATUS AMONG ADOLESCENT STUDENTS IN LATIN AMERICA AND THE CARIBBEAN

5.1 Introduction

Bullying is defined as recurrent and unprovoked aggression among peers and is characterized by a perceived power imbalance between aggressor and victim (Olweus, 1994). This type of peer aggression can take place either in person or online and be direct (e.g. physical and verbal bullying) or indirect (e.g. relational bullying) (Hong & Espelage, 2012; Y. S. Kim & Leventhal, 2008; Wang, Iannotti, & Luk, 2012). School-based surveys indicate that about 1 in 3 adolescent students report being bullied at least one time over the course of a school term (Frank J. Elgar et al., 2019), although these estimates can vary depending on the local context and the measurement used (Vivolo-Kantor, Martell, Holland, & Westby, 2014).

Extensive research has shown that school bullying correlates with a variety of factors that can be harmful to adolescent health including mental health disorders, poor academic performance, social isolation, low life satisfaction and suicidal ideation (Cornell, Gregory, Huang, & Fan, 2013; Hong & Espelage, 2012; Y. S. Kim & Leventhal, 2008; Kljakovic & Hunt, 2016; Navarro, Ruiz-Oliva, Larrañaga, & Yubero, 2015). Bullying can also have lifelong effects as indicated by longitudinal studies linking youth victimization to increased risk in adulthood of heavy drinking, substance use, fighting and suicide attempts (M. J. Kim, Catalano, Haggerty, & Abbott, 2011; Meltzer, Vostanis, Ford, Bebbington, & Dennis, 2011).

Given bullying's interconnectedness to adolescent well-being and development, research is central to understanding the risk factors contributing to its occurrence. Present research indicates the risk of bullying victimization is not the same across all adolescents and contexts. Being overweight/obese, having a physical or learning disability, and being LGBTQ are some individual characteristics that have been consistently found to be associated with increased bullying risk in various countries (Hong & Espelage, 2012). In contrast, being from a racial/ethnic minority or having a low socioeconomic status (SES) have not been uniformly associated with bullying victimization across different countries (Due et al., 2009; Hong & Espelage, 2012; Tippett & Wolke, 2014; Vervoort, Scholte, & Overbeek, 2010).

The inconsistency in findings on the association between SES and bullying victimization might be related to the variety of SES measurements used across studies. For instance, some studies have used single-variable measures, whereas others have used multidimensional scales, that accounted for overall income level, educational and occupational levels of both parents (Tippett & Wolke, 2014). Moreover, few studies have investigated how different dimensions of SES may have unique associations with bullying victimization (Due et al., 2009; Tippett & Wolke, 2014). Therefore, while having a high socioeconomic status may be protective for some students, those who are perceived to have a more refined cultural background, for example, may become the target of bullying in spite of their higher SES (Lehman & A. Dumais, 2016).

Research on the topic has been mostly conducted in high-income countries (Tippett & Wolke, 2014). Less is known about countries in the Global South, which tend to have higher

rates of bullying victimization (F. J. Elgar, McKinnon, et al., 2015b) and socioeconomic inequality (Ortiz & Cummins, 2011).

This study expands on the evidence of the association between adolescent SES and bullying victimization in countries in Latin America and the Caribbean. It aims to address multiple questions: 1) is bullying victimization associated with individual socioeconomic status associated in Latin America and the Caribbean?; 2) are there differences in the association between bullying victimization and SES according to the type of bullying (i.e. physical, verbal and relational)?; 3) does the association between bullying and SES differs by sub-dimensions of SES (i.e. cultural possessions and family wealth)? 4) are there differences in the association between different types of bullying victimization and SES dimensions? ; and 5) to what extent does the association between bullying and SES vary by country?

5.2 Methods

Two main theories informed the analysis for this study: Fundamental Causes of Health Inequalities (FCHI) and Bourdieu's theory of Social Reproduction. FCHI theory provides the rationale for hypothesized differences in bullying victimization according to SES. This theory posits that those with higher SES have more access to flexible resources (e.g. money, information, etc.), and can use these resources to avoid and/or mitigate adverse health behaviors and outcomes over the life course (Phelan, Link, & Tehranifar, 2010).

In the case of bullying victimization, higher SES adolescents might be less likely to be the target of bullying because they may be more socially engaged and have better self-regulation over their feelings and impulses compared to their lower SES peers (Kuo, Casillas, Walton, Way,

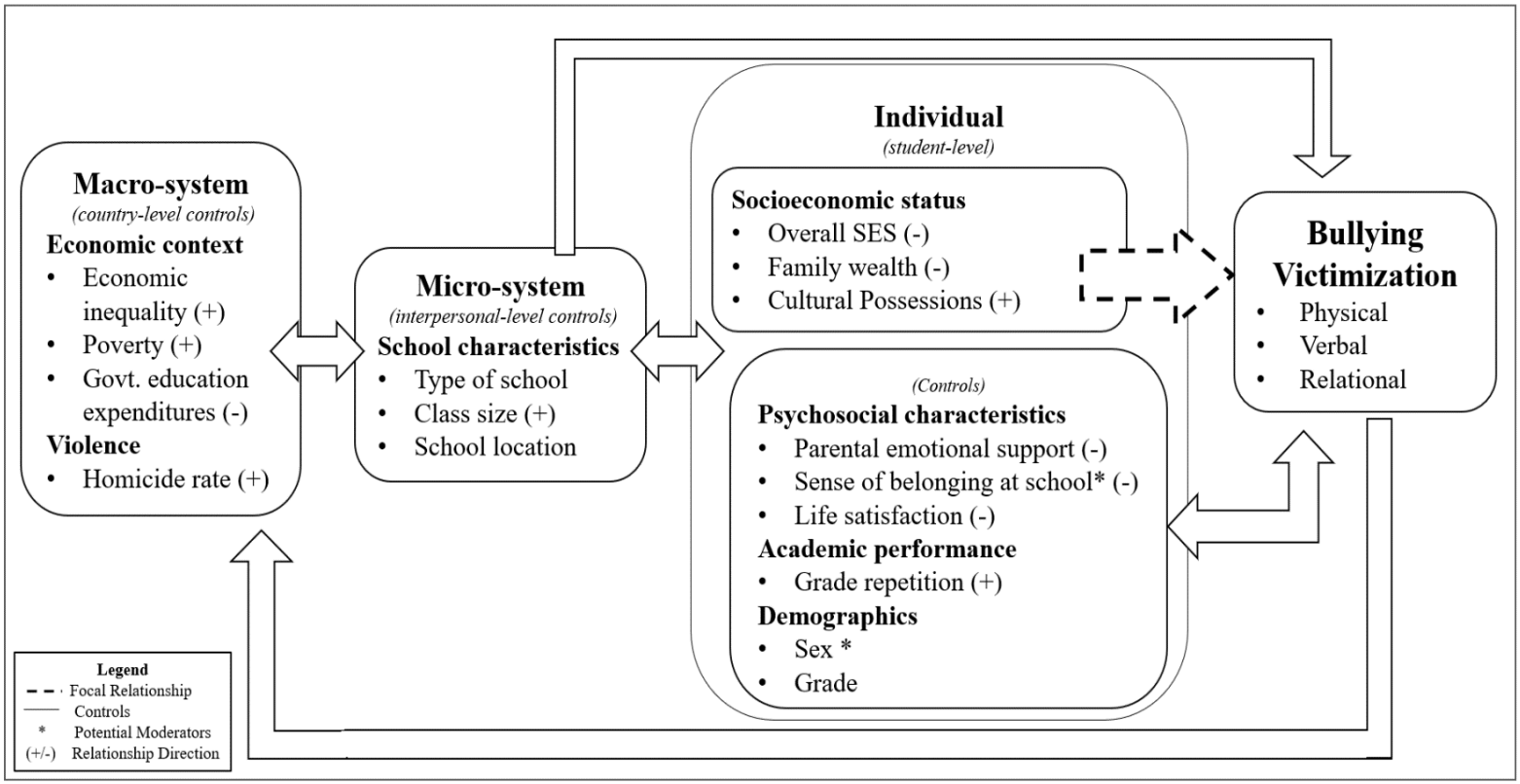
& Moore, 2020). In addition, high SES adolescents can benefit from the health-protective actions of their parents, known as the "spillover effect" (Freese & Lutfey, 2011). For instance, high SES parents can provide access to safe and high-quality schools and tend to be more actively involved in school (McNeal, 2001; Viner et al., 2012), therefore reducing the risk of bullying among their children.

The second theory, Social Reproduction Theory, states that socioeconomic status consists of three types of accumulated capital: social, cultural, and economic (Bourdieu, 1986). The theory suggests different types of capital work in tandem to reinforce existing divisions and reproduce socioeconomic inequalities throughout successive generations (Bourdieu & Clough, 1996). Social Reproduction theory informs the dimensions of socioeconomic status that were investigated in this paper. Research on the association between bullying and different dimensions of SES, such as cultural capital and occupational status, has been limited so far; however, there is emerging evidence that suggests that these associations might differ by SES dimension (Lehman & Dumais, 2016).

Figure 5.1 contains the conceptual model illustrating how constructs related to these two theories (e.g. **overall SES**, **family wealth** and **cultural possessions)** were positioned within the broader framework of Bronfenbrenner's Ecological model (Bronfenbrenner, 1999) [Figure 5.1]. Three systems of the Ecological model were central to the analyses at hand: the individual, micro and macro-systems. Constructs at all levels were also informed by existing research on the relationship between adolescent bullying and socioeconomic status (F. J. Elgar, McKinnon, et

al., 2015b; F. J. Elgar, Pfortner, et al., 2015; Glew, Fan, Katon, Rivara, & Kernic, 2005; Hong & Espelage, 2012; Tippett & Wolke, 2014).

Figure 5.1 Aim 1- Bullying and Socioeconomic Status Among Adolescent Students in Latin America and the Caribbean



Individuals' socioeconomic status and its subdimensions are shown inside the individual system, at the upper right side of the picture. The dashed line connecting these individual characteristics to bullying victimization illustrates the main relationship of interest in the present study, while the signs near each construct indicate the hypothesized direction of the association. On the left side of the picture, the macro-system included factors at the country level (i.e. socioeconomic and violence context), known to correlate with bullying victimization (F. J. Elgar, Craig, Boyce, Morgan, & Vella-Zarb, 2009; F. J. Elgar, McKinnon, et al., 2015a; Viner et al., 2012). These country factors can impact the schools at the micro-system, for example, by influencing the amount of resources schools receive and ultimately their quality and safety. In turn, these schools can shape students' psychosocial development and academic performance, and ultimately impact their risk of bullying victimization (Bradshaw, Sawyer, & O'Brennan, 2009). The bidirectional arrows shown in the model indicate that these relationships can happen both ways, while the arrow linking bullying victimization to the macro-system indicates that these mechanisms are happening as a continuous cycle.

It is also important to mention that the conceptual model presented does not account for a series of unmeasured factors, not shown in the picture for clarity and succinctness. The conceptual model presented in section 3.5 of chapter three provides a more complete depiction of the theorized relationships between these multi-systems.

5.2.1. Data and Variable Description

This study used data from the 2015 Program for International Student Assessment (PISA), run by the Organization for Economic Cooperation and Development (OECD). PISA is

a triennial assessment of learning outcomes (e.g. reading and math) targeting 15-year-old students in OECD member countries and affiliate economies. Data from both PISA's student background questionnaire and the school principal questionnaire were used in the present analysis. All questionnaires were computer-based and translated to the local language (i.e. Portuguese and Spanish) (OECD, 2017b)[1].

In 2015, eight LAC countries chose to participate in PISA and to collect data on bullying victimization at the national level: Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Mexico, Peru, and Uruguay. Together, they amounted to 74,196 students tested across 2,615 schools. Moreover, these countries represent the Northern, Central, Caribbean, and Southern areas of the LAC region, and include a wide range of socioeconomic and demographic contexts.

Bullying Victimization (dependent variable)

Bullying victimization was assessed using six questions about the frequency of different types of bullying within the previous 12 months [Table 5.1]. Answer options were: a) never or almost never; b) a few times a year; c) a few times a month; and d) once a week or more.

Table 5.1 Bullying Questions and Type of Bullying. PISA 2015

Question- During the past 12 months, how often have you had the following experiences in school?	Type of Bullying
Other students left me out of things on purpose.	Relational
Other students spread nasty rumors about me.	Relational
Other students made fun of me.	Verbal
I was threatened by other students.	Verbal
Other students took away or destroyed things that belonged to me.	Physical
I got hit or pushed around by other students.	Physical

[1] A comprehensive review of PISA, its strengths, and applications, is available in chapter four, while an in-depth discussion about PISA's limitations can be found in chapter eight.

PISA's bullying questions were behavior-based as opposed to more general inquiries about bullying (e.g. "Have you been bullied during the previous 12 months?"). Behavior-based questions have been shown to yield less biased estimates of bullying among some minority groups in the U.S. (Sawyer, Bradshaw, & O'Brennan, 2008). Confirmatory factor analysis conducted by PISA researchers indicated that these six questions provided a reliable unidimensional index, and this measure had an average Cronbach's alpha reliability of 0.83 across countries (ranging from 0.71 to 0.90) (OECD, 2017a; Smith & López-Castro, 2017). Recent analyses also indicate that PISA's country estimates for bullying victimization are in agreement with other international assessments of bullying such as the Trends in International Mathematics and Science Study (TIMSS), providing further evidence of the validity of PISA's bullying measurement across different countries (Smith & López-Castro, 2017).

The six bullying questions were combined into one variable **"any bullying"**. Students who answered *a few times a month* and *once a week or more* in at least one of the six questions were coded as "Yes" and those who answered *never or almost never* and *a few times a year* across all questions were coded as "No". Pairs of binary variables related to the same type of bullying (as shown in table 5.1) were used to create three additional variables: 1) "**physical bullying"**; 2) "**verbal bullying**"; and 3) "**relational bullying"**. A "Yes" on any of these three variables indicated that students experienced at least one type of aggression associated with that type of bullying during the prior 12 months.

The present operationalization of bullying victimization was guided by international standards for measuring bullying among school-aged children issued by the UNICEF's Office of

Research. According to the organization "the definition of bullying as the experience of any type (teased, left out of play, had lies spread about them, been threatened, hit, forced to do things, had things stolen, or made to feel afraid), at least *once in a couple of months* [emphasis added], has been selected as the most robust definition for global, national and by-region comparisons" (Richardson, p. 2). The bullying variables used in the present study are also consistent with PISA reports, and this aggregation was shown to improve cross-national invariance of the scale (OECD, 2017a). Lastly, the present study is in line with research tailored specifically to the Latin American context as local researchers also differentiated between bullying victims and non-victims based on whether students were bullied sometime in the previous months (Roman & Murillo, 2011).

A sensitivity test was performed to further investigate the appropriate cut off for the data at hand. The four bullying variables (i.e. any bullying, relational bullying, verbal bullying and physical bullying) were recoded as "Yes' ' for *once a week or more*. The distribution of the four variables was reviewed, showing that the percentage of students bullied on a weekly basis was small (<5% for physical bullying) [Table 5.2]. Given these distributions, subsequent analyses were conducted using *a few times a month* as the cut-off point.

Table 5.2 Percent of Students Who Suffer Bullying Once a Week Versus Once A Month or More, By Bullying Type. PISA 2015 (N=62,777)

	Any Bullying		**Physical Bullying**		**Verbal Bullying**		**Relational Bullying**	
	1 x Week	1 x Month <	1 x Week	1 x Month <	1 x Week	1 x Month <	1 x Week	1 x Month <
Yes	9.5	19.5	3.1	6.5	5.7	11.5	6.4	13.8
No	90.5	80.5	96.9	93.5	94.3	88.5	93.6	86.2

Students who did not answer any of the six bullying questions were treated as missing (about 9% of the total sample). A detailed examination was conducted to understand these missing patterns, how they related to the measures of student socioeconomic status (SES), and how they differed by LAC country. Results indicated that low SES students had higher odds of not answering the bullying questions, compared to higher SES students. That relationship was consistent in almost all participating LAC countries, suggesting that missing patterns of bullying data were not random. There were no multiple imputation procedures performed in the ensuing analyses, and detailed results of this analysis are presented in appendix 5.5.

Student Socioeconomic Status (independent variables)

Three SES variables were used in the current analysis; 1) "**overall SES "**; 2) "**family wealth**"; and 3) "**cultural possessions**". All three variables were coded as terciles, using PISA's available SES indexes[2]. The variables were computed using survey-weights to obtain students' within-country socioeconomic standing on each of these three dimensions. Therefore, although students in the top terciles in Brazil and Chile may have different index scores, their position in their respective countries indicates a higher socioeconomic standing compared to their peers. This approach is also in line with international analyses of SES data (Vyas & Kumaranayake, 2006).

Models were also assessed using SES variables grouped by quartiles and quintiles. However, there were noted differences in the direction, magnitude, and significance of the focal

[2] A more detailed explanation of how the indexes were calculated by the OECD is available in section 4.1

association. SES variables were thus grouped by terciles to facilitate the interpretation of coefficients across multiple models.

Control Variables

Iterative models built throughout the analyses contained a series of control variables from the individual, micro and macro systems. At the individual level, variables included students' demographic characteristics, academic performance, and psychosocial well-being. The two student demographic variables were: 1) "**male**" (Y/N) and; 2) "**grade**" (behind country's modal grade/ in country's modal grade for 15-year-old students/ ahead of country's modal grade). Age was not included in the models due to PISA's focus on sampling exclusively 15-year-olds. The variable "**repeated grade**" (Y/N) was selected as a proxy for students' academic performance.

Variables related to adolescents' psychosocial well-being were: 1) "**parental emotional support**" (Above /Below Average); 2) "**school belonging**" (Above /Below Average); and 3) "**life satisfaction**" (0-10). The variables "**parental emotional support**" and "**school belonging**" were divided into above or below the average index based on the distribution of the available PISA indexes. PISA's parental emotional support index was based on four questions regarding parental academic involvement, support, and encouragement (OECD, 2017b). The school belonging index was based on six questions about how much students agreed with statements such as "I feel like an outsider at school" and "I feel lonely at school". Lower values meant lower support and school belonging. Lastly, "**life satisfaction**" was based on one question from the student questionnaire which asked students to rate their life satisfaction from 0 to 10.

At the micro system, school factors known to be relevant to bullying prevalence (Hong & Espelage, 2012) were drawn from PISA's school questionnaire. These variables included: 1) "**public school**" (Y/N); 2) "**school located in urban area**" (Y/N); and 3) "**average class size**" (13-18 / 23-28/ 33-38 /43-53). The school location variable was dichotomized between students living in urban areas (i.e. a city of at least 100,000 or more) and those living in a suburban or rural zone (i.e. ranging from a town with less than 100,000 people to a rural area with fewer than 3,000 people). Lastly, the class size variable is an average calculated by the OECD based on one of nine possible categories, ranging from "15 students or fewer" to "More than 50 students" (OECD, 2017b).

Four variables, obtained from the World Bank website (The World Bank, 2019), were included at the macro-system, capturing aspects of the socioeconomic and violence contexts in each country. The variable "**Gini Index"**(0-100) was included as a proxy for socioeconomic inequality, and higher values meant more inequality. The second variable, "**poverty headcount ratio**" captured extreme poverty by measuring the percent of the national population living on less than $5.50 a day. The variable "**government expenditure on education**", assessed government support and prioritization of public education, and it measured the percentage of the Gross Domestic Product (GDP) spent on education. Lastly, the variable "**intentional homicides**" was used as a proxy to assess how widespread was violence in each country. The variable was calculated based on the number of homicides per 100,000 people. Together, these variables accounted for factors known to correlate with the prevalence of school bullying at the macro-system level (F. J. Elgar et al., 2009; F. J. Elgar, McKinnon, et al., 2015a). Appendix table 5.1

includes a more detailed explanation of how the variables were calculated. Lastly, a categorical variable "**country**" was included to account for the eight LAC countries that were part of PISA 2015. Uruguay was used as the reference category because the country had the lowest unweighted bullying prevalence.

5.2.2 Analytical Approach

The present analyses were conducted using STATA 15.1. All analyses were adjusted for PISA's complex sample design using the STATA's "svy" command. Student survey weights provided population estimates for all noninstitutionalized 15-year-olds attending school in Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Mexico, Peru, and Uruguay. The OECD applied balanced repeated replication (BRR) procedures to derive the survey weights for PISA. As a result, every estimate in the present analysis was calculated 81 times, once for each of a balanced set of combinations where one PSU was dropped from each stratum, and the variance was obtained using the resulting replicated point estimates.

Bivariate analyses were performed using each of the four bullying outcome variables (i.e. any bullying, physical bullying, relational bullying, and verbal bullying) and each SES dimension (i.e. overall SES, cultural possessions, and family wealth). The design-based F statistic was used to compare proportions due to the weighted survey data.

For the multivariable analyses, multiple Poisson regression models with robust variance estimators were run for each of the outcome variables. Poisson was chosen over logistic regression for two main reasons; when using cross-sectional data with frequent outcomes, which is the case of the "any bullying" variable where about 20% of students reported being bullied, the

odds ratios obtained through logistic regressions can strongly overestimate the prevalence ratio (Barros & Hirakata, 2003). In addition, Poisson regression provides the prevalence ratio which is simpler to interpret compared to the odds ratio. Poisson regression was applied to all subsequent models to maintain consistency across results.

Prevalence ratios, standard errors, and confidence intervals were estimated. Two key interactions were also tested: between SES and sex and SES and school belonging Significance levels for those interaction terms were tested at the p=0.05. Models were built progressively, where the first model included only the focal relationship and the last model included variables accounting for the macro, micro and individual systems of the conceptual model.

Plots of predictive margins with 95% confidence intervals were also created to illustrate the differences in the predicted number of bullying events across SES dimensions and LAC countries.

5.3 Results

5.3.1 Descriptive Statistics and Bivariate Results

Approximately 1 out every 5 adolescent students in the LAC region suffered from at least one type of bullying in the previous 12 months [Table 5.3]. Bullying victimization also varied greatly between LAC countries. For example, the percent of Dominican students bullied was almost double that of students in Uruguay. Overall, physical bullying was the least common type of bullying, with about 6.2%, while the prevalence of verbal and relational bullying across LAC countries was 11.3% and 13.5% respectively.

Table 5.3 Student Characteristics by Country[1]. PISA 2015 (N=62,777)									
Any Bullying	**URU**	**BRA**	**CHI**	**COL**	**CRC**	**DR**	**MEX**	**PER**	**Total**
Yes	17.0	16.9	17.9	21.6	20.8	29.3	19.9	18.0	19.2
P= 0.000									
Physical Bullying[2]									
Yes	5.8	6.1	5.9	6.1	3.6	12.7	7.1	6.7	6.2
P= 0.000									
Verbal Bullying[3]									
Yes	11.2	10.1	10	12.3	12.9	17.1	13.8	8.3	11.3
P= 0.000									
Relational Bullying[4]									
Yes	12.4	11.6	13.2	15.1	15.7	21.6	13.8	12.2	13.5
P= 0.000									
Overall SES									
Top	35.7	35.7	33.6	34	33.8	35.4	33.9	34.8	37.4
Middle	33.2	33.4	33.5	33.3	33.5	32.5	33.3	33.7	32.7
Bottom	31.1	30.9	32.9	32.7	32.7	32.1	32.9	31.6	29.9
P= 0.687									
Cultural Possessions									
Top	33.8	33.1	32.5	33.6	31.8	33.4	32.2	31.2	33.8
Middle	33.1	33.2	34.4	31.1	34.5	31.4	33.5	35.4	32.9
Bottom	33.2	33.7	33.1	35.2	33.7	35.1	34.2	33.4	33.3
P= 0.195									
Family Wealth									
Top	34.5	35.5	33.8	33.9	33.1	35.5	33.8	34.8	36.5
Middle	33.1	34.1	33.4	33.3	34.3	33.1	33	33.4	33.3
Bottom	32.3	30.4	32.8	32.8	32.7	31.3	33.2	31.7	30.2
P= 0.403									
Sex									
Female	53.4	52.5	50.4	52.9	51.1	51.9	49.4	49.7	51.7
P= 0.001									
Grade									
Behind	32.0	53.0	28.4	38.3	51.1	35.1	37.8	21.4	38.3
Modal Grade	67.1	44.1	69.5	41.3	48.7	45.8	61.6	52.3	52.9
Ahead	1.0	2.8	2.2	20.4	0.3	19.1	0.7	26.3	8.7
P= 0.000									
Repeated Grade?									
Yes	30.1	31.5	23.6	41.2	30.2	29.4	14.8	23.3	52.9
P= 0.000									

Table 5.3 Student Characteristics by Country[1]. PISA 2015 (N=62,777)									
Any Bullying	**URU**	**BRA**	**CHI**	**COL**	**CRC**	**DR**	**MEX**	**PER**	**Total**
School Belonging									
Above Avg.	49.3	45.8	50.2	43.0	49.8	52.0	49.1	47.3	47.0
P= 0.000									
Parental Support									
Above Avg.	50.6	48.8	49.5	49.2	65.1	49.3	49.5	48.7	49.0
P= 0.000									
Life Satisfaction (0/10)									
Mean	7.6	7.6	7.4	7.9	8.2	8.5	8.3	7.5	100
95% Confidence Interval	(7.6, 7.8)	(7.5, 7.6)	(7.3, 7.5)	(7.8, 7.9)	(8.1, 8.3)	(8.4, 8.6)	(8.2, 8.3)	(7.4, 7.6)	
[1]Distribution calculated with survey weights, [2]N=62,648, [3]N=62,721, [4]N=62,737 Design-based F-tests									

The distribution of the SES variables was about 30% across the top, middle, and bottom terciles, reflecting the calculation of these variables. Females made up a slight majority of the students at 51.7%. Most attended the countries' modal grade for 15-year-old students (52.9%). However, in Brazil and Costa Rica, more than half of the students were at a grade level behind. Across all LAC countries, 28.2% of students repeated a grade. Colombia stood out for having nearly 41.2% of its students repeated a grade. Lastly, LAC students' overall satisfaction with life (rated from 0 to 10) was around 7.9.

Most of the schools in the LAC countries were public (66.5%) [Table 5.4]. Chile was the only country in the region where private and schools in urban locations (i.e. cities with at least 100,000 people) made up the majority of education institutions (66.5% and 64.3%, respectively). In contrast, in Costa Rica most students (88.4%) attended schools located in suburban or rural areas. Finally, Peru, Uruguay and Costa Rica had on average smaller class sizes compared to the other countries.

Table 5.4 School Characteristics*. PISA 2015, n =62,777									
School Type (Private/Public)	**URU**	**BRA**	**CHI**	**COL**	**CRC**	**DR**	**MEX**	**PER**	**Total**
Private School	17.4	35.3	65.6	37.3	12.5	29	12.6	33.2	33.5
P= 0.000									
Class Size									
13-18	14.7	2.6	4.4	8.4	11.8	7	6.8	19.5	7.1
23-28	52.6	11	25.3	16.2	54.1	18.5	13.9	42.7	25.3
33-38	30.7	41.4	49.1	32.8	26	30.3	28.5	30.2	35.1
43-53	1.9	45	21.2	42.6	8.2	44.2	50.8	7.6	32.5
P=0.000									
School Located in Urban Area?									
Yes	40.5	41.1	64.3	43.3	11.6	24.9	48.1	13.7	42.1
P= 0.000									
Design-based F-tests with survey weights									

Country-level variables reflected the diversity of socioeconomic contexts among the sampled LAC countries. For instance, whereas Brazil and Colombia had higher levels of socioeconomic inequality reflected in Gini coefficients of 51.3 and 51.1, respectively, Uruguay's inequality was lower at 40.2 [Table 5.5]. Uruguay's poverty ratio (4%) was also much lower compared to its neighbors. Mexico's poverty ratio, for example, was about 8 times larger relative to Uruguay. Education spending across LAC countries was around 4% of their total gross domestic product (GDP). At the low end, the Dominican Republic spent about 2%, and at the higher end Costa Rica spent around 7.1% of its GDP.

Table 5.5 Country Characteristics. World Bank, n =62,777								
	URU	**BRA**	**CHI**	**COL**	**CRC**	**DR**	**MEX**	**PER**
Gini Coefficient (0-100) P= 0.000	40.2	51.3	47.7	51.1	48.4	45.2	48.7	43.4
Poverty headcount ratio (% of population) P=0.000	4	19.4	10.1	28.7	11.5	21.7	33.6	24.2
Intentional homicides (per 100,000 people) P= 0.000	8.5	28.4	3.4	26.5	11.6	17.4	16.5	7.2
Govt. education expenditure, total (% of GDP) P= 0.000	4.4	6.2	4.9	4.5	7.1	2.0	5.2	4.0
Design-based F-tests with survey weights								

5.3.2 Poisson Regression Results

Research question 1.1: **Is bullying victimization associated with individual socioeconomic status associated in Latin America and the Caribbean?**

Bullying victimization and overall SES were significantly associated across all models [Table 5.6], although in some models the significant association was between the top and middle terciles, while in others it was between the top and bottom terciles. The direction of that association was positive, meaning that lower SES students had lower rates of victimization compared to those in the top tercile. For instance, after accounting for individual, school and country-level factors (i.e. model 7), students at the bottom SES tercile had a 14.4% lower rate of bullying compared to those in the top percentile, and those in the middle tercile had 12.6% lower rate compared to the reference group.

Table 5.6 Prevalence Rate Ratios and Standard Errors for Overall SES and Any Type of Bullying (Yes= A few times a month or more). PISA 2015 (N=62,777)							
	1	**2**	**3**	**4**	**5**	**6**	**7**
SES Terciles (1st=ref.)							
Middle	0.930*	0.929*	0.903**	0.898**	0.879***	0.902	0.874***
	(0.030)	(0.030)	(0.030)	(0.030)	(0.029)	(0.053)	(0.029)
Bottom	0.979	0.975	0.927*	0.907**	0.864***	0.956	0.860***
	(0.030)	(0.030)	(0.029)	(0.031)	(0.029)	(0.052)	(0.029)
Individuals Characteristics							
Male (Y/N)			1.281***	1.277***	1.314***	1.314***	1.315***
			(0.034)	(0.034)	(0.035)	(0.035)	(0.035)
Grade (Modal Grade= ref.)							
Behind Modal Grade			1.203***	1.192***	1.175***	1.176***	1.196***
			(0.040)	(0.040)	(0.040)	(0.040)	(0.040)
Ahead of Modal Grade			0.925	0.920	0.932	0.931	0.883*
			(0.049)	(0.048)	(0.047)	(0.047)	(0.042)
Repeated Grade (Y/N)			1.224***	1.221***	1.154***	1.155***	1.127***
			(0.043)	(0.043)	(0.038)	(0.038)	(0.037)
School Belonging (Top= ref.)							
Bottom					1.465***	1.556***	1.461***
					(0.033)	(0.065)	(0.034)
Parental Support (Top= ref.)							
Bottom					1.092***	1.092***	1.092***
					(0.026)	(0.026)	(0.026)
Life Satisfaction (0/10)					0.902***	0.902***	0.904***
					(0.004)	(0.004)	(0.004)
School Characteristics							
Public School (Y/N)				1.000	0.995	0.993	1.021
				(0.035)	(0.033)	(0.033)	(0.033)
Average Class Size (33-38 Students= ref.)							
13-18				1.157**	1.147**	1.148**	1.134*
				(0.055)	(0.057)	(0.057)	(0.057)
23-28				1.042	1.048	1.049	1.045
				(0.038)	(0.036)	(0.036)	(0.037)
43-53				1.001	0.996	0.995	1.013
				(0.033)	(0.032)	(0.032)	(0.033)
School Located in Urban Area (Y/N)				0.935*	0.921**	0.922**	0.925**
				(0.028)	(0.027)	(0.027)	(0.026)
Country Characteristics							
Country (Uruguay=ref.)							

Table 5.6 Prevalence Rate Ratios and Standard Errors for Overall SES and Any Type of Bullying (Yes= A few times a month or more). PISA 2015 (N=62,777)

	1	2	3	4	5	6	7
Brazil		0.991	0.951	0.987	0.964	0.964	
		(0.034)	(0.036)	(0.038)	(0.038)	(0.038)	
Chile		1.051	1.068	1.114*	1.076	1.074	
		(0.039)	(0.040)	(0.047)	(0.043)	(0.043)	
Colombia		1.270***	1.241***	1.275***	1.276***	1.275***	
		(0.050)	(0.049)	(0.053)	(0.053)	(0.052)	
Costa Rica		1.224***	1.177***	1.162***	1.238***	1.236***	
		(0.044)	(0.044)	(0.045)	(0.047)	(0.047)	
Dominican Republic		1.725***	1.733***	1.761***	1.936***	1.936***	
		(0.071)	(0.075)	(0.083)	(0.089)	(0.089)	
Mexico		1.173***	1.193***	1.231***	1.300***	1.300***	
		(0.040)	(0.043)	(0.051)	(0.052)	(0.052)	
Peru		1.059	1.109*	1.086	1.030	1.032	
		(0.046)	(0.050)	(0.052)	(0.047)	(0.047)	
Gini Coefficient (0-100)							1.040***
							(0.008)
Poverty headcount ratio (% of population)							1.009***
							(0.002)
Intentional homicides (per 100,000 people)							0.993**
							(0.002)
Govt. education expenditure, total (% of GDP)							0.865***
							(0.013)
Interactions							
SESSchool Belonging**							
Middle Tercile # Bottom School Belong						0.957	
						(0.065)	
Bottom Tercile #Bottom School Belong						0.858*	
						(0.053)	
Constant	0.194***	0.176***	0.139***	0.138***	0.238***	0.229***	0.077***
	(0.004)	(0.006)	(0.005)	(0.007)	(0.014)	(0.014)	(0.026)

** p<0.05, ** p<0.001, ***p<0.0001*

All individual characteristics were statistically significant. After controlling for all other factors, bullying prevalence among males was 31.5% higher compared to females. In addition, 15-year-old students behind grade level were 19.6% more likely to be bullied relative to those

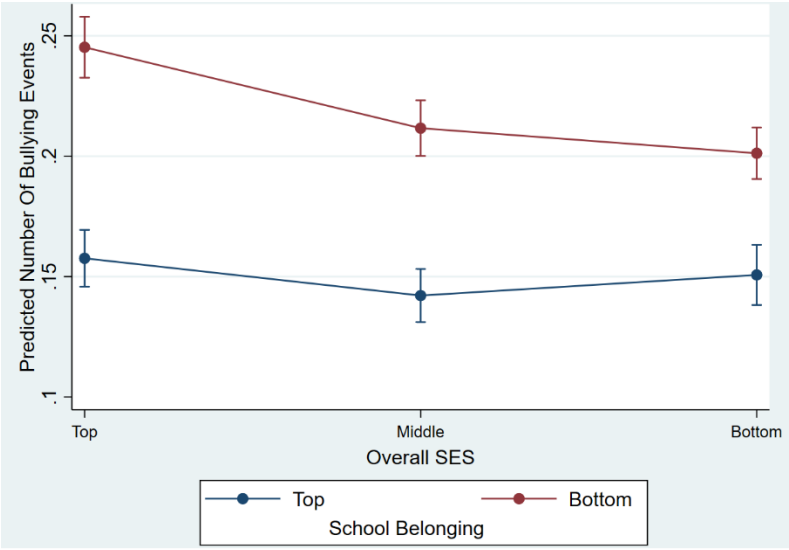
attending the countries' modal grade. Grade repetition, low life satisfaction, low sense of school belonging, and poor parental support were also risk factors for bullying, even after accounting for all other variables.

There were no statistically significant differences in the prevalence of bullying between public and private schools. In contrast, classroom size and school location were statistically associated with bullying prevalence. Students in smaller classrooms had 13.4% higher rates of bullying compared to those in middle-sized classrooms. Furthermore, students in urban schools had slightly lower rates of bullying (7.5%) compared to those in suburban or rural schools.

All country-level factors were significantly associated with student bullying. Homicide rates and government expenditures on education were negatively associated, while a positive association was noted between bullying and poverty and socioeconomic inequality. For instance, one unit increase in the Gini coefficient was associated with a 4% increase in bullying prevalence.

School belonging was a significant moderator in the association between SES and bullying [Figure 5.2], although it is not possible to rule out the reverse relationship given the cross-sectional nature of the data. Among students with a low sense of school belonging, those with higher SES were slightly more likely to experience bullying compared to low SES students. Among students with a high sense of school belonging, there was no difference in the prevalence of bullying across SES terciles. The interaction between SES and sex was not statistically significant and therefore not included in the table.

Figure 5.2 Any Bullying and Overall SES.
Predictive Margins with 95% CIs of Interaction
Term: Overall SES x School Belonging. PISA 2015



Model adjusted for: sex, grade, grade repetition, type of school, class size, school location, school belonging, life satisfaction, parental support, and country.

Research question 1.2: Are there differences in the association between bullying victimization and SES according to the type of bullying (i.e. physical, verbal, and relational)?

After controlling for individual, school and country factors, associations between overall SES and each bullying type were all positive and statistically significant, although the magnitude of the prevalence differences was quite small [Table 5.7]. Moreover, there was no variation in the direction or magnitude of the association across all three bullying types.

Table 5.7 Prevalence Rate Ratios and Standard Errors for Overall SES and Different Types of Bullying (Yes= A few times a month or more). PISA 2015			
	Physical Bullying[1]	**Verbal Bullying[2]**	**Relational Bullying[3]**
SES Terciles (1st= ref.)			
Middle	0.836**	0.843***	0.861***
	(0.051)	(0.034)	(0.035)
Bottom	0.862**	0.865**	0.897*
	(0.044)	(0.040)	(0.040)
Individuals Characteristics			
Male (Y/N)	1.823***	1.659***	1.172***
	(0.096)	(0.070)	(0.036)
Grade (Modal Grade =ref.)	1.410***	1.238***	1.203***
Behind Modal Grade	(0.087)	(0.061)	(0.050)
	0.845	0.833**	0.899
Ahead of Modal Grade	(0.082)	(0.051)	(0.048)
Repeated Grade (Y/N)	1.137	1.069	1.198***
	(0.078)	(0.048)	(0.046)
School Belonging (Above=ref.)			
Below Avg.	1.766***	1.601***	1.695***
	(0.111)	(0.056)	(0.049)
Parental Support (Above=ref.)	1.080	1.070	1.070*
Below Avg.	(0.046)	(0.039)	(0.032)
	0.893***	0.889***	0.893***
Life Satisfaction (0/10)	(0.008)	(0.006)	(0.005)
School Characteristics			
Public School (Y/N)	1.098	1.008	1.093*
	(0.067)	(0.044)	(0.045)
Average Class Size (33-38 Students=ref.)			
13-18	1.223	1.201*	1.066
	(0.152)	(0.085)	(0.072)
23-28	1.023	1.093	1.018
	(0.070)	(0.056)	(0.043)
43-53	1.069	1.022	0.992
	(0.062)	(0.047)	(0.035)
School Located in Urban Area (Y/N)	0.922	0.951	0.877***
	(0.055)	(0.039)	(0.031)
Country Characteristics			
Gini Coefficient (0-100)	0.996	1.060***	1.055***
	(0.016)	(0.012)	(0.009)
Poverty headcount ratio (% of population)	1.008*	1.019***	1.007**
	(0.004)	(0.003)	(0.002)
Intentional homicides (per 100,000 people)	1.000	0.988***	0.988***
	(0.004)	(0.003)	(0.002)
Govt. education expenditure, total (% of GDP)	0.878***	0.907***	0.850***
	(0.025)	(0.020)	(0.015)
Constant	0.121**	0.011***	0.033***
	(0.083)	(0.005)	(0.011)

Observations	62,648	62,721	62,737
[1]N=62,648, [2]N=62,721, [3]N=62,737 * p<0.05, ** p<0.001, *** p<0.0001			

Sex, grade, school belonging, parental emotional support, and life satisfaction, were all significantly associated with each type of bullying, although some differences in the magnitude of the association were also noted. For instance, the rate of physical bullying among males was 82.3% higher compared to females, after adjusting for all other factors. In contrast, the prevalence of relational bullying among males was only 17.2% higher than females. Lastly, grade repetition was significantly associated with relational bullying only. No school factors were associated with physical bullying. Class size was negatively associated with verbal bullying, while school type (i.e. private or public) and location were associated with relational bullying.

All four country-level factors were significantly associated with verbal and relational bullying. Socioeconomic inequality and poverty rates were positively associated, while homicide and government expenditures on education were negatively associated. Moreover, only poverty rates and government expenditures on education were associated with physical bullying, and the direction and magnitude of those associations were similar to the other bullying types.

Research question 1.3: How do different dimensions of SES (e.g. economic and cultural capital) relate to overall bullying victimization?

There were no notable differences in the significance, magnitude, or direction of the association between any type of bullying victimization and each of the three SES dimensions, after accounting for individual, school and country-level factors [Table 5.8]. Students in the top

terciles of each SES dimension had higher rates of bullying compared to those in the bottom quartiles.

Table 5.8 Prevalence Rate Ratios and Standard Errors for SES Dimensions and Any Type of Bullying (Yes= A few times a month or more). PISA 2015 (N=62,777)

	Overall SES	Cultural Possessions	Family Wealth
Terciles (1st= ref.)			
Middle	0.874**	0.899**	0.868**
	-0.029	-0.026	-0.027
Bottom	0.860**	0.845**	0.919*
	-0.029	-0.024	-0.029
Constant	0.077**	0.086**	0.081**
	-0.026	-0.029	-0.027

** p<0.05, ** p<0.001, *** p<0.0001*
Models adjusted for: sex, grade, grade repetition, type of school, class size, school location, school belonging, life satisfaction, parental support, Gini coefficient, poverty headcount, intentional homicides and government expenditures on education. Complete tables available in the Appendix section

Research question 1.4: Are there differences in the association between different types of bullying victimization and SES dimensions?

There were no significant differences in the number of expected bullying events across SES terciles and dimensions, with a few exceptions [Figures 5.3- 5.5]. Females in the bottom terciles of overall SES and family wealth had a moderately higher expected number of relational bullying events compared to their higher SES peers. Males in the bottom tercile of family wealth also had a significantly higher number of predicted bullying events compared to those in the middle tercile, but not compared to those in the top family wealth tercile.

Unique patterns were also noted between males and females. First, males were expected to have more incidents of physical, verbal, and relational bullying compared to females,

regardless of the SES dimension and tercile. Second, among females, there was a clear distinction in the expected number of bullying events, between verbal and relational bullying, with the latter being a more common occurrence. This distinction was not observed among males.

Figure 5.3 Bullying Types and Overall SES, by Sex. Predictive Margins with 95% CIs. PISA 2015

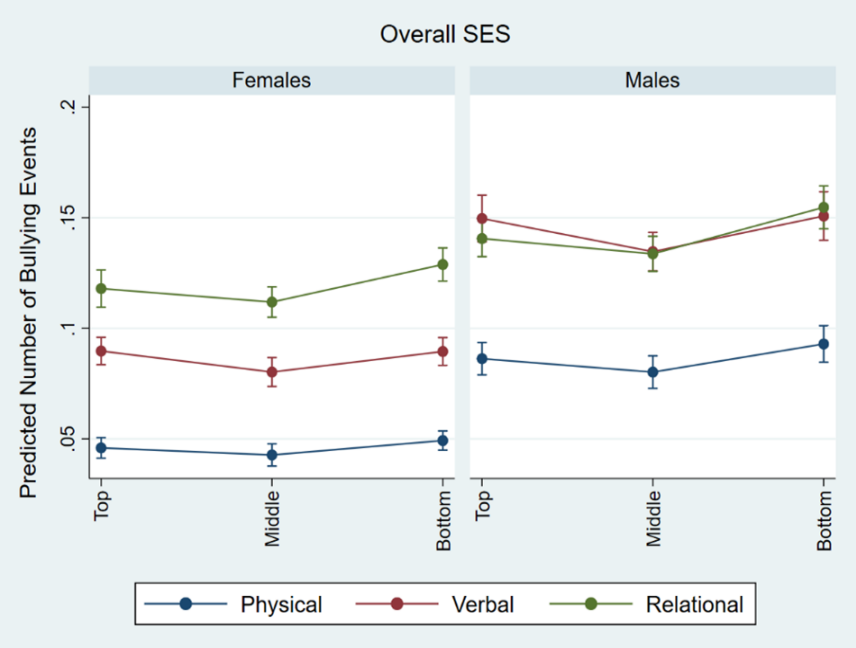
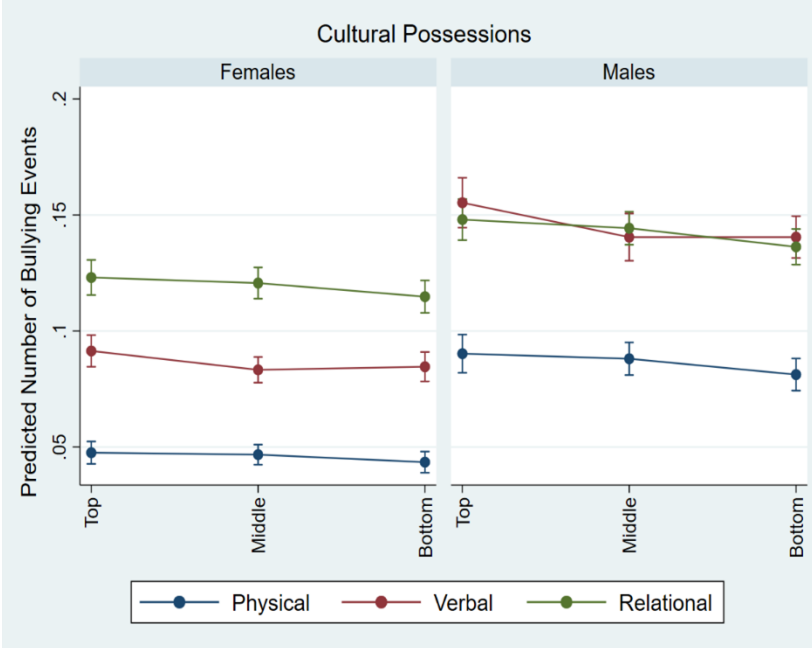
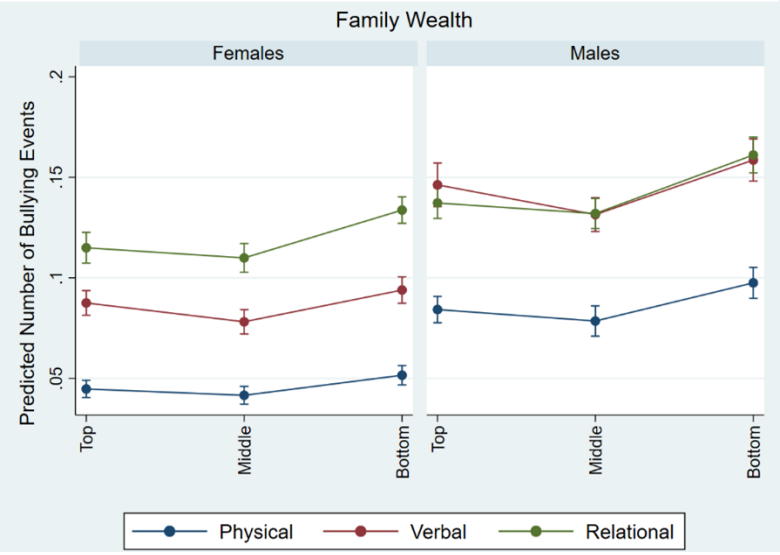


Figure 5.4 Bullying Types and Cultural Possessions, by Sex. Predictive Margins with 95% CIs. PISA 2015



Models adjusted for sex, grade, grade repetition, type of school, class size, school location, school belonging, life satisfaction, parental support, Gini coefficient, poverty, homicides, and government expenditures on education.

Figure 5.5 Bullying Types and Family Wealth, by Sex. Predictive Margins with 95% CIs. PISA 2015



Models adjusted for sex, grade, grade repetition, type of school, class size, school location, school belonging, life satisfaction, parental support, Gini coefficient, poverty, homicides, and government expenditures on education.

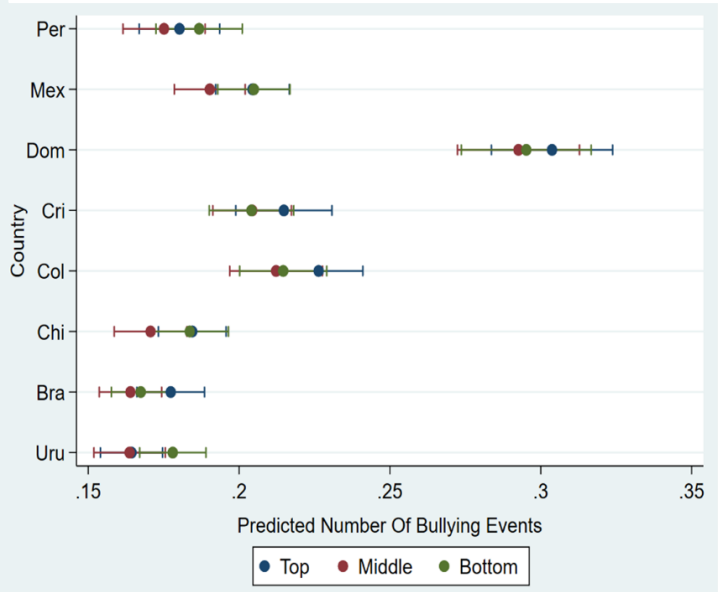
Research question 1.5: To what extent does the association between bullying and SES vary by country?

After accounting for individual and school-level factors, there were no within-country differences in the predicted number of bullying events for neither overall SES and cultural possession [Figures 5.6 and 5.7, respectively]. Students in the Dominican Republic had a notably higher rate of bullying compared to all other LAC countries in the model, independent of student SES.

Uruguay was the only country with a significant difference in the predicted number of bullying events according to an SES dimension [Figure 5.8]. After accounting for individual and

school-level factors, Uruguayan students in the bottom family wealth tercile were expected to suffer from more bullying victimization events, relative to those in the top and middle terciles.

Figure 5.6 Any Bullying and Overall SES by Country. Predictive Margins with 95% CIs. PISA 2015



Models adjusted for: sex, grade, grade repetition, type of school, class size, school location, school belonging, parental support, and life satisfaction.

Figure 5.7 Any Bullying and Cultural Possessions by Country. Predictive Margins with 95% CIs. PISA 2015

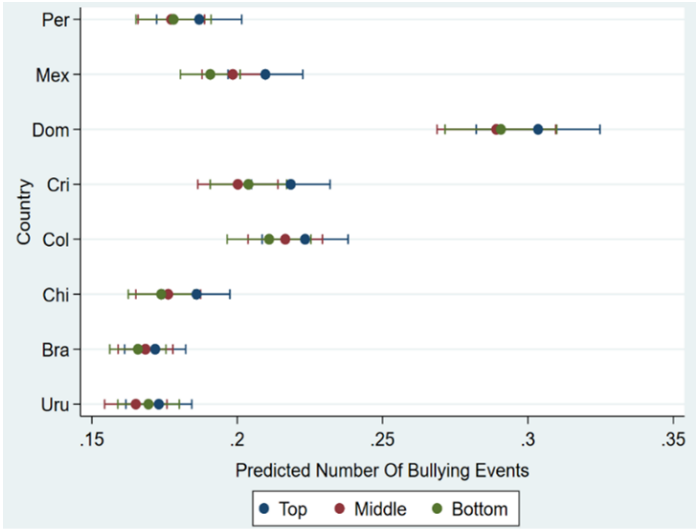
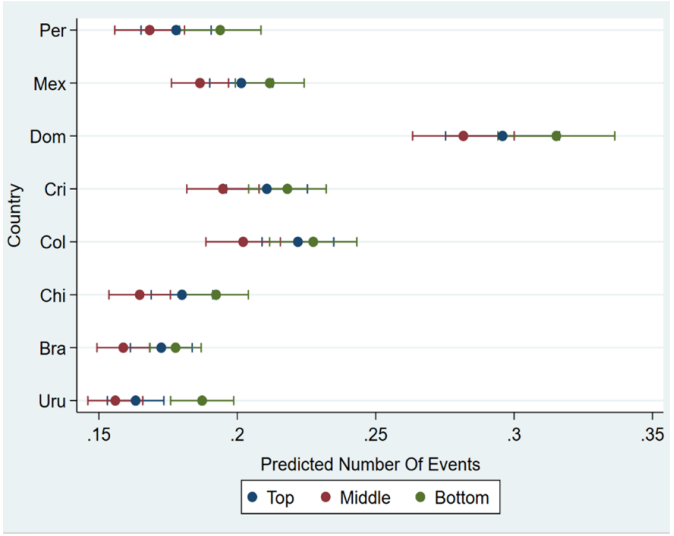


Figure 5.8 Any Bullying and Family Wealth by Country. Predictive Margins with 95% CIs. PISA 2015



Models adjusted for: sex, grade, grade repetition, type of school, class size, school location, school belonging, parental support, and life satisfaction, and parental support.

5.4 Discussion

Prevalence of bullying victimization differed significantly across LAC countries. Bullying was considerably more widespread among students in the Dominican Republic compared with the other sampled countries. This may be in part due to the social and cultural norms around school violence and discipline in Caribbean countries. For instance, the Caribbean region is marked by high percentages of children and adolescents who report having suffered some form of physical and psychological violence: 89% in Jamaica, 86% in Suriname, 77% in Trinidad and Tobago (Plan International and UNICEF, 2015). Corporal punishment also remains an acceptable form of disciplinary measure against Caribbean students, and it has yet to be legally prohibited in many countries in the area (Plan International and UNICEF, 2015; Trucco, 2017). Therefore, it is possible that the high prevalence of bullying among students in the Dominican Republic is part of a wider context of both physical and psychological violence in the Caribbean region.

It is also important to note that the variation in bullying prevalence across countries likely reflects not only disparities in actual bullying occurrence but also cultural variations in the understanding and severity of the concept of bullying itself (Due et al., 2009). In addition, the noted cross-country differences further suggest that student bullying is contingent upon the surrounding environment, and not necessarily a behavior intrinsic to adolescent development (Due et al., 2009).

Prevalence of any type of bullying was positively associated with student socioeconomic status, meaning that wealthier students were more likely to suffer bullying victimization, even

after accounting for individual, school and country-level factors. Thus, in general, students in the bottom terciles of overall SES, cultural possessions and family wealth had lower prevalence of bullying compared to those in the top terciles. The observed positive association between bullying victimization and cultural possessions is in line with previous findings indicating that students who are perceived to have more cultural capital are more likely to suffer from bullying, especially males who are subjected to masculinity ideals that often oppose any sign of cultural sophistication (Lehman & A. Dumais, 2016).

The present positive association between bullying victimization and overall SES and family wealth, although slight in magnitude, stands in contrast with previous studies on the topic. Namely, a study of 35-countries in Europe and North America concluded that adolescents with lower socioeconomic status were at higher risk of bullying (Due et al., 2009). This discrepancy may be due to a few reasons namely: potential within-country variations in the awareness and understanding of the concept of bullying, differences in how social stratification may impact bullying victimization, the unsuitability of using parental SES as a proxy for adolescent SES, and the large percentage of missing observations in the present dataset.

First, low and high SES students in the LAC region might have different perceptions regarding the occurrence and severity of bullying. Researchers have noted that adolescents who are chronically exposed to violence may develop adaptive mechanisms that normalize violent experiences and lessen their impact on well-being (Latzman & Swisher, 2005). Therefore, lower SES adolescents in the LAC region, who tend to experience high levels of violence at home, school and the community (World Health Organization, 2014a), might have been less likely to

recognize and acknowledge bullying aggression in the PISA questionnaire. This underreporting in PISA, therefore, could have led to an underestimation of the true relationship between adolescent SES and bullying victimization in the region. Another reason for the present results might be in part because bullying victimization has been shown to be less susceptible to social stratification along affluence levels, especially compared to bullying aggression (F. J. Elgar et al., 2009). However, since PISA does not yet collect information on bullying aggression, it was not possible to further examine this relationship in the present study.

It is also important to note that using parental SES as a proxy for adolescent SES can be misleading when studying certain adolescent behaviors and outcomes. For example, although adult alcohol consumption and marijuana use tends to be related to socioeconomic status, research among adolescents has been inconclusive, and researchers have suggested that these behaviors are more closely related to peer social status than family social status (Hanson & Chen, 2007). It is, therefore, possible that peer relationships is a critical confounder in the association between SES and bullying, and it was not accounted for in the present analysis (Cook, Williams, Guerra, E. Kim, & McCoy, 2010; Due et al., 2009).

Lastly, and perhaps most importantly, the PISA dataset contained a large percentage of missing observations for the bullying questions. Moreover, the percentage of missing observations varied across countries, ranging from about 20% in Brazil to less than 2% in Mexico, and a significant association between odds of missing observations and socioeconomic status was observed. The incompleteness of the outcome data, coupled with its underlying

association with the key independent variables, hinders the strength of the present findings showing low SES to be a protective factor against bullying.

Although the general models indicated a positive association between any type of bullying and SES, predicted probabilities for a few characteristics showed some unique patterns of victimization among female adolescents, thus highlighting the complexity of the focal relationship. The present study noted that females in the bottom terciles of both overall SES and family wealth had a moderately higher expected number of relational bullying events compared to their higher SES peers. Furthermore, the negative experience of relational bullying, often marked by social exclusion from those who are perceived to have higher social status, can be compounded by how female adolescents from different SES backgrounds cope with feelings of rejection. For instance, in one recent systematic review of how SES can influence the developing brain in adolescence, researchers found that female adolescents from lower SES backgrounds display significantly more activity in social pain regions of the brain when experiencing social exclusion compared to females from higher SES backgrounds (Buckley, Broadley, & Cascio, 2019). Yet, compared to physical bullying, relational bullying tends to be minimized as a less severe type of bullying and school staff is less likely to act (Mishna, 2004). Given relational bullying's detrimental impact on adolescent well-being, particularly among females, it is important that programs and policies address the full spectrum of bullying behaviors and acknowledge the more vulnerable youths.

Like previous studies in other regions of the world (Glew, Fan, Katon, Rivara, & Kernic, 2005; Navarro, Ruiz-Oliva, Larrañaga, & Yubero, 2015; J. Wang et al., 2012), current findings

also indicated that school performance, life satisfaction, sense of belonging to the school and parental emotional support were significant protective factors against all types of bullying behaviors in the LAC region. Unlike U.S. based studies, smaller classrooms and schools in suburban or rural areas had a moderately higher bullying prevalence compared, respectively, to mid-sized classroom and urban schools (Hong & Espelage, 2012).

All country-level factors were associated with bullying prevalence in the region. Government expenditures on education were negatively associated with bullying supporting the importance of public investment in education not only to improve educational outcomes (OECD, 2010), but also to reduce peer violence among youths. The positive associations between income inequality, poverty rates and bullying victimization were consistent with previous research on the topic (Due et al., 2009; Elgar et al., 2009). These findings provide further evidence that more unequal societies may foster harsher social conditions, and more widespread retaliation and peer aggression. Lastly, homicide rates were negatively related to bullying in the LAC region. This finding diverged from previous studies based in Europe and North America, which pointed that national homicide rates were not only positively associated with bullying victimization, but also mediated the relationship between income inequality and bullying (Elgar et al., 2013).

5.5 Appendices: Tables

Appendix Table 5.1 Country-level Variables, Source Notes and Dates		
Variable	**Source Note (The World Bank, 2019)**	**Date**
Gini Index	Gini index measures the extent to which the distribution of income among individuals or households within a national economy deviates from a perfectly equal distribution. A Gini index of 0 represents perfect equality, while an index of 100 implies perfect inequality.	Mexico= 2014 All other countries= 2015
Poverty headcount ratio at $5.50 a day (2011 PPP) (% of population)	Poverty headcount ratio at $5.50 a day is the percentage of the population living on less than $5.50 a day at 2011 international prices.	Mexico= 2014 All other countries= 2015
Intentional homicides (per 100,000 people)	Intentional homicides are estimates of unlawful homicides purposely inflicted as a result of domestic disputes, interpersonal violence, violent conflicts over land resources, intergang violence over turf or control, and predatory violence and killing by armed groups.	Dominican Republic = 2014 All other countries= 2015
Govt. education expenditure, total (% of GDP)	General government expenditure on education is expressed as a percentage of GDP. It also includes expenditure funded by transfers from international sources to the government.	Dominican Republic = 2007 Uruguay= 2011 All other countries= 2015
Source: World Bank, Development Research Group		

Bullying Questions: Missing Values

About 9% (6,652/ 74,196) of students did not answer any of the six bullying questions [Appendix Table 5.2]. However, that percentage varied greatly by country, ranging from just 1.7% in Mexico, to 18% in Brazil.

Appendix Table 5.2 Percent Missing for All Six Bullying Questions, By Country. PISA 2015 (N = 74,196)									
	URU	**BRA**	**CHI**	**COL**	**CRC**	**DR**	**MEX**	**PER**	**Total**
% Missing	6.1	18.0	2.2	2.8	13.4	7.5	1.7	3.3	9.0
N	369	4,175	153	324	918	355	127	231	6,652
Total Obs.	6,062	23,141	7,053	11,795	6,866	4,740	7,568	6,971	74,196

A closer examination of the missing patterns for each of the six bullying questions across each LAC country [Appendix Table 5.3] did not highlight a specific question with higher percentages of missing observations. The first bullying questions asked in the questionnaire (at the top of Table 5.3) tended to have just slightly fewer missing observations compared to the last questions asked. For example, in Peru, the first bullying questions asked (i.e. Other students left me out of things on purpose) had 3.9% of missing observations, while the last question asked in the computer-based assessment (i.e., Other students spread nasty rumors about me) had 4.7%. These results indicated that students were not more likely to skip a particular question or type of bullying when answering the questionnaire, and therefore there was no single bullying question that could be dropped in order to mitigate the number of missing observations in the composite bullying variable.

Appendix Table 5.3 Percent Missing for each bullying question, By Country. PISA 2015 (N=74,196)

	URU	BRA	CHI	COL	CRC	DR	MEX	PER	%	Obs.
Other students left me out of things on purpose.										
No	92.9	80.8	97.5	96.8	85.9	90.4	98.0	96.1	90.2	66,909
Yes	7.1	19.2	2.5	3.2	14.1	9.6	2.0	3.9	9.8	7,287
Total P= 0.000	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	74,196
Other students made fun of me.										
No	92.9	80.8	97.6	96.7	85.9	90.4	98.0	96.1	90.2	66,915
Yes	7.1	19.2	2.4	3.3	14.1	9.6	2.0	3.9	9.8	7,281
Total P= 0.000	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	74,196
I was threatened by other students.										
No	92.6	80.7	97.4	96.6	86.0	89.9	98.0	95.7	90.0	66,795
Yes	7.4	19.3	2.6	3.4	14.0	10.1	2.0	4.3	10.0	7,401

Appendix Table 5.3 Percent Missing for each bullying question, By Country. PISA 2015 (N=74,196)

	URU	BRA	CHI	COL	CRC	DR	MEX	PER	%	Obs.
Total P= 0.000	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	74,196
Other students took away or destroyed things that belonged to me.										
No	92.5	80.6	97.6	96.7	86.1	90.0	98.0	95.8	90.1	66,826
Yes	7.5	19.4	2.4	3.3	13.9	10.0	2.0	4.2	9.9	7,370
Total P= 0.000	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	74,196
I got hit or pushed around by other students.										
No	92.5	80.3	97.2	96.3	85.6	89.5	97.7	95.5	89.7	66,560
Yes	7.5	19.7	2.9	3.7	14.4	10.5	2.3	4.5	10.3	7,636
Total P= 0.000	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	74,196
Other students spread nasty rumors about me.										
No	92.6	80.1	97.1	96.5	85.6	89.5	97.6	95.3	89.7	66,533
Yes	7.4	19.9	2.9	3.5	14.4	10.5	2.4	4.7	10.3	7,663
Total P= 0.000	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	74,196

P=Pearson chi^2

The next step was to look at the association between missing data for the bullying questions and students' socioeconomic status. Appendix Table 5.4 shows that the percentage of missing data increases as one's SES standing decreases. Furthermore, on average the percent of missing data among students in the bottom SES quintile was about 1.6 times larger compared to those in the top quintile.

Appendix Table 5.4 Percent Missing for each bullying question, By Overall SES Quintiles. PISA 2015 (N= 74,196)							
	1st (Top) Quintile	2nd	3rd	4th	5th (Bottom) Quintile	Total	Obs.
Other students left me out of things on purpose.							
No	95.6	93.5	93.3	92.1	88.7	92.7	66,717
Yes	4.4	6.5	6.7	7.9	11.3	7.3	5,222
P= 0.000							
Other students made fun of me.							
No	95.5	93.5	93.4	92.0	88.8	92.8	66,726
Yes	4.5	6.5	6.6	8.0	11.2	7.2	5,213
P= 0.000							
I was threatened by other students.							
No	95.4	93.2	93.2	91.9	88.6	92.6	66,605
Yes	4.6	6.8	6.8	8.1	11.4	7.4	5,334
P= 0.000							
Other students took away or destroyed things that belonged to me.							
No	95.5	93.3	93.2	91.9	88.6	92.6	66,633
Yes	4.5	6.7	6.8	8.1	11.4	7.4	5,306
P= 0.000							
I got hit or pushed around by other students.							
No	95.1	92.9	92.9	91.7	88.1	92.3	66,372
Yes	4.9	7.1	7.1	8.3	11.9	7.7	5,567
P= 0.000							
Other students spread nasty rumors about me.							
No	95.3	93.1	92.7	91.4	88.0	92.2	66,339
Yes	4.7	6.9	7.3	8.6	12.0	7.8	5,600
P= 0.000							
P= Pearson chi^2							

The association between missing data and SES was further tested using logistic regression in which the dichotomous outcome variable was coded as 0 if at least one bullying question was answered and 1 if "all six questions were absent" [Appendix Table 5.5]. Two unweighted logistic regressions were run for each LAC country. One unadjusted (i.e.

outcome=missing data and key predictor= SES terciles) and one adjusted for all variables in the complete model (i.e. sex, grade, grade repetition, type of school, class size, school location, school belonging, life satisfaction and parental support). The unadjusted models showed that students in the middle and bottom terciles had higher odds of skipping all bullying questions compared to those in the top SES tercile.

Appendix Table 5.5 Unadjusted (1) and Adjusted[1](2) Odds Ratios and Standard Errors for Missing All Six Bullying Variables According to Overall SES Terciles, by Country. PISA 2015 (N = 74,196)

	Models	Middle Tercile[2]		Bottom Tercile[2]		Obs.
URU	1	1.411*	-0.235	2.019**	-0.316	5,959
	2	0.864	-0.245	1.289	-0.35	5,486
BRA	1	1.351**	-0.075	2.060**	-0.105	21,604
	2	1.17	-0.115	1.611**	-0.152	18,356
CHI	1	1.659	-0.458	2.603**	-0.656	6,949
	2	1.08	-0.501	1.844	-0.788	6,798
COL	1	1.154	-0.304	2.178*	-0.534	11,561
	2	1.329	-0.562	1.933	-0.839	11,147
CRC	1	0.822*	-0.078	1.027	-0.094	6,720
	2	1.574	-0.889	3.064*	-1.625	5,824
DR	1	2.004**	-0.321	2.329**	-0.366	4,695
	2	1.145	-0.37	1.067	-0.352	4,088
MEX	1	1.779	-0.579	2.494*	-0.784	7,507
	2	1.369	-0.573	0.979	-0.442	7,303
PER	1	2.702**	-0.666	5.717**	-1.311	6,944
	2	1.726	-0.785	2.796*	-1.228	6,496

** p<0.05, ** p<0.001, *** p<0.0001*

[1]Complete model adjusted for sex, grade, grade repetition, type of school, class size, school location, school belonging, life satisfaction and parental support

[2]Top Tercile of Overall SES= Reference Category

It is also important to note that the PISA dataset uses Balanced Repeated Replication (BRR) weights to account for school and student nonresponse and to obtain population estimates. The BRR weights, which added up to 80 individual weights per student, do not work with the

multiple imputation (MI) command in STATA. Therefore, I decided to not pursue multiple imputation procedures to account for the missing bullying data in the PISA 2015 dataset.

Complete Result Tables:

Appendix Table 5.6 Prevalence Rate Ratios and Standard Errors for Cultural Possessions and Any Type of Bullying (Yes=A few times a month or more). PISA 2015 (N=62,777)								
	1	2	3	4	5	6	7	8
Terciles (1st= ref.)								
Middle	0.960	0.962	0.929*	0.926*	0.900***	0.933	0.907*	0.899***
	(0.029)	(0.029)	(0.028)	(0.028)	(0.026)	(0.048)	(0.037)	(0.026)
Bottom	0.944*	0.943*	0.900***	0.898***	0.847***	0.890*	0.820***	0.845***
	(0.026)	(0.026)	(0.025)	(0.025)	(0.024)	(0.047)	(0.037)	(0.024)
Individuals Characteristics								
Male (Y/N)			1.291***	1.288***	1.333***	1.333***	1.315***	1.334***
			(0.035)	(0.035)	(0.036)	(0.036)	(0.064)	(0.036)
Grade (Modal Grade =ref.)								
Behind Modal Grade			1.201***	1.188***	1.170***	1.170***	1.170***	1.190***
			(0.040)	(0.040)	(0.040)	(0.040)	(0.040)	(0.040)
Ahead of Modal Grade			0.929	0.924	0.937	0.936	0.937	0.887*
			(0.049)	(0.048)	(0.047)	(0.047)	(0.047)	(0.042)
Repeated Grade (Y/N)			1.221***	1.218***	1.150***	1.150***	1.150***	1.122***
			(0.043)	(0.043)	(0.038)	(0.039)	(0.038)	(0.037)
School Belonging (Above=ref.)								
Below Avg.					1.461***	1.526***	1.461***	1.455***
					(0.033)	(0.063)	(0.033)	(0.033)
Parental Support (Above=ref.)								
Below Avg.					1.097***	1.097***	1.097***	1.097***
					(0.026)	(0.026)	(0.026)	(0.026)
Life Satisfaction (0/10)					0.901***	0.901***	0.901***	0.903***
					(0.004)	(0.004)	(0.004)	(0.004)
School Characteristics								
Public School (Y/N)				0.984	0.975	0.974	0.975	0.998
				(0.035)	(0.032)	(0.032)	(0.032)	(0.032)
Average Class Size (33-38 Students=ref.)								

Appendix Table 5.6 Prevalence Rate Ratios and Standard Errors for Cultural Possessions and Any Type of Bullying (Yes=A few times a month or more). PISA 2015 (N=62,777)

	1	2	3	4	5	6	7	8
13-18				1.155**	1.141**	1.141**	1.142**	1.128*
				(0.056)	(0.057)	(0.057)	(0.057)	(0.058)
23-28				1.042	1.048	1.048	1.048	1.045
				(0.038)	(0.036)	(0.036)	(0.036)	(0.037)
43-53				0.999	0.993	0.992	0.993	1.010
				(0.033)	(0.033)	(0.033)	(0.033)	(0.033)
School Located in Urban Area (Y/N)				0.944*	0.937*	0.937*	0.937*	0.941*
				(0.026)	(0.026)	(0.026)	(0.026)	(0.025)
Country Characteristics								
Country (Uruguay= ref.)								
Brazil		0.991	0.952	0.987	0.965	0.965	0.964	
		(0.034)	(0.036)	(0.038)	(0.038)	(0.038)	(0.038)	
Chile		1.051	1.068	1.102*	1.058	1.057	1.058	
		(0.039)	(0.040)	(0.046)	(0.043)	(0.043)	(0.043)	
Colombia		1.270***	1.239***	1.270***	1.272***	1.272***	1.272***	
		(0.050)	(0.049)	(0.053)	(0.053)	(0.053)	(0.053)	
Costa Rica		1.224***	1.177***	1.166***	1.248***	1.247***	1.247***	
		(0.044)	(0.043)	(0.045)	(0.047)	(0.047)	(0.047)	
Dominican Republic		1.726***	1.732***	1.762***	1.940***	1.939***	1.939***	
		(0.072)	(0.076)	(0.084)	(0.090)	(0.090)	(0.090)	
Mexico		1.173***	1.191***	1.231***	1.299***	1.299***	1.300***	
		(0.040)	(0.042)	(0.051)	(0.053)	(0.053)	(0.053)	
Peru		1.060	1.108*	1.084	1.030	1.030	1.030	
		(0.046)	(0.050)	(0.051)	(0.047)	(0.047)	(0.047)	
Gini Coefficient (0-100)								1.037***
								(0.008)
Poverty headcount ratio (% of population)								1.009***
								(0.002)
Intentional homicides (per 100,000 people)								0.994**
								(0.002)

Appendix Table 5.6 Prevalence Rate Ratios and Standard Errors for Cultural Possessions and Any Type of Bullying (Yes=A few times a month or more). PISA 2015 (N=62,777)								
	1	2	3	4	5	6	7	8
Govt. education expenditure, total (% of GDP)								0.868***
								(0.013)
Interactions								
SESSchool Belonging**								
Top Tercile # Top School Belong						1.000		
						(0.000)		
Top Tercile # Bottom School Belong						1.000		
						(0.000)		
Middle Tercile #Top School Belong						1.000		
						(0.000)		
Middle Tercile # Bottom School Belong						0.944		
						(0.054)		
Bottom Tercile # Top School Belong						1.000		
						(0.000)		
Bottom Tercile #Bottom School Belong						0.925		
						(0.058)		
SES*Sex								
Top Tercile #Female							1.000	
							(0.000)	
Top Tercile #Male							1.000	
							(0.000)	
Middle Tercile #Female							1.000	
							(0.000)	
Middle Tercile #Male							0.988	
							(0.058)	
Bottom Tercile #Female							1.000	
							(0.000)	
Bottom Tercile #Male							1.057	

Appendix Table 5.6 Prevalence Rate Ratios and Standard Errors for Cultural Possessions and Any Type of Bullying (Yes=A few times a month or more). PISA 2015 (N=62,777)								
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
							(0.067)	
Constant	0.195***	0.176***	0.139***	0.139***	0.241***	0.235***	0.243***	0.086***
	(0.005)	(0.006)	(0.006)	(0.007)	(0.015)	(0.015)	(0.015)	(0.029)
** p<0.05, ** p<0.001, *** p<0.0001*								

Appendix Table 5.7 Prevalence Rate Ratios and Standard Errors for Family Wealth and Any Type of Bullying (Yes= A few times a month or more). PISA 2015 (N=62,777)

	1	2	3	4	5	6	7	8
Terciles (1st= ref.)								
Middle	0.917**	0.916**	0.909**	0.907**	0.871***	0.962	0.856**	0.868***
	(0.028)	(0.028)	(0.028)	(0.028)	(0.027)	(0.050)	(0.039)	(0.027)
Bottom	1.045	1.040	1.006	0.992	0.922*	1.028	0.955	0.919**
	(0.030)	(0.029)	(0.029)	(0.031)	(0.029)	(0.056)	(0.043)	(0.029)
Individuals Characteristics								
Male (Y/N)			1.285***	1.281***	1.317***	1.318***	1.333***	1.317***
			(0.034)	(0.034)	(0.035)	(0.035)	(0.062)	(0.035)
Grade (Modal Grade =ref.)								
Behind Modal Grade			1.193***	1.183***	1.168***	1.169***	1.168***	1.188***
			(0.040)	(0.040)	(0.039)	(0.039)	(0.039)	(0.040)
Ahead of Modal Grade			0.930	0.925	0.939	0.938	0.939	0.890*
			(0.049)	(0.048)	(0.047)	(0.047)	(0.047)	(0.043)
Repeated Grade (Y/N)			1.217***	1.215***	1.150***	1.150***	1.150***	1.123***
			(0.043)	(0.042)	(0.038)	(0.038)	(0.038)	(0.037)
School Belonging (Above=ref.)								
Below Avg.					1.462***	1.621***	1.462***	1.457***
					(0.033)	(0.067)	(0.033)	(0.034)
Parental Support (Above=ref.)								
Below Avg.					1.089***	1.090***	1.089***	1.090***
					(0.026)	(0.026)	(0.026)	(0.026)
Life Satisfaction (0/10)					0.901***	0.902***	0.901***	0.904***

Appendix Table 5.7 Prevalence Rate Ratios and Standard Errors for Family Wealth and Any Type of Bullying (Yes= A few times a month or more). PISA 2015 (N=62,777)								
	1	2	3	4	5	6	7	8
Terciles (1st= ref.)								
					(0.004)	(0.004)	(0.004)	(0.004)
School Characteristics								
Public School (Y/N)				0.985	0.986	0.984	0.985	1.011
				(0.036)	(0.033)	(0.033)	(0.033)	(0.033)
Average Class Size (33-38 Students=ref.)								
13-18				1.150**	1.141**	1.142**	1.140**	1.127*
				(0.055)	(0.057)	(0.056)	(0.057)	(0.057)
23-28				1.043	1.048	1.048	1.048	1.045
				(0.038)	(0.036)	(0.036)	(0.036)	(0.037)
43-53				1.002	0.998	0.997	0.997	1.015
				(0.033)	(0.032)	(0.032)	(0.032)	(0.033)
School Located in Urban Area (Y/N)				0.951	0.932*	0.933*	0.932*	0.935*
				(0.028)	(0.026)	(0.026)	(0.026)	(0.026)
Country Characteristics								
Country (Uruguay= ref.)								
Brazil		0.993	0.954	0.987	0.963	0.964	0.963	
		(0.034)	(0.035)	(0.038)	(0.037)	(0.037)	(0.037)	
Chile		1.051	1.067	1.100*	1.065	1.064	1.064	
		(0.039)	(0.040)	(0.047)	(0.043)	(0.043)	(0.043)	
Colombia		1.269***	1.240***	1.269***	1.271***	1.271***	1.272***	
		(0.050)	(0.049)	(0.053)	(0.053)	(0.053)	(0.053)	
Costa Rica		1.224***	1.179***	1.170***	1.245***	1.243***	1.244***	
		(0.044)	(0.044)	(0.045)	(0.047)	(0.047)	(0.047)	
Dominican Republic		1.726***	1.733***	1.761***	1.933***	1.935***	1.933***	
		(0.072)	(0.076)	(0.083)	(0.089)	(0.089)	(0.089)	

Appendix Table 5.7 Prevalence Rate Ratios and Standard Errors for Family Wealth and Any Type of Bullying (Yes= A few times a month or more). PISA 2015 (N=62,777)

	1	2	3	4	5	6	7	8
Terciles (1st= ref.)								
Mexico		1.172***	1.191***	1.228***	1.296***	1.296***	1.296***	
		(0.040)	(0.043)	(0.052)	(0.053)	(0.053)	(0.053)	
Peru		1.059	1.106*	1.085	1.028	1.031	1.029	
		(0.046)	(0.050)	(0.052)	(0.047)	(0.047)	(0.047)	
Gini Coefficient (0-100)								1.038***
								(0.008)
Poverty headcount ratio (% of population)								1.009***
								(0.002)
Intentional homicides (per 100,000 people)								0.994**
								(0.002)
Govt. education expenditure, total (% of GDP)								0.867***
								(0.013)
Interactions								
SES*School Belonging								
Top Tercile # Top School Belong						1.000		
						(0.000)		
Top Tercile # Bottom School Belong						1.000		
						(0.000)		
Middle Tercile #Top School Belong						1.000		
						(0.000)		
Middle Tercile # Bottom School Belong						0.853*		
						(0.055)		
Bottom Tercile # Top School Belong						1.000		
						(0.000)		

Appendix Table 5.7 Prevalence Rate Ratios and Standard Errors for Family Wealth and Any Type of Bullying (Yes= A few times a month or more). PISA 2015 (N=62,777)								
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Terciles (1st= ref.)								
Bottom Tercile #Bottom School Belong						0.844**		
						(0.050)		
SES*Sex								
Top Tercile #Female							1.000	
							(0.000)	
Top Tercile #Male							1.000	
							(0.000)	
Middle Tercile #Female							1.000	
							(0.000)	
Middle Tercile #Male							1.033	
							(0.068)	
Bottom Tercile #Female							1.000	
							(0.000)	
Bottom Tercile #Male							0.937	
							(0.056)	
Constant	0.191***	0.173***	0.135***	0.135***	0.236***	0.222***	0.235***	0.081***
	(0.004)	(0.006)	(0.005)	(0.007)	(0.014)	(0.013)	(0.015)	(0.027)
** p<0.05, ** p<0.001, *** p<0.0001*								

Appendix Table 5.8 Prevalence Rate Ratios and Standard Errors for Overall SES and Different Types of Bullying (Yes= A few times a month or more). PISA 2015			
	Physical Bullying	**Verbal Bullying**	**Relational Bullying**
Terciles (1st= ref.)			
Middle	0.836**	0.843***	0.861***
	(0.051)	(0.034)	(0.035)
Bottom	0.862**	0.865**	0.897*
	(0.044)	(0.040)	(0.040)
Individuals Characteristics			
Male (Y/N)	1.823***	1.659***	1.172***
	(0.096)	(0.070)	(0.036)
Grade (Modal Grade =ref.)	1.410***	1.238***	1.203***
Behind Modal Grade	(0.087)	(0.061)	(0.050)
	0.845	0.833**	0.899
Ahead of Modal Grade	(0.082)	(0.051)	(0.048)
Repeated Grade (Y/N)	1.137	1.069	1.198***
	(0.078)	(0.048)	(0.046)
School Belonging (Above=ref.)			
Below Avg.	1.766***	1.601***	1.695***
	(0.111)	(0.056)	(0.049)
Parental Support (Above=ref.)	1.080	1.070	1.070*
Below Avg.	(0.046)	(0.039)	(0.032)
	0.893***	0.889***	0.893***
Life Satisfaction (0/10)	(0.008)	(0.006)	(0.005)
School Characteristics			
Public School (Y/N)	1.098	1.008	1.093*
	(0.067)	(0.044)	(0.045)
Average Class Size (33-38 Students=ref.)			
13-18	1.223	1.201*	1.066
	(0.152)	(0.085)	(0.072)
23-28	1.023	1.093	1.018

Appendix Table 5.8 Prevalence Rate Ratios and Standard Errors for Overall SES and Different Types of Bullying (Yes= A few times a month or more). PISA 2015			
	Physical Bullying	**Verbal Bullying**	**Relational Bullying**
	(0.070)	(0.056)	(0.043)
43-53	1.069	1.022	0.992
	(0.062)	(0.047)	(0.035)
School Located in Urban Area (Y/N)	0.922	0.951	0.877***
	(0.055)	(0.039)	(0.031)
Country Characteristics			
Gini Coefficient (0-100)	0.996	1.060***	1.055***
	(0.016)	(0.012)	(0.009)
Poverty headcount ratio (% of population)	1.008*	1.019***	1.007**
	(0.004)	(0.003)	(0.002)
Intentional homicides (per 100,000 people)	1.000	0.988***	0.988***
	(0.004)	(0.003)	(0.002)
Govt. education expenditure, total (% of GDP)	0.878***	0.907***	0.850***
	(0.025)	(0.020)	(0.015)
Constant	0.121**	0.011***	0.033***
	(0.083)	(0.005)	(0.011)
Observations	62,648	62,721	62,737
** p<0.05, ** p<0.001, *** p<0.0001*			

CHAPTER VI: SCHOOL-LEVEL FACTORS ASSOCIATED WITH BULLYING VICTIMIZATION IN LATIN AMERICA AND THE CARIBBEAN

6.1 Introduction

Bullying is a widespread form of violence among youths, affecting about one in three adolescents globally (Elgar, McKinnon, et al., 2015; Richardson, 2018). This type of peer aggression can happen both in person and online, and is defined as unprovoked and repeated harmful actions, where there is a perceived power imbalance between victims and aggressors (Olweus, 1994). As a consequence, bullied youths are more likely to suffer from headaches, anxiety and depression (Due et al., 2005; Menesini, Modena, & Tani, 2009). Young victims may also develop into adults who are more prone to engage in heavy drinking, drug use and suicidal attempts, suggesting bullying's impact can be lifelong (M. J. Kim et al., 2011; Meltzer et al., 2011).

Bullying is part of a larger cycle of violence driven by individuals' experiences both inside and outside their homes. Youths exposed to maltreatment and domestic violence are more likely to repeat these violent acts against their peers and to become more vulnerable to victimization (Bowes et al., 2009). Those living in violent societies, marked by high rates of homicides or in neighborhoods with poor social ties, low cooperation and widespread vandalism are also more susceptible to peer aggression and feeling unsafe (Bowes et al., 2009; Due et al., 2009; Elgar et al., 2009).

Bullying among youths typically takes place inside educational settings and even cyberbullying, which can happen anywhere, is often committed by students from the same

school (D.L. Espelage et al., 2013; National Academies of Sciences & Medicine, 2016). Evidence suggests the school's socioeconomic context (e.g. poverty concentration and socioeconomic inequality) may influence educators' ability to provide a safe and stable environment that is conducive to bullying prevention (Bradshaw et al., 2009). In addition, the socioeconomic context may also impact how students from different socioeconomic backgrounds interact among themselves. For instance, in schools with more pervasive socioeconomic disparities, students with low socioeconomic status may stand out from their peers for not being able to afford the same lifestyle and therefore might become the target of bullying (Tippett & Wolke, 2014).

Governments around the world have started to adopt school antibullying policies and programs as a way to address this widespread problem (OECD, 2010; Plan International and UNICEF, 2015). These interventions typically include the promotion of a positive school climate and peaceful coexistence among students and school staff (National Academies of Sciences & Medicine, 2016; Srabstein et al., 2008; Victora et al., 2011). However, most research on school bullying has been carried out in high income countries in Europe and North America, making it difficult for low and middle-income countries in the Global South to draw from context-appropriate evidence and to design, support, and evaluate school-based antibullying interventions (UNESCO, 2017a).

6.1.1 School Bullying in Latin America and the Caribbean

About 34.2% of students report being bullied at schools in Latin America and the Caribbean (LAC), a rate comparatively lower than in other regions of the Global South, including the Eastern and Southern African (50%) and the Middle East and North African

(44.6%) regions (Richardson, 2018). However, the LAC regional average obscures large differences across countries (Elgar, McKinnon, et al., 2015; Richardson, 2018). For instance, while just 27% of students in Grenada experienced bullying over a one-month period, that figure was about 43% of Brazilian students and close to 60% in the Dominican Republic (Richardson, 2018). Disaggregated data by sex also show a concerning picture for male students in the region, where almost one out of every two reports being bullied in countries such as Argentina, Barbuda, Panama, Paraguay and Peru (Richardson, 2018).

Schools in Latin America and the Caribbean face many challenges in providing quality and safe education. Compared to high income countries, schools in the region have more crowded classrooms, higher student-teacher ratios, and more unequal distribution of resources (Soledad Bos, Moffa, & Zoido, 2016). As a result, LAC students have worse academic outcomes than their peers in Europe and North America, scoring lower in reading, science and math tests, for example (Gamboa & Waltenberg, 2012).

Schools in the LAC region are also embedded in some of the most violent and unequal nations in the world (Ortiz & Cummins, 2011; UNODC, 2015), which have been noted as risk factors for student bullying (Elgar et al., 2019; Elgar, McKinnon, et al., 2015; Elgar et al., 2013). Neighborhood violence often affects LAC schools. In Brazil, about 15% of students reported skipping class due to concerns for their safety along the school commute (The Brazilian Institute of Geography and Statistics, 2016). These estimates might be even higher in some LAC areas affected by long-lasting armed conflicts such as former guerrilla zones in Colombia (Villar-Márquez, 2010) and in the Brazilian favelas (Debarbieux, 2003). Feeling unsafe at school also increases the likelihood of students skipping class or dropping out altogether (Astor,

Benbenishty, Zeira, & Vinokur, 2002; Melo & Garcia, 2016), further complicating student performance and other academic outcomes. Therefore, it is particularly important to understand the potential protective and risk factors posed by the school context as a means to reduce peer violence in Latin American and Caribbean countries.

This paper expands on existing research of school contextual factors impacting bullying, by investigating the relationship between schools' socioeconomic context and bullying victimization in Latin America and the Caribbean. Two key aspects of schools' socioeconomic characteristics were analyzed (i.e. socioeconomic mean and inequality) to answer the following questions: 1) Is there an association between bullying victimization and schools' socioeconomic context in Latin America and the Caribbean? 2) Does the nature or strength of the association between bullying victimization and student socioeconomic status change as a function of the schools' socioeconomic context? 3) Does school climate impact the relationship between bullying victimization and schools' socioeconomic context? 4) Is the relationship between bullying victimization and schools' socioeconomic context different across LAC countries?

Analyses results should help to inform which schools and students at higher risk, and to understand whether initiatives aimed at improving school climate can potentially mitigate the effects of school socioeconomic disadvantage on bullying.

6.2 Methods

The theoretical framework for the present study utilized Bronfenbrenner's Ecological model to structure a multilevel analysis encompassing both individual and school-level factors. Two theories guided the selection and application of specific concepts. The first theory, Fundamental Causes of Health Inequalities (FCHI), informed the focal relationship between

schools' socioeconomic context and student bullying. FCHI was applied in framing bullying victimization as a negative health-related outcome, one which people with higher socioeconomic status (SES) can use their flexible resources to avoid and/or mitigate its effects. For instance, higher SES parents are more likely to engage in school activities and to advocate on their children's behalf if the need arises (Hill et al., 2004). Thus, through this "spillover effect", higher SES youths might be less likely to be the victims of bullying even if they attend socioeconomically disadvantaged schools.

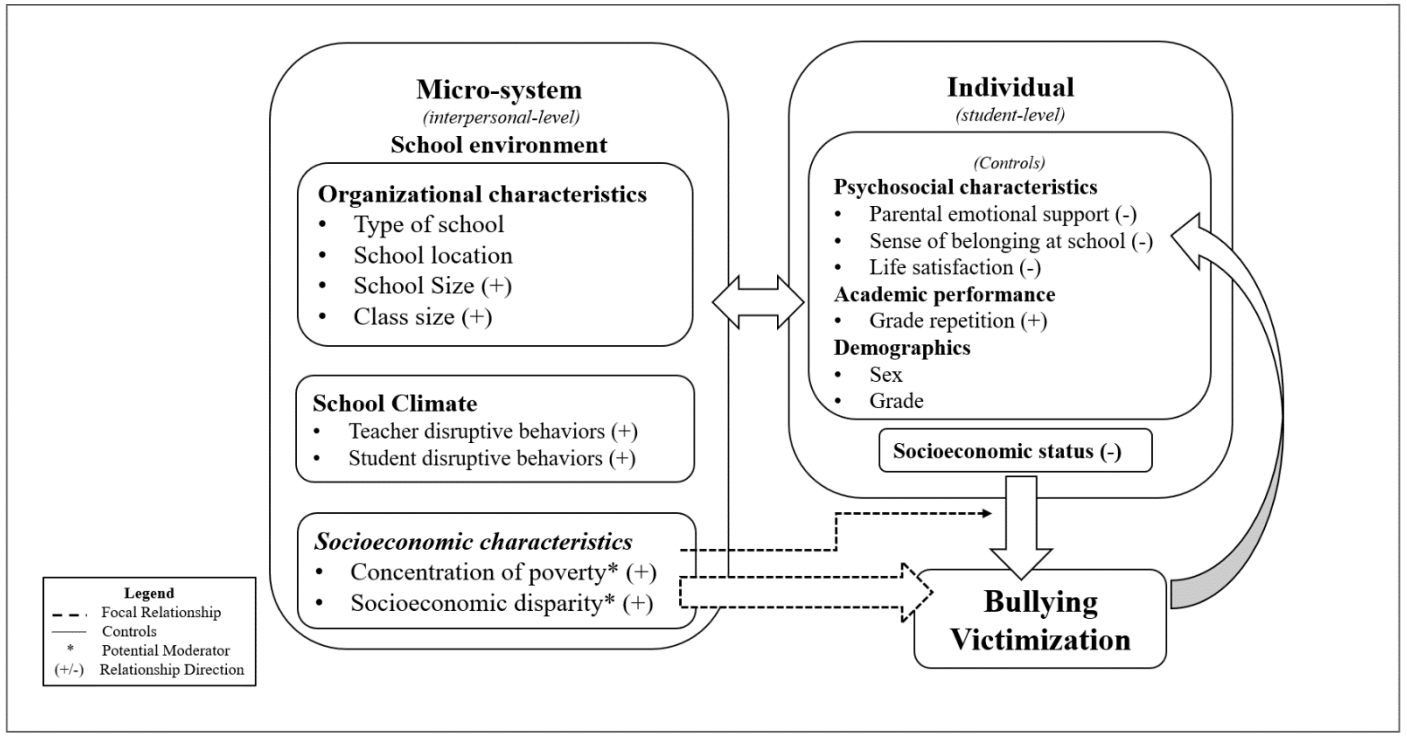
The second theory, Social Disorganization, focuses on environmental characteristics associated with violence and delinquency. According to this theory, violence does not arise from individual traits or dispositions, but from the social disconnect brought about community poverty, inequality, disenfranchisement and instability (Kubrin & Weitzer, 2003). Applied to the school context, social disorganization research has highlighted some key factors pertaining to schools' organizational and climate characteristics shown to impact bullying in the U.S., including student-teacher ratio and suspension rates (Bradshaw et al., 2009; C. Wang, Berry, & Swearer, 2013).

Figure 6.1 depicts the conceptual model guiding the present analyses [Figure 6.1]. The micro-system on the left represents the school environment and includes three broad factors (i.e. schools' organizational, climate, and socioeconomic characteristics), while students' individual profile is shown on the right. Variable selection was informed by existing research on the topic, in addition to the aforementioned theories (F. J. Elgar, McKinnon, et al., 2015b; F. J. Elgar, Pfortner, et al., 2015; Glew, Fan, Katon, Rivara, & Kernic, 2005; Hong & Espelage, 2012; Tippett & Wolke, 2014).

The signs in front of each variable indicate the expected direction of their association. The bidirectional arrows signify that the relationship between factors is not limited to one-way associations. In addition, although the present model does not include arrows within systems (for clarity and conciseness purposes), factors within each system are also likely to relate to each other.

The dashed arrows at the bottom of the figure represent the key associations of interest. The arrow connecting the schools' socioeconomic characteristics to student bullying, depicts the direct effect of this contextual factor. The arrow linking schools' socioeconomic characteristics to the relationship between students' SES and bullying depicts a hypothesized cross-level interaction between schools' socioeconomic context (i.e. socioeconomic mean and inequality) and student SES. This hypothesized interaction suggests that the bullying risk across different levels of student SES is contingent upon the socioeconomic context of the school attended.

Figure 6.1 Aim 2- School-level Factors Associated with Bullying Victimization in Latin America and the Caribbean



In addition to schools' socioeconomic context, another two broad factors are identified under the micro-system. The first, school organizational factors, such as large school and classroom sizes may affect bullying because larger schools with less adult supervision can make it easier for aggressors to act without consequences (Bradshaw et al., 2009; Hong, Voisin, Cho, & Espelage, 2016). The second, school climate, captures a multidimensional concept involving the prevailing atmosphere of the educational institution and embodies academic, community and safety and aspects of the school. A negative school climate can contribute to student bullying because students feel less supported and connected to their peers and teaching staff, making them more vulnerable to peer violence (Varela et al., 2019).

It is also important to note that bullying is a complex phenomenon that can be impacted by a variety of factors not presently listed, including youths' sexual orientation or whether there are antibullying laws in place (D. L. Espelage, Basile, De La Rue, & Hamburger, 2015; Hatzenbuehler et al., 2015). The conceptual model presented in section 3.5 of chapter three provides a more holistic overview of the theorized relationships between and across systems.

6.2.1. Data and Variable Description

The present study used data from the OECD's student and school questionnaires from the 2015 Program for International Student Assessment (PISA). Eight participating countries in Latin America and the Caribbean collected data on bullying victimization at the national level, totaling 74,162 students in 2,612 schools[3]. The eight countries were: Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Mexico, Peru, and Uruguay.

[3] A total of 34 (0.004%) students across 2 schools were removed due to a data discrepancy. The 2 schools were listed as having 0 students.

Individual Level

Individual-level variables were drawn from the student context questionnaire. They included the outcome variable (i.e. "any bullying") as well as students' socioeconomic status (SES), demographic and psychosocial characteristics, and academic performance. Bullying victimization is the key outcome variable and was operationalized as a dichotomous variable (i.e. "**any bullying**"). Students who reported suffering any type of bullying aggression "a few times a month" and "once a week or more" were coded as "Yes". The variable "**overall SES**" (Bottom/Middle/Top Terciles) was coded as within-country terciles using PISA's overall SES index, a standardized index with an OECD mean of zero and a standard deviation of one (OECD, 2017c).

The variables corresponding to student demographics were: 1) "**male**" (Y/N) and 2) "**grade**" (behind country's modal grade/ in country's modal grade for 15-year-old students/ ahead of country's modal grade). The variable "**repeated grade**" (Y/N) was selected as a proxy for students' academic performance. Variables related to adolescents' psychosocial well-being were: 1) "**parental emotional support**" (Above /Below Average); 2) "**school belonging**" (Above /Below Average); and 3) "**life satisfaction**" (0-10)[4].

School Level

The student context questionnaire was used to compute two school-level variables: "**socioeconomic mean**" (Top/Middle/Bottom Terciles) and "**inequality**" (Least/Middle/Most Terciles). These two variables were calculated using the overall SES index. The "**socioeconomic**

[4] Section 5.2.1 in chapter 5 provides a more detailed description of how all individual-level variables were constructed.

mean" variable was created by obtaining the mean overall SES for every student sampled at any given school. The **"inequality"** variable was obtained by calculating the standard deviation of each school's overall mean SES. Higher values for each variable indicated higher SES mean and more inequality, respectively. This operationalization approach is in line with previous studies of school SES and inequality in high-income countries (Due et al., 2009; Elgar et al., 2013). These values were later grouped into within-country terciles, in which the reference categories were schools in the highest mean SES and least SES inequality percentiles.

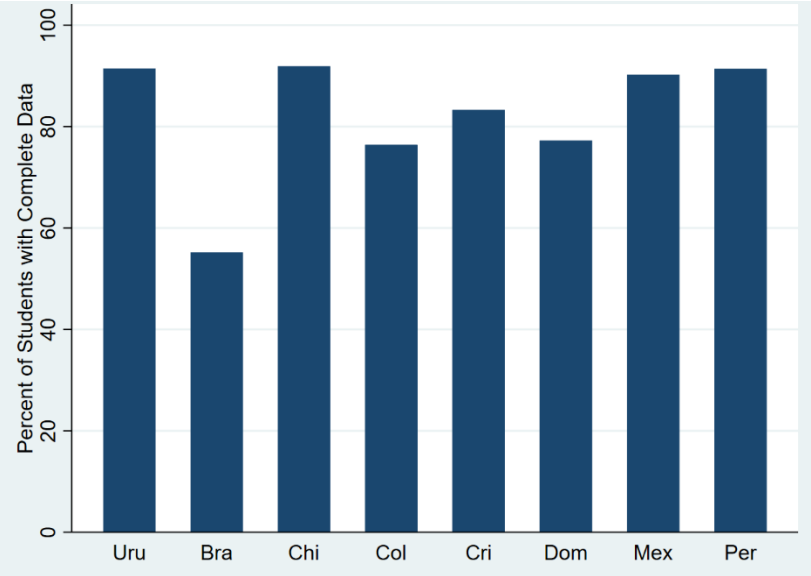
Four variables capturing school organizational characteristics were included as control variables; 1) "**public school**" (Y/N); 2) "**school located in urban area**" (Y/N); 3) "**average class size**" (13-18 / 23-28/ 33-38 /43-53); 4) "**school size**"(399 students or fewer/ 400-899/ 900-1999/ 2000 or more).

Two proxy variables concerning student-teacher and student-student relationships were used to assess school climate: "**teacher behaviors hindering learning**" (Bottom/Middle/Top terciles) and "**student behaviors hindering learning**" (Bottom/Middle/Top terciles). These variables were recoded into within-country terciles using available PISA indexes, with top terciles indicating more disruptive behaviors. Each PISA index contained five questions about student/teacher disruptive behaviors with four response categories each ranging from "not at all" to "a lot". Student-related behaviors included skipping class and lack of respect for teachers, while teacher behavior questions addressed teachers' resistance to change, failure to meet students' needs and being too strict with students.

Missing Data and Sensitivity Analysis

About 75% of the students in the sample had no missing data (n=55,678). Brazil stood out for having the highest percentage of students with incomplete observations (47.1% of all Brazilian students). Chile, Peru, and Mexico had the lowest rates of missing data (8.0%, 8.8%, and 9.4%, respectively).

Figure 6.2 Percent of Students with Complete Data, by Country. PISA 2015



A more in-depth analysis[5] of missing patterns revealed that those with incomplete data were more likely to suffer from bullying victimization, to attended schools with lower socioeconomic means, and with more inequality. In line with previous multilevel studies of school bullying, the present study opted to carry out a listwise deletion of missing observations

[5] Complete results of these analyses are available in the appendix section of this chapter.

(Allison, 2002; Smokowski, Cotter, Robertson, & Guo, 2013). Another reason multiple imputation was not carried out in the present study is their increased complexity in the analysis of multilevel models using both school and student level weights. Moreover, in cases where there are both random slopes and cross-level interactions, advanced methods for generating imputation models are not yet available in standard statistical software packages (Grund, Lüdtke, & Robitzsch, 2017). Finally, the high volume of missing observations in Brazil would also demand a highly accurate imputation model, which is unlikely to be achieved using the existing dataset.

Given the patterns of missing data and PISA's sampling methods, a series of sensitivity analyses were conducted to assess changes in the magnitude, direction and significance of the school SES coefficients under four different scenarios; 1) without Brazilian students; 2) without students in schools with 4 or fewer students sampled; 3) without students in schools in which all students reported no bullying; and 4) without private schools. Analysis results showed no significant differences in the key coefficients of interest (i.e. school socioeconomic mean and inequality). Moreover, it is unlikely that school-wide inferences would be appropriate in cases where just 4 or fewer students were sampled, even though empirical evidence from the sensitivity analysis did not show significant differences. Thus, the selected subsample for the following analyses included students with complete data *and* attending schools with 5 or more students sampled. The selected subsample prompted a sample size reduction of just 0.54% (going from 55,439 to 55,137) plus a slight increase in the ICC from 0.33 to 0.34. Detailed results of the sensitivity analyses are reported in the appendix section of this chapter.

6.2.2 Analytical Approach

Multilevel models were selected for this cross-sectional study. Individual-level models were not appropriate since error estimates for students within the same school tend to correlate, thus violating an important assumption for multivariate regression (Bickel, 2007). Multilevel modeling procedures account for non-independence of observations (students within schools) and allow for correlated error structures (Diez-Roux2000; Luke 2004). Although the nested structure of the data could be adjusted using clustered variance estimators, there are other advantages to a multilevel approach, such as providing level-1 and level-2 effect estimates and allowing for cross-level interactions, making it possible to assess the effect of school-level factors on student-level outcomes (Bickel, 2007; Bradshaw et al., 2009).

Multilevel models were built iteratively using logistic regression to obtain odds ratios and 95% confidence intervals. All analyses specified a Bernoulli distribution and a logit link function. Most models used the default Gauss–Hermite integration method, with the exception of the crossed random-effects models, which used the Laplace estimation of maximum likelihood (Bradshaw et al., 2009). Both student and school weights were used in the analyses. The scale of student-level weights was adjusted so that they could be summed to the effective sample size of their corresponding second-level cluster. This approach is in line with previous multilevel analysis of PISA data (Rabe-Hesketh & Skrondal, 2006). All analyses were conducted using the *meglm* command in STATA 16.1. Potential multicollinearity problems among school-level variables were examined since their occurrence could result in biased estimations of the variances of random components and their standard errors (Bickel, 2007). A matrix of correlations is available in appendix table 6.3.

Model 1 provided the intraclass correlation coefficient (ICC) measuring the crude between-school variance in exposure to bullying. Model 2 included student-level characteristics and country fixed-effects. School-level random effects in this model allowed for the inspection of whether the association between individual SES and bullying victimization varied across schools within each country. Models 3 and 4 included the two measures of school socioeconomic context (i.e. SES mean and inequality) separately, plus school-level control variables. Subsequent models were tailored to each research question and included, the addition of random slopes, cross-level interaction effects between students and school, and the addition of school climate variables. In addition to the pooled analyses, separate models were also built for each individual country to obtain country-specific coefficients for the key variables of interest. Three level models, taking into consideration country-level variables, were not considered appropriate given the small sample size (n=8) at the third level (i.e. country).

Post estimation analyses were also conducted to obtain marginal effects and median odds ratios of bullying victimization based on the contribution of both fixed and random effects (Merlo et al., 2006). The MOR corresponds to the median value of the odds ratio between the greatest risk school and the lowest risk school, when picking a pair of students with similar covariates (e.g. both male, in the same modal school grade, etc.), but attending two different, randomly picked, schools (Merlo et al., 2006). The MOR can be interpreted as the increase median risk students would have if they moved to a school with higher bullying risk (Due et al., 2009; Merlo et al., 2006). The MOR formula is as follows: MOR= exp[√(2x area-level variance)x0.675] (Merlo et al., 2006; Rabe-Hesketh & Skrondal, 2006).

6.3 Results

6.3.1 Descriptive Statistics and Bivariate Results

Students were divided uniformly across all three socioeconomic terciles, reflecting how this variable was calculated [Table 6.1]. The study population was evenly divided between males and females (49.7% and 50.3%, respectively). Most students were behind the country's modal grade (47%), followed by the modal grade (45.6%), and nearly one in three students in the LAC region had repeated a grade (29.7%). Regarding school characteristics, 39.3% of students attended schools in the lowest socioeconomic mean tercile, while 32.2% attended schools with the most socioeconomic inequality, reflecting how these variables were calculated. In addition, most students attended public schools (72.1%), located in suburban or rural areas (61.9%), and with less than 900 students (79.8%).

Bivariate analyses of survey weighted data indicated no significant differences in bullying prevalence according to individual socioeconomic status. Those behind the country's modal grade, who repeated a grade, had a lower sense of school belonging, parental emotional support, and life satisfaction had higher unadjusted rates of bullying victimization. Moreover, although male students comprised around 50% of the study population, they made up 57% of all bullied students.

Regarding school-level characteristics, bullying did not appear to significantly vary according to schools' SES mean and inequality. There was also no difference in victimization according to school location, and student behaviors hindering learning. Teacher behaviors hindering learning and school size were statistically significantly associated with bullying. Lastly, differences in bullying prevalence were also noted across countries. For instance, while

Brazilian students accounted for about 30% of the study population, they represented 25.7% of bullied students. On the other hand, students in the Dominican Republic accounted for just 3% of the population but represented close to 5% of all bullied students.

Table 6.1 Descriptive Statistics, Survey Weighted Percentages and 95% Confidence Intervals, by Bullying Victimization. PISA 2015 (N= 55,137)

	No		Yes		Total	P-Value
Individuals Characteristics	%	CI	%	CI	%	
Student Socioeconomic Status						
Top	33.9	(31.6, 36.3)	34.4	(31.4, 37.5)	34.0	0.866
Middle	30.2	(28.9, 31.5)	29.7	(27.7, 31.8)	30.1	
Bottom	36	(33.7, 38.3)	35.9	(33.2, 38.7)	35.9	
Sex						
Female	52.1	(51.1, 53.1)	43.0	(41.1, 44.9)	50.3	0.000
Male	47.9	(46.9, 48.9)	57.0	(55.1, 58.9)	49.7	
Grade						
Behind	45.3	(42.2, 48.5)	53.8	(49.9, 57.5)	47.0	0.000
Modal Grade	46.9	(43.9, 50)	40.3	(36.8, 44)	45.6	
Ahead	7.7	(7, 8.6)	5.9	(5.1, 6.9)	7.4	
Grade Repetition						
No	71.9	(69.9, 73.7)	64.2	(61.4, 67)	70.3	0.000
Yes	28.1	(26.3, 30.1)	35.8	(33, 38.6)	29.7	
School Belonging						
Top	48.9	(47.8, 50)	35.2	(33.3, 37)	46.2	0.000
Bottom	51.1	(50, 52.2)	64.8	(63, 66.7)	53.8	
Parental Support						
Top	50.8	(49.6, 52.1)	41.8	(39.9, 43.8)	49.0	0.000
Bottom	49.2	(47.9, 50.4)	58.2	(56.2, 60.1)	51.0	
Life Satisfaction (0-10)	8.1	(8.0, 8.1)	7.3	(7.2, 7.4)		
School Characteristics						
School Socioeconomic Mean						
Top	33.9	(30.3, 37.8)	31.7	(27.7, 36)	33.5	0.069
Middle	27.2	(24.1, 30.6)	27.2	(23.7, 31)	27.2	
Bottom	38.9	(35.1, 42.7)	41.1	(36.9, 45.5)	39.3	
School Inequality						
Least	36.0	(32.4, 39.8)	33.5	(29.5, 37.7)	35.5	0.072
Middle	32.1	(28.6, 35.8)	33.4	(29.3, 37.7)	32.3	
Most	31.9	(28.5, 35.6)	33.1	(29.2, 37.3)	32.2	
School Type						
Private School	28.2	(24.8, 31.9)	26.8	(23, 30.9)	27.9	0.194
Public School	71.8	(68.1, 75.2)	73.2	(69.1, 77.0)	72.1	
Class Size						
13-18	10.8	(8.8, 13.1)	12.1	(9.7, 15)	11.1	0.050

Table 6.1 Descriptive Statistics, Survey Weighted Percentages and 95% Confidence Intervals, by Bullying Victimization. PISA 2015 (N= 55,137)

Individuals Characteristics	No		Yes		Total	P-Value
	%	CI	%	CI	%	
23-28	26.8	(23.4, 30.4)	26.0	(22.3, 30.1)	26.6	
33-38	35.2	(31.6, 39)	33.0	(29.1, 37.2)	34.8	
43-53	27.2	(23.9, 30.7)	28.8	(25, 33)	27.5	
School Location						
Suburban/Rural	61.5	(57.7, 65.2)	63.4	(59, 67.5)	61.9	0.111
Urban	38.5	(34.8, 42.3)	36.6	(32.5, 41)	38.1	
School Size						
<400	44.1	(40.2, 48.0)	46.3	(41.9, 50.7)	44.5	0.038
400-899	35.4	(31.8, 39.1)	35.1	(31.1, 39.4)	35.3	
900<	20.5	(18.2, 23.0)	18.6	(16.2, 21.2)	20.1	
Teacher Behaviors Hindering Learning						
Least Disturbing	42.8	(39, 46.6)	40.9	(36.7, 45.3)	42.4	0.038
Middle	31.7	(28.1, 35.4)	30.9	(27, 35.1)	31.5	
Most	25.6	(22.6, 28.8)	28.2	(24.4, 32.2)	26.1	
Student Behaviors Hindering Learning						
Least Disturbing	42.3	(38.5, 46.1)	42.6	(38.2, 47)	42.3	0.378
Middle	30.6	(27.2, 34.2)	29.3	(25.6, 33.2)	30.3	
Most	27.1	(24, 30.6)	28.1	(24.5, 32.1)	27.3	
Country						
Uruguay	0.9	(0.7, 1)	0.7	(0.6, 0.9)	0.8	0.000
Brazil	30.9	(27.5, 34.6)	25.7	(22.3, 29.4)	29.9	
Chile	5.0	(4.2, 6.1)	4.5	(3.7, 5.5)	4.9	
Colombia	12.9	(10.9, 15.2)	14.1	(11.8, 16.9)	13.1	
Costa Rica	1.1	(0.9, 1.3)	1.2	(1, 1.5)	1.1	
Dominican Republic	2.7	(2.2, 3.3)	4.7	(3.8, 5.8)	3.1	
Mexico	34.3	(30.3, 38.5)	38.2	(33.5, 43)	35.1	
Peru	12.2	(10.6, 14.1)	10.8	(9.1, 12.7)	11.9	

**Design-based F-tests calculated with survey weights*

6.3.2 Multilevel Regression Results

Research question 2.1: Is there an association between bullying victimization and schools' socioeconomic context in Latin America and the Caribbean?

The null model yielded an ICC of 0.034, indicating that about 3.4% of the variance in student bullying occurred between schools [Table 6.2]. After accounting for school clustering

and other school and individual-level factors, students in the bottom SES tercile were less likely to be bullied than those at the top (OR= 0.82; 95% CI = 0.72, 0.94). Males were more likely to be bullied compared to females (OR= 1.43; 95% CI = 1.32, 1.56), and those behind the modal grade had 1.21 times the odds of being bullied compared to students in the modal grade (OR= 1.21; 95% CI = 1.08, 1.36). Lastly, school belonging, parental emotional support and life satisfaction were all inversely related to the odds of bullying.

After accounting for school clustering, the odds of bullying for students attending schools with more socioeconomic inequality were 10% higher than those attending schools with the least inequality, although that association was not statistically significant (OR= 1.10; 95% CI = 0.98, 1.24). None of the selected school-level factors was consistently significantly associated with bullying victimization.

Table 6.2 Multilevel Logistic Regression Models (OR and 95% CI, or Variances and SE) for Schools Variance in Bullying Victimization Among 15-year-old students in Latin America. PISA 2015

	1	2	3	4	5
Fixed Effects					
Individuals Characteristics					
Overall SES Terciles (1st= ref.)					
Middle		0.90*	0.87*	0.87*	0.87*
		(0.80,1.00)	(0.77,0.98)	(0.78,0.98)	(0.77,0.98)
Bottom		0.86*	0.82*	0.83*	0.82*
		(0.76,0.96)	(0.72,0.94)	(0.73,0.94)	(0.72,0.94)
Male (Y/N)		1.43***	1.43***	1.43***	1.43***
		(1.32,1.56)	(1.32,1.56)	(1.32,1.56)	(1.32,1.56)
Grade (Modal Grade =ref.)					
Behind Modal Grade		1.21**	1.21*	1.21**	1.21**
		(1.08,1.36)	(1.08,1.36)	(1.08,1.36)	(1.08,1.36)
Ahead of Modal Grade		0.88	0.88	0.87	0.87
		(0.76,1.01)	(0.76,1.01)	(0.76,1.01)	(0.76,1.01)
Grade Repetition(Y/N)		1.15*	1.14*	1.14*	1.14*
		(1.02,1.29)	(1.02,1.28)	(1.01,1.28)	(1.01,1.27)
School Belonging (Above=ref.)					
Below Avg.		1.58***	1.58***	1.58***	1.58***

Table 6.2 Multilevel Logistic Regression Models (OR and 95% CI, or Variances and SE) for Schools Variance in Bullying Victimization Among 15-year-old students in Latin America. PISA 2015					
	1	**2**	**3**	**4**	**5**
		(1.45,1.73)	(1.45,1.72)	(1.45,1.72)	(1.45,1.72)
Parental Support (Above=ref.)					
Below Avg.		1.12*	1.12*	1.12*	1.12*
		(1.02,1.24)	(1.02,1.24)	(1.02,1.24)	(1.02,1.24)
Life Satisfaction (0/10)		0.87***	0.87***	0.87***	0.87***
		(0.86,0.89)	(0.86,0.89)	(0.86,0.89)	(0.86,0.89)
School Characteristics					
Socioeconomic Mean (Top=ref.)					
Middle			1.01		1.00
			(0.89,1.13)		(0.89,1.12)
Bottom			1.03		1.02
			(0.90,1.18)		(0.89,1.17)
Inequality (Least=ref.)					
Middle				1.12	1.12
				(0.99,1.26)	(0.99,1.26)
Most				1.10	1.10
				(0.98,1.24)	(0.98,1.24)
Public School (Y/N)			1.00	0.99	0.99
			(0.88,1.15)	(0.88,1.12)	(0.86,1.13)
Average Class Size (33-38 Students=ref.)					
13-18			1.15	1.18*	1.18*
			(0.99,1.34)	(1.02,1.37)	(1.01,1.37)
23-28			1.02	1.03	1.03
			(0.90,1.16)	(0.91,1.17)	(0.91,1.17)
43-53			1.08	1.09	1.09
			(0.97,1.20)	(0.98,1.21)	(0.98,1.21)
School Located in Urban Area (Y/N)			0.94	0.93	0.94
			(0.85,1.04)	(0.84,1.04)	(0.85,1.04)
School Size (400-899=ref.)					
<399			0.95	0.96	0.95
			(0.86,1.06)	(0.86,1.06)	(0.86,1.06)
900-1999			0.92	0.92	0.91
			(0.82,1.02)	(0.83,1.02)	(0.82,1.01)
Country (Uruguay=Ref.)					
Bra		0.91	0.92	0.91	0.91
		(0.80,1.03)	(0.80,1.05)	(0.80,1.05)	(0.80,1.05)
Chi		1.06	1.09	1.09	1.08
		(0.92,1.21)	(0.94,1.27)	(0.93,1.27)	(0.93,1.26)
Col		1.32***	1.35***	1.34***	1.34***
		(1.15,1.51)	(1.17,1.55)	(1.17,1.55)	(1.16,1.55)
Cri		1.47***	1.48***	1.49***	1.49***
		(1.27,1.69)	(1.28,1.72)	(1.28,1.73)	(1.28,1.73)
Dom		2.33***	2.30***	2.30***	2.30***
		(1.99,2.72)	(1.95,2.72)	(1.94,2.72)	(1.95,2.72)
Mex		1.38***	1.39***	1.39***	1.39***
		(1.20,1.58)	(1.19,1.62)	(1.19,1.62)	(1.19,1.62)

Table 6.2 Multilevel Logistic Regression Models (OR and 95% CI, or Variances and SE) for Schools Variance in Bullying Victimization Among 15-year-old students in Latin America. PISA 2015					
	1	**2**	**3**	**4**	**5**
Per		1.03 (0.89,1.19)	1.01 (0.87,1.17)	1 (0.86,1.16)	1 (0.86,1.16)
Random Effects					
Variance Between Schools	0.116	0.054			
SE	(0.027)	(0.02)			
Among individuals at the top SES tercile			0.087	0.087	0.087
SE			(0.047)	(0.047)	(0.047)
Among individuals in the middle SES tercile			0.106	0.104	0.103
SE			(0.057)	(0.057)	(0.057)
Among individuals at the bottom SES tercile			0.073	0.071	0.072
SE			(0.053)	(0.051)	(0.052)
ICC	0.034				
Obs.	55,137	55,03	55,030	55,029	55,029
F		35.99	23.35	23.6	22.64

Exponentiated coefficients; 95% confidence intervals in parentheses- * p<0.05, ** p<0.001,*** p<0.0001
Models: 1- Null Model; 2- Adjusted for individual level characteristics only; 3- Adjusted for individual and school characteristics, plus *school SES Mean* and random slope; 4-Adjusted for individual and school characteristics, plus *school SES Inequality* and random slope; 5-Adjusted for individual, school SES characteristics and random slope.

Table 6.3 contains the median odds ratios (MOR) for all students (model 1 and 2) and for those in each of the three SES terciles (models 3-5) [Table 6.3]. Calculations drew from the variance and standard errors in table 6.4 and allowed for the comparison of the impact of school-level factors in bullying probability variations for each of these student groups.

There were differences in the probability of being bullied at the school level and the addition of individual-level factors slightly lowered that risk (from $MOR_{model1} = 1.49$ to $MOR_{model2} = 1.31$). Students in the bottom SES tercile had the lowest median odds ratio ($MOR_{model5} = 1.37$) compared to students in the middle and top SES terciles ($MOR_{model5} = 1.45$ and 1.41, respectively). The lower MOR among the poorest students indicates that the school context

was less likely to determine the risk of being bullied among those students compared to their wealthier peers.

Table 6.3 Median Odds Ratios (MOR) for Schools Variance in Bullying Victimization Among 15-year-old students in Latin America. PISA 2015

	1	2	3	4	5
Compared with another school	1.49	1.31			
Individuals in the top SES tercile			1.41	1.41	1.41
Individuals in the middle SES tercile			1.46	1.45	1.45
Individuals in the bottom SES tercile			1.37	1.36	1.37

Note: MOR= Median Odds Ratio
Models: 1- Null Model; 2- Adjusted for individual level characteristics only; 3-Adjusted for individual and school characteristics, plus *school SES Mean* and random slope; 4-Adjusted for individual and school characteristics, plus *school SES Inequality* and random slope; 5-Adjusted for individual, school SES characteristics and random slope.

Research question 2.2. Does the nature or strength of the association between student socioeconomic status and bullying victimization change as a function of the schools' socioeconomic means?

Cross-level interactions were tested between individuals' SES and each of the schools' socioeconomic context variables [Table 6.4]. The interaction between individual SES and school SES mean was not statistically significant. Conversely, the interaction between individual student SES and school SES inequality was statistically significant. The interaction effects were illustrated in Figure 6.3, for a more intuitive interpretation.

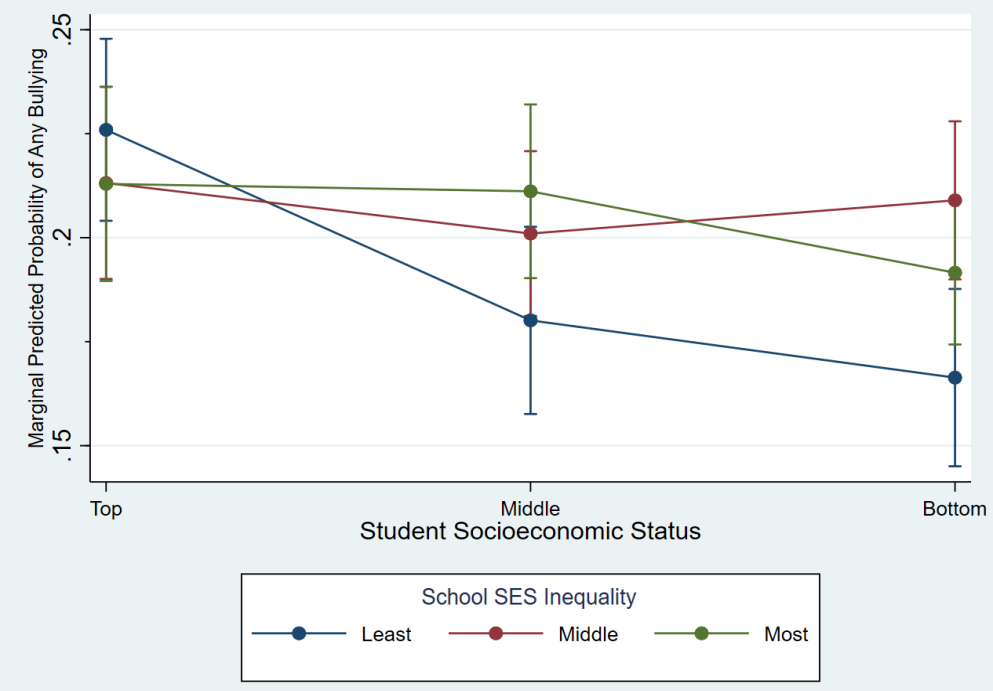
Table 6.4 Multilevel Logistic Regression Models (OR) for Schools *Socioeconomic Mean* and *Inequality* Variance in Bullying Victimization, Plus Cross-Level Interaction Effects. PISA 2015

	Socioeconomic Mean	Socioeconomic Inequality
Individuals Characteristics		
Overall SES Terciles (Top= ref.)		
Middle	0.80*	0.74*
	(0.67,0.95)	(0.61,0.90)
Bottom	0.98	0.67**
	(0.72,1.33)	(0.54,0.83)
School SES Characteristics		
School Socioeconomic Mean (Top= ref.)		
Middle	1.01	
	(0.84,1.21)	
Bottom	0.96	
	(0.74,1.25)	
School Inequality (Least=ref.)		
Middle		0.92
		(0.76,1.12)
Most		0.92
		(0.75,1.13)
Interactions		
School Socioeconomic Mean (Top= ref.)		
Middle # Middle	1.05	
	(0.82,1.34)	
Middle # Bottom	1.26	
	(0.89,1.79)	
Bottom # Top	1	
	(1.00,1.00)	
Bottom # Middle	0.85	
	(0.59,1.23)	
Bottom # Bottom	0.87	
	(0.59,1.30)	
School Inequality (Top=ref.)		
Middle # Middle		1.25
		(0.95,1.64)
Middle # Most		1.34*
		(1.00,1.79)
Bottom # Least		1
		(1.00,1.00)
Bottom # Middle		1.46*
		(1.11,1.92)
Bottom # Most		1.3
		(0.97,1.74)
Obs.	55,030	55,029
F	20.6	21.07

*Exponentiated coefficients; 95% confidence intervals in parentheses- * p<0.05, ** p<0.001, *** p<0.0001. Models adjusted for individual, school SES characteristics, country, and random slope.*

Among students in schools with lower levels of socioeconomic inequality, there was a significant difference in bullying probability for students from different SES backgrounds [Figure 6.3]. Furthermore, higher SES students had a higher probability of bullying compared to lower SES students attending schools with similar levels of inequality (Pr=0.23, 95% CI=0.21,0.25, and Pr=0.17, 95% CI=0.15,0.19, respectively). On the other hand, for students in schools with the most SES inequality, there were no significant differences in bullying probability for students from different SES backgrounds.

Figure 6.3 Marginal Predicted Probability of Bullying Victimization. Cross-Level Interaction Between Student SES and School Socioeconomic Inequality. PISA 2015



Model adjusted for: sex, grade, grade repetition, type of school, class and school size, school location, school belonging, life satisfaction, parental support, country, and random slope.

Research question 2.3. Does a positive school climate impact the relationship between bullying victimization and schools' socioeconomic context?

Four models were run to assess the interaction between school socioeconomic context (i.e. socioeconomic mean and inequality) and school climate (i.e. teacher and student behaviors hindering learning) [Table 6.5]. The interaction effects were not statistically significant for any of the models tested, meaning that the direct effects of schools' socioeconomic context on bullying risk were not modified by the schools' climate.

Table 6.5 Multilevel Logistic Regression Models (OR and 95% CI) for Bullying Victimization with Interaction Effects between School Socioeconomic Context and Climate. PISA 2015

	Models with Teacher Behaviors Hindering Learning		**Models with Student Behaviors Hindering Learning**	
Individuals Characteristics				
Overall SES Terciles (Top= ref.)				
Middle	0.87*	0.87*	0.87*	0.87*
	(0.77,0.98)	(0.77,0.98)	(0.77,0.99)	(0.77,0.99)
Bottom	0.82*	0.83*	0.83*	0.83*
	(0.72,0.94)	(0.73,0.94)	(0.72,0.94)	(0.73,0.94)
School SES Characteristics				
School Socioeconomic Mean (Top= ref.)				
Middle	1.06		0.99	
	(0.86,1.31)		(0.80,1.22)	
Bottom	1.05		0.98	
	(0.85,1.30)		(0.80,1.21)	
School Inequality (Least=ref.)				
Middle		1.19*		1.19
		(1.01,1.40)		(0.98,1.45)
Most		1.16		1.14
		(0.97,1.38)		(0.95,1.37)
Teacher Behaviors Hindering Learning (Least=ref.)				
Middle	1.05	1.18		
	(0.86,1.28)	(0.96,1.46)		
Most	1.2	1.1		
	(0.92,1.56)	(0.89,1.38)		
Student Behaviors Hindering Learning (Least=ref.)				
Middle			0.92	1.01
			(0.74,1.13)	(0.82,1.24)
Most			0.94	1.01
			(0.77,1.15)	(0.80,1.27)
Interactions				

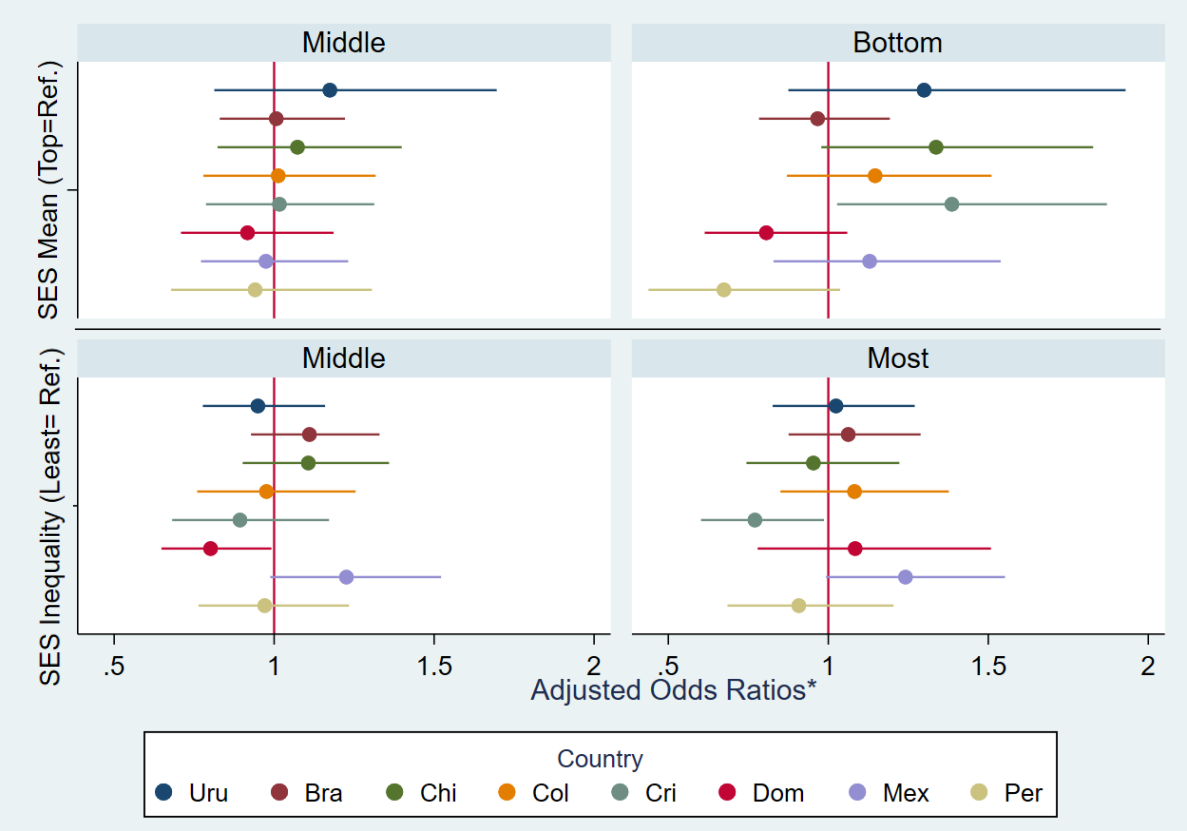
Table 6.5 Multilevel Logistic Regression Models (OR and 95% CI) for Bullying Victimization with Interaction Effects between School Socioeconomic Context and Climate. PISA 2015				
	Models with Teacher Behaviors Hindering Learning		Models with Student Behaviors Hindering Learning	
School Socioeconomic Mean (Top= ref.)				
Middle #Least	1		1	
	(1.00,1.00)		(1.00,1.00)	
Middle # Middle	0.99		1.03	
	(0.76,1.29)		(0.78,1.38)	
Middle # Most	0.84		1.02	
	(0.62,1.15)		(0.79,1.33)	
Bottom # Least	1		1	
	(1.00,1.00)		(1.00,1.00)	
Bottom # Middle	0.95		1.07	
	(0.73,1.23)		(0.81,1.41)	
Bottom # Most	0.99		1.07	
	(0.71,1.38)		(0.82,1.40)	
School Inequality (Least=ref.)				
Middle #Least		1		1
		(1.00,1.00)		(1.00,1.00)
Middle # Middle		0.8		0.88
		(0.61,1.04)		(0.68,1.15)
Middle # Most		1.01		0.91
		(0.76,1.34)		(0.68,1.22)
Most # Least		1		1
		(1.00,1.00)		(1.00,1.00)
Most # Middle		0.81		0.92
		(0.62,1.04)		(0.71,1.20)
Most # Most		1.02		0.97
		(0.77,1.34)		(0.74,1.27)
Obs.	55,030	55,029	55,030	55,029
F	19.77	20.15	19.26	19.7
Model adjusted for: sex, grade, grade repetition, type of school, class and school size, school location, school belonging, life satisfaction, parental support, country, and random slope.				

Research question 2.4. Is the relationship between bullying victimization and schools' socioeconomic context different across LAC countries?

Across most of the LAC countries assessed, there was no significant association between schools' socioeconomic context and bullying after controlling for school clustering, plus individual and school factors [Figure 6.4]. Two exceptions were noted in Costa Rica and

Mexico. In Costa Rica, students attending the schools at the bottom SES mean tercile had significant higher odds of bullying compared to those in wealthier schools (OR= 1.39 95% CI = 1.03, 1.87). In addition, those attending schools with more inequality had 23% lower odds of bullying in comparison to those with less inequality (OR= 0.77 95% CI = 0.60, 0.99). While in Mexico, schools with more inequality had consistently higher odds of bullying, although the results were not significant.

Figure 6.4 Adjusted Odds Ratios, and 95% Confidence Intervals for Bullying Victimization According to Schools' Socioeconomic Context, by Country. PISA 2015



Models adjusted for: sex, grade, grade repetition, type of school, class and school size, school location, school climate, school belonging, life satisfaction and parental support.

6.4 Discussion

This study aimed to understand how the school socioeconomic context relates to bullying victimization in Latin America and the Caribbean. Results from the null model indicated that just about 3.4% of the variance in student bullying occurred between schools in LAC countries, while a remaining 96.6% of the variance occurred between individuals within the same schools. Overall, the school context also appeared to be less relevant in explaining bullying variance among poorer students, as evidenced by the lower median odds ratio (MOR) among students in the bottom SES tercile.

These findings are in line with a systematic review of the impact of the school context on various student outcomes. The authors found that for outcomes related to student negative behaviors (e.g. smoking and bullying), all multilevel studies indicated that a very small portion of the variance was attributed to differences between schools (Sellström & Bremberg, 2006). In contrast, the authors noted that studies on positive health-related behaviors, such as physical activity, showed a higher portion of the variance attributed to differences between schools. One potential reason is that physical activity is often contingent upon schools' physical infrastructure (i.e. soccer field, or a gymnasium) which are easier to capture, and might have higher variations from school to school, whereas negative behaviors are more likely to depend on factors that are harder to measure, such as the school's disciplinary climate and student-peer relationships, and therefore are less likely to reveal a striking variation between schools.

A closer inspection of the association between schools' socioeconomic context and student bullying indicated that there were no significant direct effects when assessing school SES mean nor SES inequality. The absence of statistical significance results is in line with previous

studies that used student average SES as a measure of the schools' overall socioeconomic context (Azeredo, Rinaldi, de Moraes, Levy, & Menezes, 2015). Current results stand in contrast with previous studies using the proportion of students eligible for free/reduced meals as a measure of schools' socioeconomic context. In those studies, bullying prevalence was positively associated with schools' proportion of students eligible for food assistance (Azeredo et al., 2015).

PISA's questionnaire measured adolescent socioeconomic status by focusing on measures of parental education, occupation and household ownership of television sets, bathrooms, and cars. However, as the OECD recognizes, PISA's current SES measures might not be well suited to differentiate, among adolescents from lower SES backgrounds, which ones are living in poverty and deprivation (Willms & Tramonte, 2015). Yet, there is arguably a large socioeconomic difference between students who do not have a television set and those who need food assistance or lack access to running water. Therefore, it is possible that the SES measures used in the present study did not capture the full range of students' socioeconomic characteristics, rendering the present assessment of school socioeconomic context less sensitive to changes in bullying prevalence.

A cross-level interaction between school SES inequality and student SES was shown to be statistically significant. Differences in bullying exposure according to student SES varied significantly among those attending schools with the least SES inequality. Moreover, in these schools, students at the top SES tercile had higher odds of being bullied compared to those in the bottom SES tercile. These cross-level interaction results were counter to the hypothesized

direction of the association, in which it was believed that students at the bottom SES tercile, and those attending more unequal schools would be at higher odds of bullying victimization.

The analysis of the interplay between school climate and socioeconomic context on student bullying exposure indicated that school climate, measured by student-peer and student-teacher relationships, did not moderate the relationship between schools' socioeconomic context and student bullying. This finding differs from previous research conducted in Chile, which assessed the school climate by using measures of student-staff bonding (Varela et al., 2019). One potential reason for the lack of statistical significance in the present study is that the variables used as proxies for school climate were derived from the school principals' questionnaire. Thus, they only captured the principals' perspective of school climate, instead of providing a more comprehensive assessment that also included teachers, principals, students and parents' perceptions (Berkowitz, Moore, Astor, & Benbenishty, 2017).

Analysis results of individual level factors indicated that bullying prevalence was higher among males, students behind the countries' modal grade, those who repeated a grade, had lower life satisfaction, and lower sense of parental support and school belonging. These results are supported by existing evidence both across LAC countries (Delprato et al., 2017; Varela et al., 2019) and in countries in Europe and North America (Glew et al., 2005; J. Wang et al., 2012). With respect to school characteristics, there were no differences in bullying prevalence according to school size, location, and type (i.e. public or private). However, the absence of significant associations might be due to a high rate of missing data among private schools in some of the participating countries.

Except for Costa Rica, individual analyses of the association between school socioeconomic context and bullying did not yield significant results for individual LAC countries. In Costa Rica, the hypothesized higher bullying exposure among students in poorer schools was supported, and Costa Rican students attending the poorest schools had 1.39 times the odds of being bullied compared to those in wealthier schools (OR= 1.39 95% CI = 1.03, 1.87), after controlling for school clustering, and individual and school-level factors. These results also corroborate the hypothesis that the impact of schools' socioeconomic context on student bullying is not homogeneous across countries in the LAC region, and further studies on the drivers of country variations (e.g. policy, cultural norms, etc.) are warranted.

The absence of significant differences in bullying exposure according to schools' socioeconomic contexts, coupled with the significant interaction term between school SES inequality and student SES also suggests that school bullying might be more closely related to student socioeconomic status within the same school, rather than overall differences between schools. That might be because students spend most of their time inside their own school, and it is in these settings that they are exposed to wealthier or poorer peers and the potential peer aggression dynamics. Barriers to being able to afford certain status markers or being accepted into certain status groups can make students more vulnerable to peer violence within their own school community. These relative differences in socioeconomic standing may undermine student cooperation and coexistence, thus weakening social ties and making individuals more prone to commit violent acts against one another.

Finally, findings indicating a low variation in bullying prevalence across schools corroborate antibullying interventions that include tailored approaches to schools' unique student

population and associated risk factors (UNESCO, 2017a). In addition to more effective interventions, the process of developing these policies can also promote awareness about the problem among staff and the school community, and possibly facilitate the implementation process.

6.5 Appendices: Tables and Figures

Appendix Table 6.1 shows the differences between students with complete and incomplete data. Overall, among those with incomplete data, a higher percentage was from the bottom SES tercile compared to those with complete data (36.3% versus 30.0, respectively). Compared to students with complete data, students with incomplete data made up a larger proportion of those who attended private schools were in suburban or rural schools and were in the middle and bottom terciles for student/teacher disruptive behaviors.

Appendix Table 6.1 Student and School Characteristics of those with Incomplete versus Complete Observations. PISA 2015

	Incomplete (%)	Complete (%)	Total (%)	Obs.
Student SES Terciles				
Top	30.9	37.3	35.9	25,804
Middle	32.9	32.7	32.7	23,526
Bottom	36.3	30	31.4	22,577
Total				71,907
P=0.000				
Any Bullying				
No	79.3	80.8	80.5	54,370
Yes	20.7	19.2	19.5	13,141
Total				67,511
P=0.000				
Sex				
Female	50.1	51.8	51.4	38,112
Male	49.9	48.2	48.6	36,050
Total				74,162
P=0.000				
School Type				
Private	50.9	26.6	32.5	24,072
Public	49.1	73.4	67.5	50,090
Total				74,162
P=0.000				
School Location				
Suburban/Rural	76.3	55.0	60.1	44,572
Urban	23.7	45.0	39.9	29,590
Total				74,162
P=0.000				
Teacher Behaviors Hindering Learning				
Least	32.6	37.2	36.6	24,137
Middle	36.1	32.4	32.9	21,726
Most	31.3	30.4	30.5	20,148

Appendix Table 6.1 Student and School Characteristics of those with Incomplete versus Complete Observations. PISA 2015				
	Incomplete (%)	**Complete (%)**	**Total (%)**	**Obs.**
Total				66,011
P=0.000				
Student Behaviors Hindering Learning				
Least	33.4	37.4	36.8	24,332
Middle	30.6	31.0	30.9	20,415
Most	36.0	31.6	32.3	21,304
Total				66,051
P=0.000				
Pearson Chi-Square Tests				

Sensitivity Analysis Results

Appendix Table 6. 2 Sensitivity Analyses for Multilevel Model Selection. PISA 2015

		Socioeconomic Mean[1]		Inequality[1]		Variance Between Schools		Sample Size	ICC
	Models	OR	95% CI	OR	95% CI	Variance	SE		
Listwise deletion only	**1**					0.113	0.027	55,439	0.033
	2					0.051	0.020	55,330	
	3	1.01	(0.92, 1.11)	1.12	(0.90, 1.40)	0.049	0.019	55,324	
	4	1.01	(0.92, 1.10)	1.13	(0.90, 1.41)	0.044	0.018	55,324	
	5	1.00	(0.91, 1.10)	1.13	(0.91, 1.41)	0.005	0.023	55,324	
Listwise deletion + Removing Brazil	**1**					0.109	0.032	43,223	0.032
	2					0.057	0.025	43,161	
	3	1.01	(0.90,1.13)	1.1	(0.85,1.43)	0.053	0.024	43,156	
	4	0.99	(0.90,1.11)	1.11	(0.86,1.44)	0.046	0.022	43,156	
	5	1.00	(0.90,1.12)	1.11	(0.86,1.45)	0.003	0.027	43,156	
Listwise deletion + Removing Schools with <5 students	**1**					0.116	0.027	55,137	0.034
	2					0.054	0.020	55,030	
	3	1.02	(0.93,1.12)	1.24	(0.98,1.56)	0.049	0.006	55,029	
	4	1.01	(0.93,1.11)	1.25	(0.99,1.57)	0.045	0.018	55,029	
	5	1.01	(0.93,1.11)	1.25	(0.99,1.57)	0.008	0.022	55,029	
Listwise deletion + Removing with schools with no bullying[2]	**1**					0.089	0.024	54,713	0.026
	2					0.029	0.018	54,605	
	3	0.97	(0.89,1.07)	1.06	(0.86,1.30)	0.025	0.017	54,605	
	4	0.97	(0.89,1.06)	1.07	(0.86,1.32)	0.022	0.016	54,605	
	5					n/a[3]			
Listwise deletion + Removing	**1**					0.112	0.032	42,967	0.033
	2					0.06	0.026	42,907	
	3	1.01	(0.91,1.13)	1.25	(0.95,1.65)	0.054	0.024	42,907	

Appendix Table 6. 2 Sensitivity Analyses for Multilevel Model Selection. PISA 2015

		Socioeconomic Mean[1]		Inequality[1]		Variance Between Schools		Sample Size	ICC
	Models	OR	95% CI	OR	95% CI	Variance	SE		
Brazil + Schools with <5 students	**4**	1.00	(0.9,1.13)	1.26	(0.96,1.65)	0.046	0.022	42,907	
	5	1.00	(0.90,1.12)	1.27	(0.97,1.66)	0.005	0.026	42,907	
Listwise deletion + Public Schools only	**1**					0.092	0.030	40,517	0.027
	2					0.037	0.023	40,427	
	3	1.00	(0.89, 1.12)	1.13	(0.85, 1.51)	0.033	0.022	40,421	
	4	1.00	(0.89, 1.12)	1.14	(0.86, 1.51)	0.029	0.021	40,421	
	5					n/a[3]			
Listwise deletion + Public Schools only+ Removing schools with <5 students	**1**					0.098	0.032	40,316	0.029
	2					0.043	0.024	40,227	
	3	0.99	(0.89, 1.11)	1.26	(0.93, 1.71)	0.037	0.022	40,226	
	4	0.99	(0.89, 1.11)	1.26	(0.93,1.71)	0.034	0.022	40,226	
	5					n/a[3]			

Exponentiated coefficients; 95% confidence intervals in parentheses- * p<0.05 ** p<0.01*** p<0.001
Models: 1- Null Model; 2- Adjusted for individual level characteristics only; 3- Adjusted for individual and school SES characteristics; 4- Adjusted for individual, school SES characteristics and school climate; 5-Adjusted for individual, school SES characteristics and school climate, plus random slope.
1- School socioeconomic mean and inequality operationalized as continuous variables
2- No school bullying= Every student sampled answered the bullying questions as "no bullying"
3- Model did not converge. Stata issued the error: "cannot compute an improvement -- discontinuous region encountered"

Appendix Table 6. 3 Survey Weighted Correlation Matrix. PISA 2015 (N= 55,678)								
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**
(1) School SES Mean	1							
(2) Inequality	0.2742*	1						
(3) School Type	0.4083*	0.3190*	1					
(4) Class Size	-0.0323*	0.0413*	0.1260*	1				
(5) School Location	-0.3667*	-0.2582*	-0.2489*	0.2097*	1			
(6) School Size	-0.1918*	-0.0227*	0.0959*	0.3616*	0.2673*	1		
(7) Teacher Behaviors	0.1096*	0.1093*	0.3147*	0.0637*	-0.0657*	0.1519*	1	
(8) Student Behaviors	0.2551*	0.1419*	0.3667*	0.0403*	-0.0533*	0.1265*	0.4881*	1
**p<0.05*								

CHAPTER VII: A COMPARATIVE ANALYSIS OF SCHOOL-BASED ANTIBULLYING LAWS ACROSS 11 COUNTRIES IN LATIN AMERICA AND THE CARIBBEAN

7.1 Introduction

During the past 20 years, low and middle-income countries have made great strides in increasing access to primary and secondary education, resulting in a growing proportion of children and adolescents now attending school (The World Bank, 2014). Yet, in many places the rise in school attendance has not been met with improvements in education quality (UNESCO, 2017a). As a result, the global development community and local governments have sought to improve education quality by supporting teacher training, upgrading education facilities and promoting a safer and more welcoming school environment (UNESCO, 2016).

However, despite efforts to make schools safer, thousands of youths suffer from violence at school or live in fear of being targeted (Elgar, McKinnon, et al., 2015; UNESCO, 2017a). Bullying is the recurrent and unprovoked aggression between peers (Olweus, 1994), and it is one of the most widespread forms of school violence (Elgar, McKinnon, et al., 2015). Bullying can be a direct aggression in the form of physical (e.g. punching and pushing) or verbal violence (e.g. calling names), or an indirect aggression in the form of social exclusion (J. Wang et al., 2012). Moreover, bullying can also take place online (e.g. cyber stalking) (D.L. Espelage et al., 2013)

Adolescence (10-19 years) is a period of great social, physical and psychological change, and it is marked by the emergence of strong peer relationships (Viner et al., 2012). Therefore, peer violence such as bullying, can negatively impact adolescents' development and well-being

(Kljakovic & Hunt, 2016). For example, bullying victims are at higher risk of suicide ideation, suicide attempts and self-harm compared to those who are not bullied (John et al., 2018; Y. S. Kim & Leventhal, 2008; D. Nikolaou, 2017). In addition, multi-country, cross-sectional studies have linked frequent bullying victimization to higher odds of having headaches and stomach aches (P. Due et al., 2005), while both cross-sectional and longitudinal studies have found that bullying victims have higher rates of depression and anxiety (Copeland et al., 2013; Gini & Pozzoli, 2009; Kaltiala-Heino et al., 2000; van der Wal et al., 2003). Furthermore, the lifelong effects of bullying can extend beyond adolescents' health by also impacting their educational achievement. Adolescents who are bullied are less likely to feel a sense of belonging to the school community (Glew et al., 2005), have significantly lower math and reading scores (Delprato et al., 2017) and have a higher likelihood of dropping out of high school (Cornell, Gregory, Huang, & Fan, 2013), compared to non-bullied students.

7.1.1 Latin America

The percentage of adolescents who report having been victims of bullying in Latin America and the Caribbean (LAC) ranges from 17% in Uruguay to 30% in the Dominican Republic (OECD, 2017b). Trends have also varied, and while some countries such as Jamaica, Uruguay and Trinidad and Tobago have recorded decreases in bullying (UNESCO, 2017a), other countries, such as Brazil, have had an increase in self-reported bullying victimization (Azeredo et al., 2019; Malta et al., 2014) during the same period.

Similar to their peers around the world, adolescents from LAC countries who experience bullying victimization are also more likely to report mental health problems (Bosa, Bohórquez,

Olarte, & Malaver, 2018). Studies in the region also point that victimization is not equal across groups, and both students with disabilities (Vega López et al., 2013) and LQBTQ students tend to be at higher risk of bullying (Kosciw, 2019).

Bullying is one of the many types of violence youths in the LAC region must navigate daily. In addition, adolescents from LAC countries are exposed to some of the highest rates of violent crime (e.g. assault and homicide) in the world (UNODC, 2015), and are disproportionally affected by interpersonal violence (Global Burden of Disease Pediatrics et al., 2016). The positive association between bullying aggression during adolescence and violent acts in adulthood (M. J. Kim et al., 2011), indicates that bullying prevention should be a priority in any comprehensive effort that LAC governments may undertake to decrease overall violence.

7.1.2 Legal Interventions

Emerging research has linked the enactment of antibullying laws to a reduction in student victimization (Dimitrios Nikolaou, 2017). The development of antibullying laws conveys a clear message that bullying behaviors are unacceptable, raises awareness to the problem and can help to engage broader society in addressing this problem (Hall, 2017; National Academies of Sciences & Medicine, 2016). Antibullying laws can also promote a more sustained and multi-tiered approach in reducing bullying, which may include a combination of universal preventive efforts (e.g. bullying awareness campaigns) and more targeted interventions (e.g. mental health counseling for aggressors) (National Academies of Sciences & Medicine, 2016).

Research on the content of these laws has been scarce and most studies on school-based antibullying laws have been based on state-level legislation in the United States (Hall, 2017). Nevertheless, emerging studies, along with guidelines established by international organizations such as UNICEF and UNESCO, support a few core components including specifications about the scope of application, definition of prohibited behaviors, protocols for when bullying occurs, and preventive measures (Hall, 2017; Hatzenbuehler et al., 2015; National Academies of Sciences & Medicine, 2016; Plan International and UNICEF, 2015; UNESCO, 2017a).

Laws should be explicit as to where, what and who these rules apply and protect. Antibullying laws should have a clear scope, stating for example, the types of school (e.g. public, private), grades and locations (e.g. inside the school, outside the school) covered, and second, prohibited bullying behaviors should be explicitly defined (Hatzenbuehler et al., 2015). Moreover, antibullying laws should also enumerate specific protections for groups (e.g. LGBTQ students or students with disabilities) who are at higher risk of being bullied (Hall, 2017).

Antibullying laws should also support schools in dealing with bullying occurrences. Corrective measures for aggressors, for instance, should prioritize restorative approaches, given their potential to improve school climate and to reduce bullying (UNESCO, 2017a). The provision of mental health services to both victims and aggressors is also an important step in mitigating the consequences of this negative experience (UNESCO, 2017a). Lastly, laws should establish reporting procedures to ensure readily available and confidential means of reporting not only for school staff but for anyone who has witnessed a bullying incident (UNESCO, 2017a).

Strategies for bullying prevention (e.g. awareness campaigns and parent engagement) should also be considered as part of a comprehensive antibullying law (National Academies of Sciences & Medicine, 2016). For example, teacher training on how to identify and address bullying is seen as a key aspect of implementing effective antibullying policies (Stuart-Cassel, Bell, & Springer, 2011; UNESCO, 2017a). It is also important that schools develop their own antibullying policies so that preventive measures are tailored to each school context, and administrators feel empowered to act (Hatzenbuehler et al., 2015). LAC countries have enacted school-based antibullying laws, policies and programs in the past ten years to address the problem (Delprato et al., 2017; Plan International and UNICEF, 2015; Trucco, 2017). Initial efforts, led mainly by international organizations such as UNICEF, have been made to compile these laws and to identify some of their overarching themes (Morales & López, 2019; Plan International and UNICEF, 2015; Trucco, 2017). However, these studies tended to employ a general descriptive approach, as opposed to a more systematic assessment of specific components. The present study used evidence-based guidelines to compare LAC laws against nine specified domains and identifies gaps and opportunities for the legal landscape in the region.

The present study also assessed components related to implementation and enforcement and evaluation and monitoring, given their potential to increase the likelihood of the impact of these laws (Stuart-Cassel et al., 2011). We focus on countries in Latin America and the Caribbean, a region of the world affected by high rates of violence (World Health Organization,

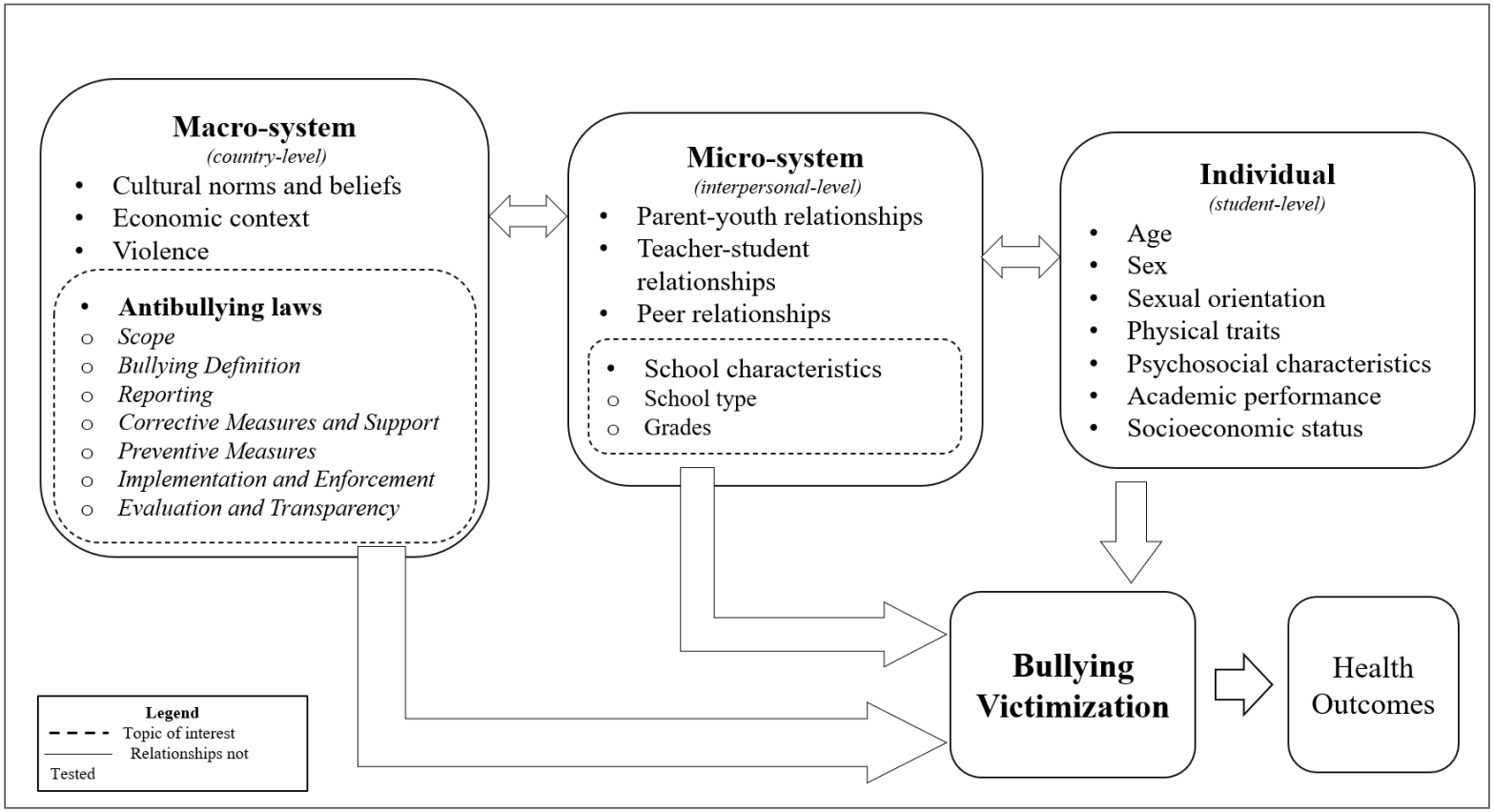
2014b). Results should lay the groundwork for future legal antibullying interventions and impact evaluations across other regions.

7.2 Methods

A comparative policy analysis was conducted to build a new database to assess important aspects of national antibullying laws for countries in Latin America and the Caribbean. This database was created at the WORLD Policy Analysis Center at the University of California Los Angeles.

The following conceptual model locates antibullying laws within a larger backdrop of both distal and proximal factors known to impact student peer aggression [Figure 7.1].

Figure 7.1 Aim 3- Antibullying Laws in Latin America and the Caribbean



*Descriptive Study; Comparative analysis of legislation across countries in the LAC region

The present study targeted the factors inside the dashed lines under the macro and micro systems. In addition to these factors, the conceptual model also includes individual-level factors associated with peer aggression. A more thorough overview of the conceptual model can be found in the second chapter of this dissertation.

7.2.1 Antibullying Database

The database included school-based, antibullying laws, and regulations enacted as stand-alone laws or amendments to existing legislation, up to December 31st, 2018. Laws were classified as school-based if they extended the scope to educational environments using at least one of the following terms: *educational center, educational institution, educational unit, school,* and *school environment.* Laws were classified as antibullying if they included terms such as *violence among peers, school bullying, school harassment.* Since there is no consensus on the Spanish equivalent for the word "bullying" (Marín-Martínez & Reidl Martínez, 2013), all national, school-based laws containing the words *acoso, hostigamiento* and *matonaje* were included in the search strategy. A detailed list of sourcing terms is available in the appendix table 7.1.

Sourcing of antibullying laws in the region was informed by systematic online searches, which entailed targeted Google searches using the native language, for all 33 countries in the region. Thorough reviews were carried out for the first three pages of Google results using the sourcing terms listed on the appendices section. Websites from the countries' national legislative bodies and national education ministries were also searched using the same key search terms. Table 7.1 lists all laws and regulations sourced.

Table 7.1 Overview of School-based, antibullying laws in Latin America and the Caribbean[1]

Country	Name	Year	Type
Argentina	Law 26.892- For the promotion of coexistence and the approach to social conflict in educational institutions	2013	National law and resolutions (226/14 and 217/14)
Bolivia	Law 548- Amendment to the national law on children and adolescents	2014	Amendment and regulation (2377)
Brazil	Law 13.185- Program to combat systematic bullying (bullying)	2015	National law
	Law 13.663- Amendment to the general education law	2018	Amendment
Chile	Law 20.536- Amendment to the general education law, "About school violence"	2011	Amendment
Colombia	Law 1620- The national system of school coexistence and training for the exercise of human rights, education for sexuality and the prevention and mitigation of school violence	2013	National law and regulation (1965)
Costa Rica	Law 9404- For the prevention and establishment of corrective and formative measures against to bullying or bullying	2016	National law
El Salvador	Decree 839- Legal reform of the law of integral protection of children and adolescents	2017	National law
Honduras	Law 96-2014- Against school bullying	2015	National law
Panama	Law 7- That takes measures to prevent, prohibit and punish discriminatory acts and dictates other provisions	2017	National law
Paraguay	Law 4.633- Against school harassment in public educational institutions, private or private subsidized	2012	National law and resolution (5766)
Peru	Law 29.719- That promotes the coexistence without violence in educational institutions	2011	National law and regulation (010-2012)

[1]No law was identified were identified for 22 countries in the region

Coding was conducted by two native speakers who coded all legislative texts separately. A third reviewer, also fluent in one of the LAC countries' native languages, was consulted to resolve a few coding questions. A spreadsheet with the coding dictionary is available in the appendix table 7.2.

7.2.2 Analysis and Variables

The present study provides descriptive data on legal components encompassing nine domains; 1) Scope; 2) Bullying Definition; 3) Protected Groups; 4) Reporting; 5) Corrective Measures; 6) Mental Health Support; 7) Preventive Measures; 8) Implementation and Enforcement; and 9) Monitoring and Evaluation. Variables pertaining to each domain were informed by U.S.-based studies of state antibullying laws and policies, and guidelines established by international organizations including the UNICEF and UNESCO (Hall, 2017; Hatzenbuehler et al., 2015; Plan International and UNICEF, 2015; UNESCO, 2017a). The variable list was adapted to the content and format of LAC national laws in order to facilitate cross-national comparisons. For example, components of U.S. state laws outlining specific school district obligations (Stuart-Cassel et al., 2011) were not included in the present variable list, since organizational structures in the educational system of LAC countries might differ from each other.

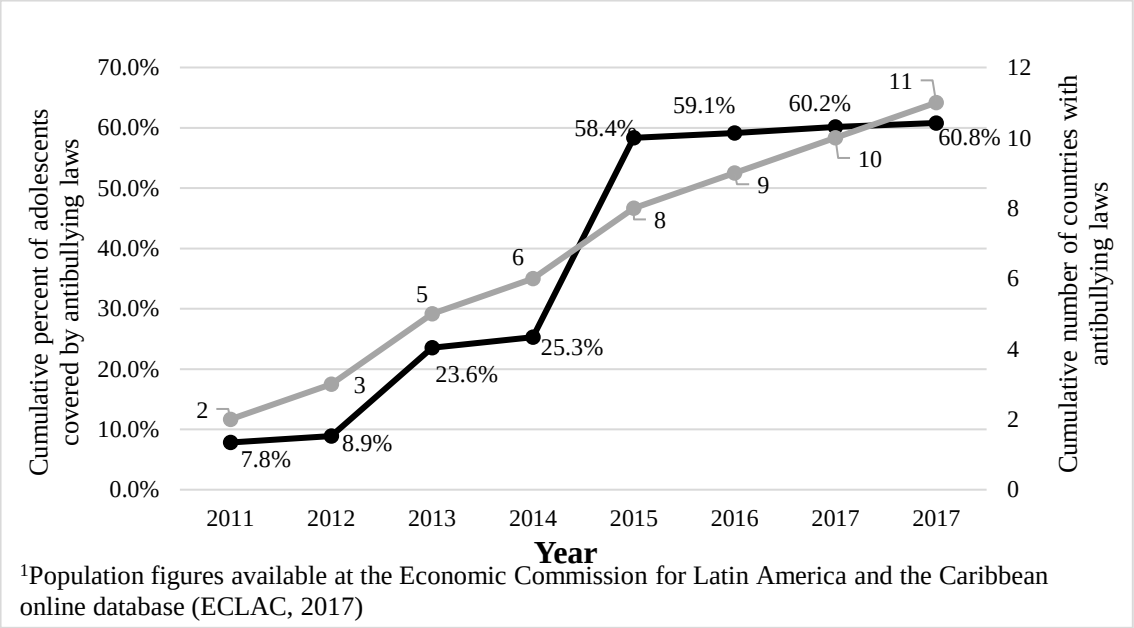
Most variables are dichotomous (yes/no). Consistent with previous content analysis of antibullying laws (Stuart-Cassel et al., 2011), laws containing explicit language pertaining to the variable in question were coded as "yes". In addition to this, "other" was used to code additional

themes that appeared consistently, and "unclear" was used to code the few instances where the legal excerpts were ambiguous.

7.3 Results

Out of the 33 countries in Latin America and the Caribbean, only 11 (33%) have enacted national antibullying legislation, covering about 61 % of adolescents (10-19 years old) in the region (Figure 7.2) (CEPAL, 2017).

Figure 7.2. Percent of the Adolescent Population (10-19 Years) Covered and Number of Countries with National, School-Based, Antibullying Laws in Latin America and the Caribbean[1]



[1]Population figures available at the Economic Commission for Latin America and the Caribbean online database (ECLAC, 2017)

Among these countries, four enacted stand-alone antibullying laws (Brazil, Costa Rica, Honduras, and Paraguay), while the remaining countries amended existing legislation to include bullying prevention within a broader framework of school violence and/or discrimination

prevention. Furthermore, all laws have been enacted within the past 10 years and since 2011 at least one law has been enacted every year.

7.3.1 Scope, Definition and Protected Groups

Laws from all countries mentioned the type of schools under the scope of application, and all were applicable to both private and public schools [Table 7.2]. Eight out of the eleven (73%) also included information about the grades subjected to the scope. Within these eight countries, laws from Chile, Colombia, Costa Rica, and Paraguay were applicable starting with primary education, and up to secondary education. Laws from Argentina, Brazil, Paraguay, and

Table 7.2. Scope & Bullying Definition, By Country Law.

Domain	Variable	Arg	Bol	Bra	Chi	Col	Cri	Els	Hon	Pan	Par	Per
Scope	Type of School	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
	Grade	✔	*	✔	✔	✔	✔	-	-	✔	✔	✔
	Location	✔	-	-	✔	-	✔	✔	✔	-	✔	-
Bullying Definition	Physical	-	✔	✔	-	✔	✔	✔	✔	✔	✔	✔
	Verbal	-	✔	✔	-	✔	✔	✔	✔	✔	✔	✔
	Cyber	-	✔	✔	-	✔	✔	✔	✔	-	-	✔
	Other	✔[1]	✔	✔	✔[2]	✔	✔	✔	✔	✔	✔	✔

* Bolivia's law does not specify grade, but states that the law is applicable to all children in the national territory (Art. 4)

[1] Argentina- Although bullying is not explicitly defined in the law, Article 2 includes online violence as a possible medium in which school violence and harassment can occur. Art. 3 also establishes that schools should be free of physical and psychological violence, which are two forms of school bullying

[2] Chile- Art. 16 B provides a more general definition of bullying including that it can take place through technological means. However, it does not explicitly describe different forms of bullying.

Peru also included higher education institutions.

Most laws included a definition of physical and verbal bullying (82%), which typically consisted of a description of physically aggressive behaviors (e.g. hitting and punching) for the first, and verbally aggressive behaviors (e.g. yelling and calling names) for the second. A

description of bullying aggression through electronic means (i.e. cyberbullying) was also present in most legal texts (63%).

7.3.2 Reporting and Corrective Measures

Laws from eight countries (73%) contained information about reporting procedures in case of bullying [Table 7.3]. In contrast, only laws from three countries (27%) included explicit protections from retaliation for reporting bullying incidents. Although not included in the table, it was noted that laws from Panama and Bolivia also contained information about the consequences for false allegations of bullying.

Table 7.3. Reporting and Corrective Measures, By Country Law.												
Domain	**Variable**	**Arg**	**Bol**	**Bra**	**Chi**	**Col**	**Cri**	**Els**	**Hon**	**Pan**	**Par**	**Per**
Reporting	Procedures for reporting	✔	✔	-	✔	✔	✔	✔	-	✔	-	✔
	Protection from retaliation	-	-	-	-	✔	✔	-	-	✔	-	-
Corrective Measures	Proportional to the offense	✔	-	-	✔	✔	✔	*	✔	✔	✔	✔
	Age appropriate	-	-	-	-	-	✔	-	✔	-	✔	✔
	Respectful	-	-	-	-	-	✔	-	✔	-	✔	✔
	Educational/ Rehabilitation	✔	-	-	✔	✔	✔	-	✔	-	-	✔
	Peaceful Resolution of Conflicts	✔	✔	-	-	✔	-	-	-	-	-	✔

*El Salvador- Article 89 of this law states more generally that schools' disciplinary measures must be proportional and respectful but does not specify corrective measures in instances of bullying.
Notes:
Argentina- Art. 2 mentions respect for dignity in broader terms, but since it was not under the articles about corrective guidelines, it was not coded here.
Bolivia- Art. 153 establishes reporting of cases of bullying for reporting adults. No details are provided for students who report bullying.
Costa Rica- Art. 24 states that school staff who fails to protect students from retaliation will be sanctioned. This is a less direct way to state that students are protected from retaliation, but it is a mean to safeguard their protection, nevertheless.

Out of the five corrective measures assessed, the most common was that consequences should be proportional to the offense (82%) and to provide an educational and rehabilitative opportunity for aggressors (55%). In contrast, laws from only four countries explicitly stated that corrective measures should be tailored to students' age or development stage and be focused on the peaceful resolution of conflicts. Moreover, laws from three countries (27%) explicitly stated that corrective measures should be respectful of aggressors' either physical or psychological integrity.

The Peruvian antibullying law "29719 que Promueve la Convivencia Sin Violencia en las Instituciones Educativas en Perú (2012)", was the only law to include all five corrective measure guidelines. The following excerpt from this law was used to code the corrective measures from table 3:

> *Article 15. · Criteria applicable to corrective measures*
> *For the purposes of this Regulation, all corrective measures directed at students must be:*
> *a) Clear and timely.*
> *b) Repairing and training.*
> *c) Respectful of the development stage of the students.*
> *d) Pertinent to pedagogical development.*
> *e) Respectful of the physical, psychological, and moral integrity of the students.*
> *d) Proportional to the fault committed.*
> *g) Established formally by the educational community and adapted to the conditions and needs of the students.*
> *h) Respectful of the rights of children, girls, adolescents, and human rights*
> *i) Related to the promotion of the Democratic Coexistence.*
> *j) Consistent, fair and impartial, that do not depend on the state of mind of those who apply the corrective measures.*
> *Article 16. · Objective of the corrective measures*
> *The corrective measures must allow the students to reflect and learn from the lived experience, for which it is necessary to have the participation and commitment of the mothers, fathers and legal guardians, in order to contribute to their integral formation and Democratic coexistence in the educational institution.*

7.3.3 Mental Health Support and Preventive Measures

Mental health services for victims were explicitly included in laws from four countries (36%) and laws from five countries (46%) included these services for bullying aggressors as well [Table 7.4]. Laws from Argentina, Panama and Paraguay contained more general language about support and counseling for students involved in bullying but did not explicitly state that these services included mental health counseling. These cases were coded as "other".

Table 7.4. Mental Health Support and Preventive Measures, By Country Law.												
Domain	**Variable**	**Arg**	**Bol**	**Bra**	**Chi**	**Col**	**Cri**	**Els**	**Hon**	**Pan**	**Par**	**Per**
Mental Health Support	Counseling for Aggressors	Other[1]	-	✔	-	✔	-	-	✔	✔	Other[1]	✔
	Counseling for Victims	Other[1]	-	✔	-	✔	-	-	✔	Other[1]	Other[1]	✔
Preventive Measures	School Staff Training	✔	Unclear[2]	✔	✔	✔	✔	-	-	-	✔	✔
	Public Campaigns	✔	✔	✔	-	✔	✔	-	-	✔	-	✔
	Parental Involvement	✔	-	-	✔	✔	✔	-	✔	-	-	✔

[1]Argentina, Panama and Paraguay- Laws in these three countries have provisions establishing that those involved in bullying (which for the purpose of this analysis is assumed to include both victims and aggressors) should have access to specialized support or professional assistance. However the laws do not explicitly state whether these teams provide mental health counselling more specifically.

[2]Bolivia-Part III of art. 152 includes the organization and provision of training program aimed at bullying prevention, however it is not clear for whom the training is intended (e.g. students, school staff, etc.).

Note: Colombia- Art. 33 states that those "affected" by bullying will receive mental health attention. This was interpreted as both victims and aggressors for coding purposes.

Except for El Salvador, laws from all countries explicitly included at least one strategy to prevent bullying. The most common prevention component was the promotion of peaceful coexistence measures (e.g. peaceful resolution of conflict) (82%). School staff training and the creation of public awareness campaigns were included in 64% of the countries' laws. Parental involvement was explicitly included in 55% of the laws.

7.3.4 Implementation and Enforcement, and Monitoring and Evaluation

Laws from all countries included provisions for the development of school-specific policies or activities to address bullying [Table 7.5]. The following example from the Bolivian law "Código Niña, Niño y Adolescente (2014)" exemplifies the legal text used to code this variable:

> *Article 152. (PREVENTIVE MEASURES AND PROTECTION IN THE EDUCATIONAL SYSTEM).*
>
> *I. In order to prevent, stop and eliminate violence, aggression and / or bullying in educational units and / or centers, the following collective actions are established that the educational community will adopt:*
>
> *d) Develop a peaceful and harmonious Coexistence Plan, according to the reality of each educational unit and / or center;*
>
> *(...)*
>
> *II. The Peaceful and Harmonious Coexistence Plan will be mandatory for each of the educational units and / or centers, and must be prepared by the higher authorities, in a participatory and plural open process, which mandatorily convene all the members of the educational community, within the framework of the Political Constitution of the State, international treaties and conventions on rights and guarantees of girls, boys and adolescents, according to the regulations.*

All laws, except for the Salvadorian legislation, also addressed which entities or people were responsible for implementing at least one component of the law, 64% explicitly outlined entities responsible for enforcement, and 55% listed sanctions in cases of failure to comply. In

addition, less than half included any mention of funding of at least one of the components of the law (33%).

Table 7.5. Implementation and Enforcement & Monitoring and Evaluation, By Country Law.

Domain	Variable	Arg	Bol	Bra	Chi	Col	Cri	Els	Hon	Pan	Par	Per
Implementation and Enforcement	Development of school-specific policies/activities	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
	Responsible for implementation defined	✔	✔	✔	✔	✔	✔	-	✔	✔	✔	✔
	Funding	-	-	-	-	✔	-	-	✔	-	✔	✔
	Responsible for enforcement defined	-	-	-	✔	✔	✔	-	✔	✔	✔	✔
	Sanctions for non-compliance	-	-	-	✔	✔	✔	-	✔	✔	-	✔
Monitoring and Evaluation	Evaluation of at least one component of the law	-	✔	-	-	✔	✔	-	-	✔	-	✔
	Systematic collection of bullying data	-	✔	✔	-	✔	✔	-	✔	-	-	✔

Compared to the implementation and enforcement domain, laws from fewer countries included explicit information on monitoring and evaluation. Only laws in five countries (45%) outlined a requirement to evaluate at least one component of the law, while six (55%) established that bullying data had to be systematically collected. Some variation was also noted at the level in which bullying prevalence data was supposed to be collected and compiled ranging from the school to the national levels.

7.4 Discussion

Laws from eleven countries in the LAC region met the present study's inclusion criteria and provided protections to youths in some of the most populous countries in the region, such as Brazil and Colombia. Furthermore, since 2011 at least one new law has been enacted every year, indicating a rising awareness of the problem and growing demand for legislative solutions. Notably, Mexico, the second most populous country in the region, had not enacted a national antibullying law at the time the database was created, and antibullying legislation in the country has been restricted to the state level (Diputados, 2013).

Despite a growing understanding of bullying and its potential impact on youth, most LAC countries (67%) still lack national legislation. Moreover, different patterns emerged between Central America, South America, and the Caribbean. Most laws reviewed were enacted in South American countries, whereas no Caribbean country has adopted an antibullying law, according to this study's inclusion criteria. In contrast to Caribbean nations, antibullying legislation in Central and South America has been steadily increasing over the past ten years. In addition to bullying specific laws, recent analysis indicates that countries in Latin America are also pursuing laws and programs to more broadly support a peaceful school environment (Morales & López, 2019).

The present study contains both encouraging findings, and some gaps and challenges. On a promising note, all legislative texts reviewed included some aspect of three evidence-based components (albeit with varying levels of detail) (Hatzenbuehler et al., 2015); a statement of scope, a description of prohibited bullying behaviors, and the requirement for schools to develop their own antibullying policies. These legal components are important because, as researchers

have noted, they provide school administrators specificity and clarity to address bullying at the schools (Hatzenbuehler et al., 2015).

The degree of legislative detail varied across domains. First, 46% of the laws did not explicitly determine whether incidents of student bullying outside the school were covered by the scope of the law. Establishing whether antibullying laws encompass aggressive behaviors outside the school is important especially because cyberbullying can take place anywhere.

The analysis also indicated that cyberbullying was explicitly included in fewer laws compared to physical bullying. Although the prevalence of cyberbullying in Latin America has yet to be determined (Cabra Torres & Marciales Vivas, 2016), self-reported surveys in the U.S. indicate that victims of physical and verbal bullying are likely to suffer from cyberbullying as well (J. Wang et al., 2012). Furthermore, as internet access and social media use remain high and continue to grow across the LAC region (ECLAC, 2016) new opportunities for online bullying and harassment are likely to appear. Given the link between in person and cyber aggression, and the rise in online activity in the region, LAC governments should seriously consider including cyberbullying in all bullying prevention activities.

Unlike cyberbullying, physical bullying was generally defined across all laws, and the behaviors used to describe it were consistent across laws, possibly indicating a cross-national consensus around bullying at its most commonly understood form. Two countries, Brazil and Costa Rica also included sexual violence as a form of bullying. This example suggests that although the definition of bullying may differ across countries, the variety of bullying forms present in the laws indicates that regional understanding of the topic goes beyond simple

physical aggression and acknowledges the complexity of behaviors that can be categorized as bullying.

Another common component across laws were calls for schools to develop their own antibullying policies. The development of such policies allows the tailoring of antibullying prevention to each school context (Stuart-Cassel et al., 2011). The process of developing these policies can also raise awareness about the problem among school staff and the larger school community, and possibly facilitate the implementation process.

It is also encouraging to note that many laws had a multicomponent approach, where both universal preventive approaches (e.g. schoolwide awareness campaigns) and interventions reaching select students (e.g. mental health counseling) were integrated as part of a multi-tiered preventive framework often recommended by experts (National Academies of Sciences & Medicine, 2016). Furthermore, preventive approaches often went beyond public antibullying campaigns, to include school staff training and parental participation in the prevention toolkit.

Four important gaps stood out. First, few laws included a list of protected groups. Second, a limited number of laws protected students from retaliation for reporting bullying, with two laws adding possible sanctions for false reporting. Third corrective measures, when present, often lacked detail about specific services and protections for both victims and aggressors. Fourth, provisions that can support the implementation of the laws, such as sanctions for noncompliance and evaluation processes, were absent from many laws.

Only laws from three countries (27%) explicitly included a list of protected groups. These figures are in line with U.S. state laws, where a 2011 review concluded that only 37% of states

had laws that enumerate higher vulnerability groups (Stuart-Cassel et al., 2011). Nevertheless, the addition of protected groups is a growing trend in the U.S. (Winburn, Winburn, & Niemeyer, 2014) due to emerging research linking explicit protections to lower rates of bullying victimization (Hall, 2017). However, the adoption of explicit protections may be hindered by a lack of political consensus as the discussion to add protected groups to existing antibullying laws has been fractured along party lines in the U.S. (Winburn et al., 2014). This impasse may also be a problem in some LAC countries such as Brazil, where the federal government has shown increasing animosity towards minority groups such as the LGBTQ community, and Belize and Guyana, where LBGTQ rights are still limited (Corrales, 2015).

Explicit mention of bullying reporting procedures was included in laws from eight countries (73%). Yet, most laws offered few specifics regarding the reporting processes. Moreover, some laws only mention reporting means (i.e. by phone or in person), while others only address reporting from certain individuals (e.g. parents). This finding stands in contrast to expert recommendations that call for convenient and confidential means of reporting not only for school staff but for anyone who has witnessed a bullying incident (UNESCO, 2017a). It was also observed that laws from both Panama and Bolivia, also contained information about possible consequences against false allegations of bullying. These provisions could place an unfair onus on victims and make them less likely to report bullying incidents.

A wide variation in the level of detail was noted in the corrective measures domain, a finding in line with previous reviews of U.S. antibullying laws (Stuart-Cassel et al., 2011). Most laws included at least one measure assessed, and the Peruvian law included all five. One

potential reason is that these disciplinary measures are more likely to be part of individual schools' policies, than delineated by national legislation. Nevertheless, future legislation on the topic needs to explicitly state safeguards for aggressors to ensure that disciplinary measures are restorative and help to re-integrate those students into the academic community.

Most laws also did not explicitly include access to psychological counseling for either victims or aggressors. These services are key to support students' coping skills and to mitigate the potential long-term effects of bullying experiences (Stuart-Cassel et al., 2011). In the context of LAC countries, the provision of these services may be particularly difficult for students in public schools, even in countries where this safeguard exists (Azeredo et al., 2019). Public schools in the region are often under-resourced and tasked with educating youths with fewer means to access psychological support privately (OECD, 2017b). Therefore, ensuring that students across all types of schools and socioeconomic backgrounds have access to the appropriate support services can help to address not only bullying but also to alleviate the social and health inequalities in the region.

This study also noted an absence of explicit sanctions for noncompliance, and legal provisions related to monitoring and evaluation. A lack of sanctions for noncompliance can undermine antibullying laws as there are few consequences to schools that fail to protect youths. Monitoring and evaluation provisions are also key to iterating and revising antibullying laws in order to make them more effective and to measure their impact.

It is important to mention two limitations of the present study. First, the database does not include norms, decrees, or programs issued by national governments or by administrative

agencies such as ministries of education. State, district, and municipal legislation were not examined at this time either. In addition, this study did not assess the implementation of existing laws. Despite these limitations, a documentation and examination of national-level legislation offers an important framework moving forward. Based on the information compiled, future studies can assess whether the enactment of antibullying laws has had a positive impact on the prevalence of school bullying. Furthermore, these studies can investigate, more specifically, which legal components are more meaningful in reducing bullying victimization.

The present study also highlighted some key opportunities moving forward. Lawmakers in the region should consider including explicit protections for vulnerable groups, such as LGBTQ students and those with disabilities, ensure accessible and confidential reporting of bullying incidents and provide more details on corrective measure guidelines. Antibullying laws should also have provisions detailing sanctions for noncompliance and evaluation mechanisms to assess their effectiveness. These changes could facilitate the adoption of these laws and to ultimately create a positive impact on students' safety and well-being.

7.5 Appendix: Tables

Appendix Table 7.1 Search Terms by Language			
Language	**Legal Terms**	**School Terms**	**Bullying Terms**
Spanish	Ley, Legislación	Escuela, liceo, colegio, centro educativo, institución educativa, unidad educativa, entorno escolar.	Acoso escolar, hostigamiento escolar, violência escolar, violencia entre pares, matonaje
English	Legislation, law	School, educational center, educational institution, educational unit, school environment	Violence among peers, school bullying, school harassment
Portuguese	Lei, legislação	Escola, centro educacional, instituição de ensino, unidade educacional, ambiente escolar.	Violência entre pares, bullying, violência escolar
French	Loi, législation	Ecole, lycée, centre éducatif, établissement d'enseignement, unité d'enseignement, environnement scolaire	Violence entre pairs, harcèlement scolaire, violence scolaire, bullying

Appendix Table 7.2 Coding Dictionary						
Domain	**Component**	**Subcomponent**	**Coding Terms**	**Coding Examples**	**Coding Decision Notes**	**Source/Rationale**
1. Scope	Type of School	Public	English: educational institutions, educational units, schools, educational programs, educational establishment, private, public Spanish: instituciones educativas, instituciones de enseñanza, escuelas, unidades educativas, publica, privada Portuguese: instituicoes de ensino, escolas, privada, particular, publica, comunitaria.	Example from Costa Rica: English ARTICLE 5.- Scope of application This law will be applied under the following terms: (...) b) **When students remain in the facilities of educational centers, public and private,** during school hours or outside of these, and in activities organized, sponsored or related to the school and the provision of education service. Spanish ARTÍCULO 5.- Ámbito de aplicación Esta ley se aplicará bajo los siguientes términos: b) Cuando los estudiantes permanezcan en las instalaciones de los centros educativos, públicos y privados, durante los horarios lectivos o fuera de estos, y en las actividades organizadas, patrocinadas o relacionadas con el centro educativo y la prestación del servicio de educación.	Laws that included the coding terms for each variable were coded as "yes".	According to Hatzenbuehler et al. 2015, laws that contained a statement of scope describing where the legislation applies (e.g. inside and/or outside school) were associated with decreased odds of bullying and cyberbullying.
		Private				
		Other				
	Grade	Primary	English: basic, elementary, primary, early education Spanish: básica, primaria, parvularia Portuguese: básica, primaria, fundamental	Example from Peru: English Article 2. · Scope of application The Law and this Regulation are applicable to public and private educational programs a**nd institutions of Basic Education,**	Laws that included the coding terms for each variable were coded as "yes".	

Appendix Table 7.2 Coding Dictionary						
Domain	**Component**	**Subcomponent**	**Coding Terms**	**Coding Examples**	**Coding Decision Notes**	**Source/Rationale**
		Secondary	English: basic Spanish: media Portuguese: media, medio	**<u>Technical-Productive Education and Higher Education Institutes and Schools.</u>** Spanish Articulo 2.· Ambito de aplicacion La Ley y el presente Reglamento son aplicables a los programas e instituciones educativas publicas y privadas de Educacion Basica, Educacion Tecnico-Productiva e lnstitutos y Escuelas de Educacion Superior.		
		Higher	English: superior, university Spanish: superior, universidad, universitario Portuguese: superior			
		All Schools	English: across, all levels Spanish: todos niveles. Portuguese: todos niveis		Laws that explicitly included primary, secondary and higher were also coded as "All schools". Laws that also included other types of schools such as technical and vocational schools were also coded as "All schools"	
	Location	Inside School	English: in the classroom, inside the school, outside the school Spanish: en el aula, espacio físico, dentro, fuera Portuguese: sala de aula, dentro da escola, fora da escola	Example from Honduras: English ARTICLE 2.- For the purposes of this Law, it is understood as: SCHOOL HARASSMENT OR BULLYING: It is any form of mistreatment, aggression, intimidation, contempt, discrimination, exclusion, exercised through a physical act, verbal expression, written or gesture that causes psychological or physical harm, produced among	Laws that included the coding terms for each variable were coded as "yes".	

Appendix Table 7.2 Coding Dictionary						
Domain	**Component**	**Subcomponent**	**Coding Terms**	**Coding Examples**	**Coding Decision Notes**	**Source/Rationale**
		Outside School		schoolchildren and **repeated both in the classroom or in any physical space within the educational center or outside it, carried out directly or indirectly, by means of electronic, technological, computer devices, use of software, social networks, videos, images and other digital systems.** Spanish ARTÍCULO 2.- A los efectos de esta Ley, se entiende por: ACOSO ESCOLAR O BULLYING: Es cualquier forma de maltrato, agresión, intimidación, acción de menosprecio, discriminación, exclusión, ejercida a través de un acto físico, expresión verbal, escrita o gesto que cause un daño psicológico o físico, producido entre escolares de forma reiterada tanto en el aula o en cualquier espacio físico dentro del centro educativo o fuera de éste, realizado directa o indirectamente, por medio de dispositivos electrónicos, tecnológicos, informáticos, uso de software, redes sociales, vídeos, imágenes y demás sistemas digitales.		

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Domain	**Component**	**Subcomponent**	**Coding Terms**	**Coding Examples**	**Coding Decision Notes**	**Source/Rationale**
2. Bullying Definition	Dimensions	Physical	English: physical, hitting, kicking, pushing, shoving around, locking indoors, physical violence, aggresion, property damage Spanish: físico, golpear, patear, empujar, empujar, encerrar adentro, violencia física, agresión, daño a la propiedad Portuguese: físico, batendo, chutando, empurrando, empurrando, trancando dentro de casa, violência física, agressão, danos materiais	Example from Paraguay: English Article 3. Of the types of school harassment or harassment: School harassment or harassment may occur under the following types: **a. Physical:** 1. Direct: Any action that produces non-accidental damage to physical integrity, using the body force or any object that may cause it. 2. Indirect: Any action that generates damage to material goods the person affected by the situation of harassment or school harassment or material property of others, blaming it for this situation. Spanish Artlculo 3o.. De los tipos de acoso u hostigamiento escolar: El acoso u hostigamiento escolar puede darse bajo los siguientes tipos: a. Fisico: 1. Directo: Toda acción que produzca daño no accidental en la integridad fisica, utilizando lafueza corporal o algún objeto que pueda provocarla. 2. Indirecto: Toda acción que genere daño a bienes materiales la persona afectada por la situación de acoso u hostigamiento escolar o bien , de bienes materiales de otros, culpándola a esta de tal situación.	Laws that contained the words physical violence and/or provided examples of such (e.g. punching, slapping, kicking), were coded as "yes".	Used most often cited categories (i.e. Physical, Verbal, Relational and Cyber) from Wang, Iannotti and Nansel, 2009

Appendix Table 7.2 Coding Dictionary						
Domain	**Component**	**Subcomponent**	**Coding Terms**	**Coding Examples**	**Coding Decision Notes**	**Source/Rationale**
		Verbal	English: threat, call mean names, make fun of, tease Spanish: amenaza, llamar nombres malos, burlarse de, burlarse Portuguese: ameaça, chame nomes maldosos, zombar de, provocar	Example from Honduras: English ARTICLE 2.- For the purposes of this Law, it is understood as: School bullying or bullying is considered to be exercised against one or other students in the following manner: (...) **c) Verbal: When there is emotional harm to a student through insults, demeaning actions, ridicule, use of profane vocabulary, in public or privately; Y,** Spanish ARTÍCULO 2.- A los efectos de esta Ley, se entiende por: Se considera Acoso Escolar o Bullying el ejercido contra uno u otros estudiantes de la forma siguiente: (...) c) Verbal: Cuando hay un daño emocional a un estudiante mediante insultos, acciones de menosprecio, burlas, uso de vocabulario soez, en público o privadamente; y, .	Laws that contained the words verbal violence and/or provided examples of such (e.g. insulting, yelling, swearing), were coded as "yes".	

Appendix Table 7.2 Coding Dictionary						
Domain	**Component**	**Subcomponent**	**Coding Terms**	**Coding Examples**	**Coding Decision Notes**	**Source/Rationale**
		Cyber	English: online, internet, cyber, technological, phone, social network, photo Spanish: en línea, internet, ciberespacio, tecnología, teléfono, red social, foto Portuguese: online, internet, cyber, tecnológico, telefone, rede social, foto	Example from Colombia: English ARTICLE 2. Within the framework of this Law, it is understood as: (...) **Cyberbullying or school cyberbullying ~ form of initimidation with deliberate use of information technologies (Internet, virtual social networks, mobile telephony and online video games) to exercise psychological and ongoing abuse.** Spanish (...) Ciberbullying o cyberacoso escolar~ forma de initimidacion con uso deliberado de tecnologías de información (Internet, redes sociales virtuales, telefonía móvil y video juegos online) para ejercer maltrato psicológico y continuado.	Laws that contained the words cyberbullying and/or provided examples of such (e.g. cyberstalking), were coded as "yes".	
		Other	English: psychological, sexual, humiliate, ignore, social, social excluding others, and spreading rumors Spanish: psicologica, sexual, humillar, ignorar, Social, excluir a los demás, difundir rumores Portuguese: psicológico, sexual, humilhar, ignorar, social, exclui outros, espalha rumores	Example from Brazil: English Article 3 Bullying can be classified according to the actions practiced, such as: (...) **VII material: stealing, stealing, destroying belongings of others;** Portuguese Art. 3o (...) VII material: furtar, roubar, destruir pertences de outrem;	Laws that did not clearly define bullying along the four dimensions (i.e. physical, verbal, relational and cyber) but included some bullying behaviorsor other types of definitions of bullying were coded as "yes" for other.	

Appendix Table 7.2 Coding Dictionary						
Domain	**Component**	**Subcomponent**	**Coding Terms**	**Coding Examples**	**Coding Decision Notes**	**Source/Rationale**
3. Protected Groups	-	Race /Ethnicity, Sexual Orientation, Disability, etc	English: discrimination,sexual orientation, nationality, migratory status, ethnicity, sex, socioeconomic status, health condition, disability, religious beliefs Spanish: discriminación,orientación sexual, nacionalidad, estatus migratorio, etnicidad, sexo, estatus socioeconómico, condición de salud, discapacidad, creencias religiosas Portuguese: discriminação, orientação sexual, nacionalidade, status migratório, etnia, sexo, condição socioeconômica, condição de saúde, deficiência, crenças religiosas	Example from the Costa Rica law: English a) Bullying: (...) It is a form of discrimination in the student population towards another or other students by their characteristics or their way of life such as**: sexual orientation, nationality, migratory status, ethnicity, sex, socioeconomic status, health condition, disability, religious beliefs, opinions, practices based on social stigmas and pregnancy,** which may involve intimidation, ridicule, manipulation, the use of force, discrimination, deliberate isolation or any form of mistreatment. Spanish a) Acoso escolar o "bullying": (...) Es una forma de discriminación en la población estudiantil hacia otro u otros estudiantes por sus características o su forma de vida como: orientación sexual, nacionalidad, situación migratoria, etnia, sexo, condición socioeconómica, condición de salud, discapacidad, creencias religiosas, opiniones, prácticas basadas en estigmas sociales y embarazo, la cual puede implicar intimidación, ridiculización, manipulación, el uso de la fuerza, la discriminación, el aislamiento deliberado o cualquier forma de maltrato.	Specific to bullying.	The enumeration of protected groups explains "that bullying may include, but is not limited to, acts based on actual or perceived characteristics of students who have historically been targets of bullying and provides examples of such characteristics." (DOE report, page 6). Research has also linked laws listing sexual minority groups as protected from bullying to lower rates of bullying victimization among LGBTQ students (Hall 2017).

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Domain	**Component**	**Subcomponent**	**Coding Terms**	**Coding Examples**	**Coding Decision Notes**	**Source/Rationale**
4. Reporting	-	Procedures for reporting	English: report, inform, denounce, complaint Spanish: reportar, informar, denunciar, reclamar Portuguese: informar, denunciar, reclamação	Example from Panama: English Article 14. Whenever a case of harassment, sexual or moral harassment, racism and sexism is reported, companies, public institutions, educational centers or professional associations shall prepare a written report on it, which shall contain the details of the investigation, the allegations of the parties, testimony of the witnesses and the other elements of evidence, sanction, dismissal or acquittal. Companies and public institutions should maintain a compilation system in this regard. Failure to comply with this obligation will be sanctioned according to what is established in Article 8. In all cases, the greatest confidentiality is kept, both by the persons who carry out the investigation and by those who are required as witnesses, who will be informed only of the indispensable and observe the greatest reserve. No inquiries will be allowed about the private or sexual life of the plaintiff. Neither will any person who has filed a lawsuit for any of these conducts, appeared as a witness or in any way intervened in the case suffer any harm in his employment or study. **Article 16. When the person is a minor, the claim may be brought by his mother, father or who exercises parental authority. In the**	Any legislation that included information on who must report (e.g. parents, teachers, students, etc.) and/or how reporting must be done was coded as a "yes".	These components are part of the UNESCO's priority actions to tackle school violence and bullying and are also critical to achieve Agenda 2030, in particular SDG 4 and SDG 16. The UNESCO recommends establishing safe, confidential, child-friendly, age- and gender-sensitive complaints and reporting mechanisms that enable victims and bystanders to safely report violence and bullying without fear of reprisals and ensure that all children and adolescents are aware of these.

Appendix Table 7.2 Coding Dictionary						
Domain	**Component**	**Subcomponent**	**Coding Terms**	**Coding Examples**	**Coding Decision Notes**	**Source/Rationale**
				case of a person over fourteen and under eighteen years of age, he will be entitled to present the claim directly. Spanish Artliculo 14. Siempre que se denuncie un caso de hostigamiento, acoso sexual o moral, racismo y sexismo, las empresas, instituciones publicas, centros educativos o gremios profesionales deberan preparar un informe escrito sobre este, que contendra los pormenores de la investigacion, las alegaciones de las partes, declaraciones de los testigos y los otros elementos de prueba, sancion, sobreseimiento o absolucion. Las empresas e instituciones publicas deberan mantener un sistema de recopilacion al respecto. El incumplimiento de esta obligacion sera sancionado conforme a lo establecido en el articulo 8. En todo caso se guardad la mayor confidencialidad, tanto por las personas que realizan la investigacion como por aquellos que son requeridos como testigos, los cuales seran informados solo de lo indispensable y observaran la mayor reserva. No se permitiran indagaciones acerca de la vida privada ni sexual del demandante. Tampoco sufrira perjuicio alguno en su empleo o estudio ninguna persona que haya presentado demanda por cualquiera de estas conductas, haya comparecido		

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Domain	**Component**	**Subcomponent**	**Coding Terms**	**Coding Examples**	**Coding Decision Notes**	**Source/Rationale**
				como testigo o de cualquier forma haya intervenido en el caso. Articulo 16. Cuando la persona sea menor de edad, podran interponer la demanda su madre, padre o quien ejerza la patria potestad. Si se tratara de una persona mayor de catorce y menor de dieciocho afios de edad, estara legitimada para presentar la demanda en forma directa.		
		Protection from retaliation	English: retaliation, actions against, persecution, protection from harm Spanish: represalias, acciones en contra, persecución, protección contra daños. Portuguese: retaliação, ações contra, perseguição, proteção contra danos	Example from Colombia: English Article 41. The Protocols of the educational establishments, purpose, content and application. The Protocols of the educational establishments will be aimed at setting the necessary procedures to assist the educational community in a timely manner in the face of situations affecting school life and the exercise of human rights, Sexual and reproductive. These protocols must define at least the following aspects: (...) 3. The mechanisms by which to protect those who report on the occurrence of situations that affect school coexistence and the exercise of human, sexual and reproductive rights, **of possible actions against them.** Spanish Artículo 41. Los protocolos de los		

Appendix Table 7.2 Coding Dictionary						
Domain	**Component**	**Subcomponent**	**Coding Terms**	**Coding Examples**	**Coding Decision Notes**	**Source/Rationale**
				establecimientos educativos, finalidad, contenido y aplicación. Los protocolos de los establecimientos educativos estarán orientados a fijar los procedimientos necesarios para asistir oportunamente a la comunidad educativa frente a las situaciones que afectan la convivencia escolar y el ejercicio de los Derechos Humanos, sexuales y reproductivos. Estos protocolos deberán definir, como mínimo los siguientes aspectos: (...) 3. Los mecanismos mediante los cuales se proteja a quien informe sobre la ocurrencia de situaciones que afecten la convivencia escolar y el ejercicio de los Derechos Humanos, sexuales y reproductivos, de posibles acciones en su contra.		

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Domain	**Component**	**Subcomponent**	**Coding Terms**	**Coding Examples**	**Coding Decision Notes**	**Source/Rationale**
5. Corrective Measures		Proportional to the offense	English: Proportional, gradual, degree of participation, appropriate Spanish: Proporcional, gradual, grado de participación, edit appropriate, apropiado Portuguese: Proporcional, gradual, grau de participação, Edit appropriate, apropriado	Example from Honduras: English ARTICLE 5.- The administrative actions, treatment and adoption of the disciplinary measures contemplated in Article 4 include the following: All the measures contained in this Article must comply with the condition of being: (...) **6) Proportional to the fault committed;** Spanish ARTÍCULO 5.- Las acciones administrativas, de tratamiento y adopción de las medidas disciplinarias contempladas en el Artículo 4 comprenden lo siguiente: (...) 6) Proporcionales a la falta cometida;	Laws that contained the coding terms were coded as "yes".	This is a common theme found in many laws. In the DOE's seminal review of U.S. state bullying laws, they found that to be a common theme as well, although in that case the state laws had examples of what the range of corrective measures would be. In the DOE report (page 92): *Includes a detailed description of a graduated range of consequences and sanctions for bullying*

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Domain	**Component**	**Subcomponent**	**Coding Terms**	**Coding Examples**	**Coding Decision Notes**	**Source/Rationale**
		Age appropriate	English: age, developmental stage Spanish: edad, etapa de desarrollo Portuguese: idade, estágio de desenvolvimento	English Article 8 ".- Responsibility for compliance with this Law: (...) **determine the responsibility of the members of the educational community in accordance with the degree of participation and the age of the same,** once the individual responsibility in each case has been determined. , the measures established in this law or others set forth in other regulations that govern the subject will be applied. Spanish Artículo 8".- De la responsabilidad por el cumplimiento de la presente Ley:(...)responsabilidad de los miembros de la comunidad educativa de conformidad con el grado de participaciÓn y a la edad de los mismos. Una vez determinada la responsabilidad individual en cada caso, se aplicarán las medidas establecidas en esta ley u otras consignadas en otras normas que riian la materia.	Laws need to state that corrective measures are either age or developmentally appropriate to be coded as a "yes".	This was a common theme found in many laws.

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Domain	**Component**	**Subcomponent**	**Coding Terms**	**Coding Examples**	**Coding Decision Notes**	**Source/Rationale**
		Respectful of youth's integrity	English: physical integrity, emotional integrity, psychological integrity, dignity, human rights Spanish: integridad física, integridad emocional, integridad psicológica, dignidad, derechos humanos Portuguese: integridade física, integridade emocional, integridade psicológica, dignidade, direitos humanos	Example from Costa Rica: English ARTICLE 23.- Proportionality of corrective actions When applying the corrective actions, the following should be taken into account: (...) **b) Corrections may not be imposed contrary to the physical integrity and personal dignity of the student.** Spanish ARTÍCULO 23.- Proporcionalidad de las acciones correctivas Al aplicar las acciones correctivas deberá tomarse en cuenta lo siguiente: (...) b) No se podrán imponer correcciones contrarias a la integridad física y la dignidad personal del estudiante.	This variable checks whether schools have protections against excessive and harmful punishments. Laws that contained provisions stating that corrective measures must be respectful of either integrity and/or dignity were coded as "yes".	Multiple reports from the UNESCO and other UN agencies caution against punitive measures against bullying perpetrators citing that these measures could worsen the situation and make perpetrators more aggressive and isolated. These three variables are common themes across the laws and fit with the restorative approach proposed by the UN agencies. Other potential approaches such as victim-offender mediation, group conferences and peacemaking or restorative circles were not found in the laws,

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Domain	**Component**	**Subcomponent**	**Coding Terms**	**Coding Examples**	**Coding Decision Notes**	**Source/Rationale**
		Educational/ Rehabilitation	English: Educational, pedagocial, learn Spanish: Educativa, pedagocial, aprender, Portuguese: Educativo, pedagógico, aprender	Example from Peru: English Article 16. · Objective of the corrective measures **The corrective measures must allow the students to reflect and learn from the lived experience**, for which it is necessary to have the participation and commitment of the mothers, parents and parents, in order to contribute to their integral formation and Democratic coexistence in the educational institution. Spanish Articulo 16.· Objetivo de las medidas correctivas Las medidas correctivas deben permitir que las y los estudiantes puedan reflexionar y aprender de Ia experiencia vivida, para lo cual es necesario contar con Ia participaci6n y compromiso de las madres, padres de familia y apoderados, a fin de contribuir a su formaci6n integral y a Ia Convivencia Democratica en Ia instituci6n educativa.	This variable assesses whether corrective measures are treated as a learning opportunity for aggressors as opposed to being purely repressive. Laws that referred to pedagogical corrective measures and/or mentioned learning and reflection on those experiences were coded as "yes".	UNESCO REPORT: **Schools can use restorative approaches as an alternative to traditional disciplinary measures, such as suspension or expulsion**, to help to reintegrate perpetrators back into the school community rather than aggravating the risk of isolation and recidivism. The UN Committee on the Rights of the Child has also issued a General Comment in 2011 (No. 13): (...) violence by youth gangs takes a severe toll on children, whether as victims or as participants. Although children are the actors, the role of adults responsible for these children is

Appendix Table 7.2 Coding Dictionary						
Domain	**Component**	**Subcomponent**	**Coding Terms**	**Coding Examples**	**Coding Decision Notes**	**Source/Rationale**
		Peaceful Resolution of Conflicts	English: peaceful, non-violent, conciliatory, conflict resolution Spanish: pacífica, no violenta, conciliadora, resolución de conflictos Portuguese: pacífica, não violenta, conciliatória, resolução de conflitos	Example from Bolivia: English Law No 548: Law on Girl, Boy and Adolescent Code and / or centers, the following collective actions are established that the educational community will adopt: **a) Create and develop non-violence measures to resolve emerging tensions and conflicts;** Spanish Ley No 548: Ley Código Niña, Niño y Adolescente y/o centros, se establecen las siguientes acciones colectivas que la comunidad educativa adoptará: a) Elaborar y desarrollar medidas de no violencia para resolver las tensiones y conflictos emergentes;	Laws that contained the coding terms were coded as "yes".	crucial in all attempts to appropriately react and prevent such violence, ensuring that **measures do not exacerbate violence by taking a punitive approach and using violence against violence.** DOE REPORT: Provisions to address the **mental health needs of students who bully** and students who are targeted by bullying behavior are present in one-quarter (28 percent) of state laws.
6. Mental Health Support	Aggressors	Mental Health Support	English: Psychological counseling, psychologist, mental health counselling, mental health support Spanish: Asesoramiento psicológico, apoyo psicólogico, psicólogo, asesoramiento en salud mental, apoyo en salud mental. Portuguese: Aconselhamento psicológico,apoio psicólogico psicólogo, aconselhamento em saúde mental, apoio em saúde mental	Example from Panama: English Article 9. Whoever is proven to have carried out, in any field, any of the behaviors described in this Law, will be applied according to the gravity of the act and its effector, without prejudice to the fact that the corresponding way is used when the conducts constitute punishable acts following the provisions of the Penal Code, the following sanctions:(...) 4. Temporary suspension for one week and enrollment conditioned for one year for the student of basic education and temporary suspension of two weeks and enrollment conditioned for one year for the	Laws that state psychological or mental health counseling were coded as "yes". Laws that included support services but did not specify which were coded as "Other". Laws that did not include any provision of support were coded as "no".	A common theme found by the DOE report. They defined as the provisions to address the mental health needs of students **who bully and students who are targeted by bullying behavior.**

Appendix Table 7.2 Coding Dictionary						
Domain	**Component**	**Subcomponent**	**Coding Terms**	**Coding Examples**	**Coding Decision Notes**	**Source/Rationale**
				middle school student who harasses another in his school. **In addition, they are obliged to receive treatment in the departments of psychological orientation of educational centers.** The university student will be suspended for a semester or academic semester. In case of recidivism, one year will be separated from the institution. Spanish Articulo 9. A quien que se le compruebe haber realizado, en cualquier ambito, alguna de las conductas descritas en esta Ley, se le aplicaran segun la gravdedad del hecho y sus efector, sin perjuicio de que se acuda a la via correspondiente cuando las conductas constituyan hechos punibles sigun lo establecido en el Codigo Penal, las sanciones siguientes: (...) 4. Suspension temporal por una semana y matricula condicionada por un ano para el estudiante de educacion basica y suspension temporal de dos semanas y matricula condicionada por un ano para el estudiante de educacion media que hostigue a otro en su centro educativo. Ademas, queda obligados a recibir tratamiento en los departamentos de orientacion psicologica de los centros educativos. El estudiante universitario sera suspedndido por un semestre o un		

Appendix Table 7.2 Coding Dictionary						
Domain	**Component**	**Subcomponent**	**Coding Terms**	**Coding Examples**	**Coding Decision Notes**	**Source/Rationale**
				cuatrimestre academico. En caso de reincidencia se le separara un ano de la instituicion.		
	Victims	Mental Health Counseling	English: Psychological, counseling, psychologist, mental health, support, victims, bullied Spanish: Psicología, asesoramiento, psicólogo, salud mental, apoyo, víctimas, acosado. Portuguese: Psicológico, aconselhamento, psicólogo, saúde mental, apoio, vítimas, intimidado	Example from Brazil: English Article 4 The objectives of the Program referred to in the caput of art. 1o: (...) **V provide psychological, social and legal assistance to victims and perpetrators;** Portuguese Art. 4o Constituem objetivos do Programa referido no caput do art. 1o: (...) V dar assistência psicológica, social e jurídica às vítimas e aos agressores;	Laws that state psychological or mental health counseling were coded as "yes". Laws that included support services but did not specify which were coded as "Other". Laws that did not include any provision of support were coded as "No".	

Appendix Table 7.2 Coding Dictionary						
Domain	**Component**	**Subcomponent**	**Coding Terms**	**Coding Examples**	**Coding Decision Notes**	**Source/Rationale**
7. Preventive Measures	-	School Staff Training	English: training teachers, staff, training tools Spanish: capacitacion, formación de profesores, personal, herramientas de formación Portuguese: treinamento de professores, funcionários, ferramentas de treinamento	Example from Mexico (Reglamento): English SECTION I OF THE SOCIAL SCOPE Article 10.- The dependencies and entities of the Federal Public Administration whose functions impact on the social prevention of Violence and crime and within the areas of their competence, shall establish and offer **information and training tools** to parents, **teachers** and students that address the risk factors associated with the different types of violence and harassment in the school environment, as well as those that generate delinquency, in order to detect, prevent, treat and reduce them. Likewise, they should promote actions to eliminate discrimination and promote the principle of proximity for the peaceful resolution of conflicts, through the development and implementation of education strategies and awareness of the population to promote the culture of legality and tolerance. Spanish SECCIÓN I DEL ÁMBITO SOCIAL Artículo 10.- Las dependencias y entidades de la Administración Pública Federal cuyas funciones incidan en la prevención social de la Violencia y la delincuencia y dentro	Any legislation that mentioned training, or training tools for any or all school staff (e.g. teachers, principals, etc.) was coded as "yes".	

Appendix Table 7.2 Coding Dictionary						
Domain	**Component**	**Subcomponent**	**Coding Terms**	**Coding Examples**	**Coding Decision Notes**	**Source/Rationale**
				de los ámbitos de su competencia, deberán establecer y ofrecer instrumentos de información y capacitación a padres de familia, docentes y alumnos que aborden los factores de riesgo asociados a los distintos tipos de Violencia y acoso en el entorno escolar, así como aquellos que generen delincuencia, con la finalidad de detectarlos, prevenirlos, atenderlos y reducirlos. Asimismo, deberán promover acciones para eliminar la discriminación e impulsar el principio de proximidad para la resolución pacífica de conflictos, a través del desarrollo e implementación de estrategias de educación y sensibilización de la población para promover la cultura de la legalidad y tolerancia. "		

Appendix Table 7.2 Coding Dictionary						
Domain	**Component**	**Subcomponent**	**Coding Terms**	**Coding Examples**	**Coding Decision Notes**	**Source/Rationale**
		Public Campaigns	English: campaing, communication, disseminate, raise awareness Spanish: campañas, comunicación, difusión, sensibilización Portuguese: campanha, comunicação, divulgar, sensibilizar	Example from Colombia: English ARTICLE 4. Objectives of the System. The objectives of the national system of school coexistence and training for human rights, education for sexuality and prevention and mitigation of school violence are: (...) 7) **Guide communication strategies and programs for social mobilization,** related to school coexistence, the construction of citizenship and the promotion of human, sexual and reproductive rights. Spanish ARTíCULO 4. Objetivos del Sistema. Son objetivos del sistema nacional de convivencia escolar y formación para los derechos humanos, la educación para la sexualidad y la prevención y mitigación de la violencia escolar: (...) 7) Orientar estrategias y programas de comunicación para la movilización social, relacionadas con la convivencia escolar, la construcción de ciudadanía y la promoción de los derechos humanos, sexuales y reproductivos.	Communication and campaigns aimed at raising awareness among the school community, neighborhood and/or broader society were coded "yes".	

Appendix Table 7.2 Coding Dictionary						
Domain	**Component**	**Subcomponent**	**Coding Terms**	**Coding Examples**	**Coding Decision Notes**	**Source/Rationale**
		Parental Involvement	English: parents, relatives, guardians Spanish: padres, familiares, tutores, apoderados Portuguese: pais, parentes, guardiões	Example from Peru: English Article 13. Delivery of informative bulletin **Every educational institution must deliver at the beginning of the school year to each student and parent an information bulletin tha**t disseminates the rules and principles of healthy coexistence and school discipline, the proscription of all types of physical and psychological violence and all forms of harassment and harassment among students, committed by any means. including virtual, telephone, electronic or other analogous in the educational community. Spanish Articulo 13. Entrega de boletin informativo Toda institucion educativa debe entregar al inicio del ano escolar a cada estudiante y padre de familia un boletin informativo que difunda las normas y principios de sana convivencia y disciplina escolar, Ia proscripcion de todo tipo de violencia fisica y psicologica y de toda forma de hostigamiento y de acoso entre alumnos, cometido por cualquier medio. incluyendo virtuales, telefonicos, electronicos u otros analogos en Ia comunidad educativa.	Legislation that listed parents as part of the group of people that should be communicated about preventive effort (primary prevention) and/or involved in conflict resolution (secondary prevention) were coded as "yes".	Includes a note on communicating/involving, students' families regarding policies related to bullying. (DOE report, page 6).

Appendix Table 7.2 Coding Dictionary						
Domain	**Component**	**Subcomponent**	**Coding Terms**	**Coding Examples**	**Coding Decision Notes**	**Source/Rationale**
8. Implementation and Enforcement		Development of school-specific policies/activities	English: guidelines, manual, policies, plan, develop, establish actions, Spanish: pautas, manual, políticas, planificar, desarrollar, establecer acciones, Portuguese: diretrizes, manual, políticas, planejar, desenvolver, estabelecer ações	Example from Colombia: English **Paragraph 2. The Coexistence Manual shall be constructed, evaluated and adjusted by the educational community composed of students, parents, teachers and teaching directors, under the coordination of the School Committee of Coexistence.** Spanish Parágrafo 2. El Manual de Convivencia deberá ser construido, evaluado y ajustado por la comunidad educativa integrada por los estudiantes, padres y madres de familia, docentes y directivos docentes, bajo la coordinación del Comité Escolar de Convivencia.	Laws that contained requirements for schools to develop actions or guidelines for bullying prevention and/or promotion of peaceful coexistence were coded as "yes".	Hatzenbuehler et all. 2015 found an association between requirements for schools to develop and implement local policies and lower odds of exposure to bullying and cyberbullying in the U.S.

Appendix Table 7.2 Coding Dictionary						
Domain	**Component**	**Subcomponent**	**Coding Terms**	**Coding Examples**	**Coding Decision Notes**	**Source/Rationale**
		Responsible for implementation defined	English: implement, establish actions, mandatory actions Spanish: implementar, establecer acciones, acciones obligatorias. Portuguese: implementar, estabelecer ações, ações obrigatórias	Example from Costa Rica: English ARTICLE 13.- Functions of the groups of coexistence Without prejudice to what is established in the current regulations of the Ministry of Public Education (MEP), the groups of coexistence will have the following functions: **a) Implement the Bullying Prevention Plan prepared by the Ministry of Public Education (MEP), as well as protocols related to the subject.** Spanish ARTÍCULO 13.- Funciones de los grupos de convivencia Sin perjuicio de lo que se establece en la normativa vigente del Ministerio de Educación Pública (MEP), los grupos de convivencia tendrán las siguientes funciones: a) Implementar el Plan de prevención del acoso escolar o "bullying" elaborado por el Ministerio de Educación Pública (MEP), así como los protocolos relacionados con la materia.	Legislation that explicitly outline the parties responsible for implementing the law or aspects of the law (e.g. peaceful coexistence plan) were coded as "yes". This variable does not capture who is responsible for implementation. In some laws the schools are responsible while in others the Secretary of Education is in charge, for example.	These variables are related to the implementation of the law, and the type of components that can make its implementation more likely to succeed.
		Responsible for enforcement defined	English: supervise, compliance, enforcement , ensure adoption Spanish: supervisar, cumplimiento, ejecución, garantizar adopción Portuguese: supervisionar, conformidade,	Example from Paraguay: English CHAPTER IV OF THE APPLICATION AUTHORITY AND THE FINAT {CIATION Article 9 ".- **Designate the Ministry of Education and Culture as the enforcement authority of this Act**,	Legislation that explicitly outline the parties responsible for the enforcement of the law or aspects of the law (e.g. peaceful coexistence plan) were coded as "yes". This variable does not capture who is	

Appendix Table 7.2 Coding Dictionary						
Domain	**Component**	**Subcomponent**	**Coding Terms**	**Coding Examples**	**Coding Decision Notes**	**Source/Rationale**
			fiscalização, garantir a adoção	which shall regulate it and in its capacity as a member of the National System of Protection and Promotion of the Rights of Adolescent Children, may arbitrate with Instances that are part of it and civil society organizations, all actions aimed at achieving compliance with this Law. Spanish CAPITULO IV DE LA AUTORIDAD DE APLICACION Y DE LA FINAT{CIACION Artfculo 9".- Desígnase al Ministerio de Educación y Cultura como autoridad de aplicación de la presente Lley, el cual deberá reglamertarla y en su carácter de integrante del Sistema Nacioná] de Protecóión y Promoción de los Derechos de la Niñezyla Adolescencia, podra árticülar con las instanciás que forman parte del mismo y las organizaciones de la sociedad civil, todas las acciones tendientes a lograr el cumpllmiento de la presente Ley.	responsible for the enforcement, or the enforcement mechanisms. In some laws, enforcement might mean regular checks, in other it might mean the institution responsible for sanctions in case of failure to adopt the law.	
		Sanctions for non-compliance	English: sanctions, non-compliance, omission, Spanish: sanciones, incumplimiento, omisión Portuguese: sanções, incumprimento, omissão	Example from Colombia: English CHAPTER VI ADMINISTRATIVE INFRACTIONS, SANCTIONS AND INCENTIVES **ARTICLE 35. Sanctions.** The behavior of the actors of the system in relation to the omission, non-compliance or delay in the implementation of the Route or in the	Legislation that referred to school and/or school staff sanctions were listed as "yes". This variable did not measure the extent to which sanctions were described, just whether they are mentioned in the law or not.	

Appendix Table 7.2 Coding Dictionary						
Domain	**Component**	**Subcomponent**	**Coding Terms**	**Coding Examples**	**Coding Decision Notes**	**Source/Rationale**
				operation of the levels of the structure of the System shall be sanctioned in accordance with the provisions of the General and Criminal Procedure Code, the Single Disciplinary Code and the Code of Childhood and Adolescence. **ARTICLE 36. Sanctions on private educational institutions**. The certified territorial entities may impose on the private educational institutions that incur any of the conducts referred to in the previous article, any of the following sanctions: 1. Public warning that will be fixed in a visible place of the educational institution and in the respective secretary of education. 2. Public reprimand with indication of the reasons that gave rise to the sanction, through newspaper advertisement of high circulation in the locality, in its absence, of publication in a visible place, for a maximum of one week. 3. Classification of the educational establishment in the controlled regime for the year immediately following the execution of the resolution imposing said sanction, for the purposes of establishing the registration values. 4. Cancellation of the operating license ARTICLE 38. Of the Disciplinary Faults of teachers and official		

Appendix Table 7.2 Coding Dictionary						
Domain	**Component**	**Subcomponent**	**Coding Terms**	**Coding Examples**	**Coding Decision Notes**	**Source/Rationale**
				teaching directors. In educational institutions of an official nature, teachers and teaching managers within the framework of the functions assigned to their respective positions, will be responsible for making effective the implementation of the System within the same "The omission or breach of this duty constitute a disciplinary fault and will result in the penalties provided by law for these servers. Spanish CAPíTULO VI INFRACCIONES ADMINISTRATIVAS, SANCIONES E INCENTIVOS ARTICULO 35. Sanciones. Las conductas de los actores del sistema en relación con la omisión, incumplimiento o retraso en la implementación de la Ruta o en el funcionamiento de los niveles de la estructura del Sistema se sancionarán de acuerdo con lo establecido en el Código General y de Procedimiento Penal, el Código Único Disciplinario y el Código de la Infancia y la Adolescencia. ARTíCULO 36. Sanciones a las instituciones educativas privadas. Las entidades territoriales certificadas podrán imponer a las instituciones educativas de carácter privado que incurran en cualquiera de las conductas de que trata el artículo anterior, alguna de las siguientes		

Appendix Table 7.2 Coding Dictionary						
Domain	**Component**	**Subcomponent**	**Coding Terms**	**Coding Examples**	**Coding Decision Notes**	**Source/Rationale**
				sanciones: 1. Amonestación pública que será fijada en lugar visible de la institución educativa yen la respectiva secretaria de educación. 2. Amonestación pública con indicación de los motivos que dieron origen a la sanción, a través de anuncio en periódico de alta circulación en la localidad, en su defecto, de publicación en lugar visible, durante un máximo de una semana. 3. Clasificación del establecirniento educativo en el régimen controlado para el año inmediatamente siguiente a la ejecutoria de la resolución que imponga dicha sanción, para efectos del establecimiento de los valores de matrícula. 4. Cancelación de la licencia de funcionamiento. ARTICULO 38. De las Faltas Disciplinarias de los docentes y directivos docentes oficiales. En las instituciones educativas de carácter oficial, los docentes y directivos docentes en el marco de las funciones asignadas a su respectivo cargo, serán responsables por hacer efectiva la implementación del Sistema al interior de "las mismas. La omisión o el incumplimiento de este deber constituyen una falta disciplinaria y dará lugar a las sanciones previstas por la ley para estos servidores.		

Appendix Table 7.2 Coding Dictionary						
Domain	**Component**	**Subcomponent**	**Coding Terms**	**Coding Examples**	**Coding Decision Notes**	**Source/Rationale**
		Funding	English: funding, financing, resources Spanish: financiación, financiación, recursos Portuguese: financiamento, financiamento, recursos	Example from Parguay: English **CHAPTER IV ON THE APPLICATION AND FINANCING AUTHORITY** **Article 10.- Financing: The resources that require compliance with this Law will be financed with the items assigned to the application order. The Ministry of Education and Cuttura must specify the specific amount allocated to its application in its budget.** Spanish CAPITULO IV DE LA AUTORIDAD DE APLICACION Y DE LA FINANCIACION Artículo 10.- De la Financiación: Los recursos que requieran el cumplimiento de la presente Ley se financiarán con las partidas asignadas al ór-gano de aplicación. El Ministerio de Educacion y Cuttura deberá detailar de mañera específica en su presupuesto el monto asignado a la aplicación de la misma.	Legislation that included information on financing all or any part of the legislation (e.g. prevention programs, training, etc.) were coded as "yes".	

Appendix Table 7.2 Coding Dictionary						
Domain	**Component**	**Subcomponent**	**Coding Terms**	**Coding Examples**	**Coding Decision Notes**	**Source/Rationale**
9. Evaluation and Monitoring	-	Evaluation of at least one components of the legislation	English: evaluate, evaluation Spanish: evaluar, evaluación Portuguese: avaliar, avaliação	Example from Mexico (Reglamento): English First Section of the Evaluation Article 22.- **The National Center will evaluate the actions carried out to execute the annual program and the results of the previous year.** The result of the evaluation will be sent to the National Council who will make it public in the terms established by the applicable provisions. For the evaluation of the actions referred to in the programs, public human rights organizations, academic institutions and civil society organizations will be convened. The results of the evaluations will determine the continuity of the programs. Article 23.- The National Center shall cooperate with the National Council for the Evaluation of Social Policy or other governmental bodies or society for the development of the respective evaluations. Spanish Sección Primera De la Evaluación Artículo 22.- El Centro Nacional evaluará las acciones realizadas para ejecutar el programa anual y los resultados del año anterior. El resultado de la evaluación se remitirá al Consejo Nacional quien lo hará público en los términos que establezcan las disposiciones aplicables. Para la evaluación de las	Laws that included the words evaluate or evaluation of one or more of its components (e.g. peaceful coexistence committees, bullying awareness campaign, etc.) were coded as "yes".	

Appendix Table 7.2 Coding Dictionary						
Domain	**Component**	**Subcomponent**	**Coding Terms**	**Coding Examples**	**Coding Decision Notes**	**Source/Rationale**
				acciones referidas en los programas, se convocará a los organismos públicos de derechos humanos, instituciones académicas y organizaciones de la sociedad civil. Los resultados de las evaluaciones determinarán la continuidad de los programas. Artículo 23.- El Centro Nacional deberá coadyuvar con el Consejo Nacional de Evaluación de la Política Social u otras instancias gubernamentales o de la sociedad para el desarrollo de las evaluaciones respectivas.		
		Systematic collection of bullying data	English: records, database, statistics, reports Spanish: registros, base de datos, estadísticas, informes Portuguese: registros, banco de dados, estatísticas, relatórios	Example from Honduras: English CHAPTER FOUR TRANSITORY PROVISIONS ARTICLE 10.- The Secretary of State in the Education Office, in coordination with the Municipal Councils of Educational Development (COMDE), the Secretary of State in the Health Department and the State Secretaries that have within their competences the protection to Childhood, Adolescence and Family, **must create a database of all complaints received at the national l**evel, related to bullying, distributed by Educational Centers and by department of the country, for the analysis and direction of future prevention campaigns . The Secretary of State in the	Laws that required the collection and/or reporting of bullying data were coded as "yes". Some laws required this data to be made available to the public in general and others stated that the data would be used by lawmakers. Some also stated the frequency in which reports should be issued, and the hierarchy of reporting (school-level, municipal-level, etc.).	

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Domain	**Component**	**Subcomponent**	**Coding Terms**	**Coding Examples**	**Coding Decision Notes**	**Source/Rationale**
				Education Office must guarantee free and full access to the knowledge of the statistical records published in the Portal of Transparency and Access to Information. Spanish CAPÍTULO CUARTO DISPOSICIONES TRANSITORIAS ARTÍCULO 10.- La Secretaría de Estado en el Despacho de Educación, en coordinación con los Consejos Municipales de Desarrollo Educativo (COMDE), la Secretaría de Estado en el Despacho de Salud y las Secretarías de Estado que tengan dentro de sus competencias la protección a la Niñez, la Adolescencia y la Familia, debe crear una base de datos de todas las quejas recibidas a nivel nacional, relacionadas con el acoso escolar, distribuidas por Centros Educativos y por departamento del país, para el análisis y direccionamiento de futuras campañas de prevención. La Secretaría de Estado en el Despacho de Educación, debe garantizar el libre y pleno acceso al conocimiento de los registros estadísticos publicados en el Portal de Transparencia y Acceso a la Información.		

CHAPTER VIII: KEY FINDINGS, STRENGTHS, LIMITATIONS AND CONTRIBUTION

8.1 Summary of Key Findings

8.1.1 Aim #1

Results from paper one indicated that bullying victimization was positively associated with student socioeconomic status, meaning that students from higher SES backgrounds were generally more likely to report bullying. It was hypothesized that the relationship between bullying and different SES dimensions would not be homogenous, and there would be a: 1) negative association between bullying and family wealth and overall SES; and 2) positive association between bullying and cultural possessions. Therefore, the observed results were counter to the first proposition, but supported the second. Moreover, the significance, direction and magnitude of the association was consistent across the three different types of bullying (e.g. physical, relational, and verbal).

Present findings also showed that bullying was negatively associated with governments' education expenditures and positively associated with national income inequality and poverty rates. These findings highlight the importance of public investment in education not only as a mean to improve educational outcomes, but also to reduce peer violence. These results also provide further evidence that unequal societies may foster harsher social conditions and more widespread peer aggression.

Lastly, it is important to note the PISA dataset had a large percentage of missing observations and data quality was uneven across participating countries and student subgroups. For instance, in Brazil, about one in five students had skipped all six bullying questions, and thus

had no bullying data available. Students from low SES backgrounds were also more likely to skip the bullying questions in many participating countries, which might have impacted the present findings showing lower SES as a protective factor against bullying.

8.1.2 Aim #2

Results of paper two revealed that just 3.4% of the variance in bullying victimization occurred between schools, while 96.6% occurred within schools. The overall school context also appeared to be less relevant in explaining bullying variance among poorer students as evidenced by their lower median odds ratios compared to wealthier students. There were also no significant direct effects of school SES mean and inequality on bullying victimization among the eight LAC countries analyzed, except in Costa Rica. Furthermore, the association between student SES and bullying did not appear to be moderated by schools' socioeconomic context nor the school climate.

8.1.3 Aim #3

Results of paper three indicated that 11 out of the 33 countries (33%) in the LAC region had enacted national, school-based antibullying legislation by December 2018. All laws reviewed were enacted in countries in Central and South America, as no Caribbean legislation met the study's inclusion criteria.

All laws reviewed included evidence-based components linked to lower rates of bullying and cyberbullying, including a definition of the scope of application, examples of prohibited bullying behaviors, and requirements for the development of school-specific policies. The level of detail on each of these components varied, however, as some laws did not include explicit information as to whether it would be applicable to cases of student bullying outside the school

perimeter, for example. Cyberbullying was included in most laws, however, there were still gaps in coverage.

8.1.4 Cross-cutting Themes

The 2015 edition of PISA was the first to include bullying questions, and therefore it was not possible to investigate how bullying prevalence rates analyzed in papers one and two might have been impacted by the antibullying laws reviewed in paper three. Nevertheless, it is important to note that three out of the eight countries studied (Peru, Chile, and Columbia) had enacted antibullying laws prior to the 2015 assessment. Interestingly, national bullying rates for these three countries were not substantially different from the other five LAC countries. Although it was not possible to establish whether these rates have been impacted by the existing antibullying laws, the current dissertation provides an important baseline for future studies on the topic.

8.2. Strengths and Limitations

One positive aspect of the PISA dataset, used in papers one and two, is that it contained a nationally representative sample of 15-year-old students in eight LAC countries. Participating countries also encompassed the Northern, Central, Caribbean, and Southern areas of the LAC region and represented a wide range of socioeconomic and demographic contexts.

PISA's behavior-based questions also measured multiple types of bullying (e.g. relational, verbal, and physical). General measurements of bullying (e.g. have you been bullied in the past 12 months?), as opposed to more specific behavior-based questions, have been shown to underestimate the prevalence of bullying victimization among certain adolescent groups (Sawyer et al., 2008). Lastly, in addition to the student context questionnaire, PISA also included

a school questionnaire, filled by the schools' principals. Together the two questionnaires provide a more holistic snapshot of the school environment and students' experiences.

Paper three was supported by the UCLA World Policy Analysis Center. The center's staff and postdocs provided technical expertise throughout the process of sourcing international laws, creating a coding framework, and conducting the policy analysis. In addition, all original laws were double-coded by native Portuguese and Spanish speakers. A third reviewer was also available to clarify relevant coding questions and to confirm coding decisions.

A few limitations should also be discussed. First, papers one and two are cross-sectional studies and therefore cannot ascertain causation, since independent and dependent variables were measured at the same time. In addition, these two papers have similar limitations with regards to the selection of PISA's participating countries and students and the content of the student context questionnaire. More specifically: 1) participating countries were not randomly selected; 2) only 15-year old individuals attending school at the time of the assessment were eligible to participate; 3) the student questionnaire did not collect demographic information on race/ethnicity; 4) SES measurements might not have been well suited to low and middle-income countries; and 5) there was no information about cyber bullying and bullying aggression.

Countries were not randomly selected to join PISA, and those who opted in had to fund many aspects of their participation (Engel & Rutkowski, 2020). PISA's data is also publicly available, so all participating governments had to have some level of commitment to accountability and transparency. It is possible then, that the eight LAC countries in the present analyses had better run educational systems and were able to better address peer violence compared to nonparticipating countries.

PISA's sample was also restricted to 15-year old individuals attending school at the time of the assessment. In countries where a substantial proportion of adolescents are not in school, PISA's aim population (i.e. all 15-year-olds in school) did not neatly overlap with the general population of 15-year-olds. That was the case in the LAC countries, where PISA's coverage of the national 15-year-old population, ranged from just 63.5% in Costa Rica and 63.8% in Brazil, to 79.8% in Chile (National Center for Education Statistics). These percentages were much lower compared to wealthier countries, such as Belgium (92.9%), Finland (97.3%), and Switzerland (96.2%) (National Center for Education Statistics). Thus, it is likely that adolescents from lower SES backgrounds were excluded at higher rates in participating LAC countries.

Race/ethnicity information was also missing from the 2015 PISA. This information can be especially meaningful when studying SES since there is considerable evidence of racial/ethnic inequalities in income and living standards in many Latin American countries (The Brazilian Institute of Geography and Statistics, 2012). Research in the United States also indicates that non-White students may systematically underreport incidences of bullying, although this bias tends to be stronger when students are asked more generally about bullying experiences, as opposed to being asked about specific bullying behaviors (Sawyer et al., 2008).

It is also important to note that PISA's SES questions were primarily designed to measure adolescent socioeconomic status among those living in the OECD member countries(OECD, 2017c). This organization is composed of a group of high-income countries where very few adolescents experience poverty such as lacking food or clothing (Plenty & Mood, 2016). The OECD recognizes that PISA's current SES measures might not be well suited to measure socioeconomic status in middle and low-income countries, where poverty is more widespread

(Willms & Tramonte, 2015). As a result, it is possible that SES measures used in the present study did not capture the full range of students' socioeconomic characteristics in the LAC countries, which could thus help to explain the observed lack of association between certain socioeconomic measures and bullying victimization.

Bullying victimization also appears to be less susceptible to social stratification along affluence levels compared to bullying aggression (F. J. Elgar et al., 2009). However, the 2015 PISA did not collect information on bullying aggression. Cyber bullying information was also absent from the 2015 PISA, making it impossible to investigate the association between student SES and this form of bullying.

One key limitation of paper three is that it did not examine norms, decrees, or programs issued by administrative agencies such as the ministries of education, except for regulations issued in support of the antibullying laws of interest. State and district legislation, and case law from national court systems were also not been examined at this time. Nevertheless, it is important to recognize that bullying prevention is being addressed at multiple spheres of government in the region, and these programs and policies have an important role in protecting youths. For instance, many states in Mexico and Brazil have enacted school-based, antibullying laws (Brito, 2012; Rivera, 2012), while some LAC countries such as Uruguay and Trinidad and Tobago have adopted antibullying programs on a national scale (World Health Organization, 2014b).

Paper three had an additional limitation in that it did not examine the implementation of the laws (Tremper, Thomas, & Wagenaar, 2010). Yet, the compilation of these laws can already offer some initial insights into the extent to which these laws are being implemented. For

example, although Honduras has enacted a national antibullying law, the government had not yet issued regulations detailing its implementation. The absence of the implementation plan is an indication that the Honduran law was unlikely to be reaching its goals. In addition, information on implementation and enforcement, gathered in the present dissertation, can also be an indication of how likely these laws are to be applied. For instance, laws that include a clear and detailed description of the implementation roles of various institutions, such as in Colombia, or that have provided details on sanctions for schools that fail to comply, such as in Chile, are perhaps less likely to remain confined to the paper. Moreover, the content analysis in the present study has also set the groundwork for eventual implementation studies. That is because to assess the extent and fidelity of the implementation of antibullying legislation, it is first necessary to identify the laws and to understand their core components.

8.3. Study Contribution

This dissertation has investigated adolescent bullying victimization at multiple levels. Findings from papers one and two were largely contrary to the hypothesis raised. Yet, in the process of analyzing the 2015 PISA dataset, a sizeable number of missing data was revealed, especially among students from low SES backgrounds. Patterns of missing data also varied across participating countries, with Brazil having both the largest absolute and relative numbers of missing values. These results created empirical challenges, such as conducting multiple imputation procedures, and highlighted the difficulties of achieving high data quality in large international assessments. Therefore, findings from these papers should support future studies on the topic of adolescent socioeconomic status and bullying mainly by underscoring measurement challenges and existing data gaps.

Regarding paper three, efforts to source and compile laws resulted in a list of national antibullying laws and notes on the legal antibullying developments in many countries across the LAC region. These results can support future sourcing efforts and help to monitor new laws. The coding framework developed can also support future implementation studies by assisting researchers in prioritizing which factors to study and in assessing which legal components might be more effective to prevent bullying.

8.3.1. Future Work

Although school bullying will continue to be a fertile ground for many years to come, the present dissertation, coupled with the current historical moment, can support future work on three key topics; 1) bullying trend analyses using new PISA editions; 2) intersectional studies of the unique associations between bullying, socioeconomic status and race/ethnicity; and 3) monitoring of the impact of school closures during the COVID-19 pandemic on the prevalence of youth cyber-bullying.

The 2018 PISA data was made publicly available at the end of 2019 and will allow for the investigation of bullying trends and the potential impact of antibullying laws around the world. The newest PISA assessment collected bullying data in ten LAC countries: Chile, Colombia, Mexico, Argentina, Brazil, Costa Rica, Dominican Republic, Panama, Peru and Uruguay. Initial comparisons between the 2015 and 2018 PISA editions showed the largest increase in bullying prevalence was recorded in the LAC region. For instance, in 2015, 30% of students in the Dominican Republic reported being bullied at least a few times a month, but by 2018, that figure had jumped to 44%. Early results showed the association between bullying

victimization and student socioeconomic status was negatively associated in Argentina and the Dominica Republic, but not statistically significant in the other LAC countries.

The latest PISA edition also included new bullying-related questions and more health measures of individual students, which should support future studies of the association between bullying and student SES. On the first topic, the PISA questionnaire had questions about students' general attitudes towards bullying, such as "It irritates me when nobody defends bullied students"; "It is a wrong thing to join in bullying"; and "I feel bad seeing other students bullied". In addition to bullying-related questions, PISA 2018 also included more information about student's health including self-reported measures of weight and height. Body size has been noted as a key risk factor of bullying victimization and is also negatively correlated with life satisfaction and other mental health measures.

Research on the intersection between race and bullying is particularly important since the violent killing of George Floyd by police officers has made the fight against racism an even more urgent matter. Bullying, like racism, is a form of violence built on dominance, intimidation, and exclusion. Both forms of aggression should be addressed during youth, and yet, research on the interplay between bullying and racism has been scarce and mostly focused on adult populations (Fox & Stallworth, 2005). More in-depth research is needed, for example, to explain the observed racial differentials in bullying reporting (Lai & Kao, 2018), and to assess whether youths' socioeconomic status moderates these differences. Minority youths, especially males, are less likely to report being bullied, and researchers have hypothesized that social pressures to conceal any vulnerability is a contributing factor in underreporting (Lai & Kao, 2018). Therefore, qualitative research must be carried out to understand how minority youths, and those

from lower SES backgrounds, make sense of their bullying experiences and to create better bullying surveillance tools going forward.

Lastly, the current COVID-19 pandemic has had an unprecedented impact on the education sector, and as of June 2020, the UNESCO estimated that around 1.2 billion students were out of school (UNESCO, 2020). Although in-person bullying has been drastically reduced by school closures and social distancing measures, cyberbullying is a growing threat to youths' well-being, since students are spending more time online to study and socialize, and have less adult supervision as parents try to meet work from home demands. Therefore, studies are urgently needed to understand how cyberbullying during this time might further exacerbate the negative effects of prolonged social distancing and lack of in-person education on youths' mental health and development.

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