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Bullying Involvement among Disabled and Nondisabled Students in Late Elementary School:
Implications for Disability-Informed Anti-Bullying Strategies

By

Eunkyung Chung

A dissertation submitted in partial satisfaction of the

requirements for the degree of

Doctor of Philosophy

in

Social Welfare

in the

Graduate Division

of the

University of California, Berkeley

Committee in charge:

Professor Paul Sterzing, Chair

Professor Susan Stone

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Spring 2026

Abstract

Bullying Involvement among Disabled and Nondisabled Students in Late Elementary School: Implications for Disability-Informed Anti-Bullying Strategies

by

Eunkyung Chung

Doctor of Philosophy in Social Welfare

University of California, Berkeley

Professor Paul Sterzing, Chair

Ensuring the positive development of children and adolescents holds great importance, as it enables individuals to thrive and achieve their full potential and to lead meaningful lives as members of society in adulthood. School bullying is a prevalent and serious problem that hinders the positive development of children and adolescents, given its adverse impact on a wide range of outcomes not only for victims but also for those involved as bullies or bully-victims. Bullying refers to unwanted aggression rooted in a power imbalance between individuals (excluding siblings or dating partners), often repeated over time and manifested in various forms (e.g., physical, verbal, relational). Disabled youth may be more likely to be involved in bullying than nondisabled youth, as disability—reflecting a misfit or mismatch between individual characteristics and surrounding environments—may contribute to power imbalances between disabled and nondisabled students and thereby increase the risk for bullying involvement.

Although there is a growing number of studies examining disabled youth's bullying involvement, empirical research investigating their experiences in depth remains limited, often focusing primarily on cross-sectional estimates of bullying involvement or treating disability as an intrinsic individual characteristic, thereby under-recognizing the role of surrounding contextual factors in shaping disabled youth's experiences of bullying involvement. By centering on late elementary school years—a critical window for bullying prevention and intervention—this dissertation aimed to address some of the gaps in the literature by adopting a disability-informed lens to examine three important yet understudied aspects of bullying involvement among youth, drawing on national-level longitudinal survey data from disabled and nondisabled students across the United States. These three aspects, each addressed in a separate chapter, are: (1) concordance in bullying victimization reports across multiple informants (students, teachers, and parents), (2) longitudinal trajectories of bullying victimization and the effects of a schoolwide behavioral support framework on students' trajectory membership, and (3) joint development of bullying victimization and perpetration.

First, effective school-based bullying prevention and intervention begin with accurate assessment of bullying victimization in schools, and achieving concordance among reports from students, teachers, and parents is foundational. However, research examining concordance in the reports of bullying victimization across multiple informants has been limited, with even fewer studies explicitly focusing on disabled students. Using three bullying victimization measures

with identical wording but different reporters (students, teachers, parents), Chapter 1 examined the similarities and differences between disabled and nondisabled students in cross-informant concordance in bullying victimization reports. One of the major findings was systematic disability-based differences in cross-informant concordance, including higher rates of positive concordance as well as higher rates of discordance (both adult underestimation and overestimation) for disabled students than for nondisabled students. This chapter is one of the first investigations assessing cross-informant concordance in bullying victimization reports by students' disability status, providing insights for understanding this phenomenon with a disability-informed lens. Furthermore, this chapter provides important implications for practice, including strengthening disabled and nondisabled students' capacity to recognize and report bullying, implementing disability-informed anti-bullying training for parents and teachers, and fostering accessible and inclusive school environments in which both disabled and nondisabled students feel safe and comfortable reporting bullying and adults share a clear understanding of appropriate responses.

Second, experiencing bullying victimization at any point is harmful; however, stable exposure to bullying victimization over time is linked to the most adverse outcomes. Therefore, it is important to identify distinct trajectories of bullying victimization and to examine factors that may influence students' likelihood of following these trajectories. Despite disabled students' heightened vulnerability to bullying victimization, little research has examined their experiences longitudinally or identified effective supports for this population. Using repeated-measures latent profile analysis, Chapter 2 identified distinct bullying victimization trajectories in late elementary school years and examined whether students' trajectory membership varies by disability status and by schools' implementation of Schoolwide Positive Behavioral Interventions and Supports (SWPBIS)—a behavioral support framework adopted widely in the United States and other countries. Four distinct trajectories of bullying victimization were identified (i.e., stable high, increasing, decreasing, stable low), and disabled students had significantly higher risk for experiencing persistently high or changing patterns of victimization, rather than remaining in the stable low trajectory group. Meanwhile, SWPBIS had nonsignificant effects on trajectory membership overall and by disability status. These findings underscore the importance of tailored prevention and intervention efforts for students in late elementary school years, given the diversity of bullying victimization experiences in this period, and of strengthening SWPBIS with greater attention to bullying and disability to realize its promise as an effective and equitable anti-bullying framework for all students.

Third, given the adverse effects of bullying involvement in any role (e.g., victims, bullies, bully-victims), it is critical to examine the joint developmental process of bullying victimization and perpetration to better understand how these behaviors unfold over time. Understanding this joint developmental process—in other words, the stability and reciprocity of bullying victimization and perpetration—can help to understand the mechanisms sustaining bullying involvement and to inform more timely and effective bullying prevention and intervention strategies. Despite this importance, few studies have examined these longitudinal associations, particularly for disabled students, using statistical methods that allow for a more precise understanding of how victimization and perpetration co-develop at the within-student level across late elementary school years. Using a random-intercept cross-lagged panel model, Chapter 3 examined the joint development of bullying victimization and perpetration during the late elementary school years, as well as potential differences by students' disability status. A major finding from this chapter was that both victimization and perpetration were stable at the

within-person level, with no statistically significant evidence of reciprocal effects. These overall patterns were similar across disabled and nondisabled students; however, disabled students consistently reported higher levels of victimization and perpetration at all time points than their nondisabled counterparts. Findings from this chapter suggest that role transitions in bullying dynamics are relatively rare and that disabled students are consistently more vulnerable to bullying involvement than nondisabled students across late elementary school years, which highlights the importance of addressing power asymmetries among students—with attention to the role of disability in shaping peer power dynamics—to prevent and intervene in bullying at schools. This may include implementing anti-bullying programs that directly address underlying power dynamics, as well reducing disability stigma operating at multiple levels (e.g., internalized, interpersonal, institutional) as a prerequisite for addressing disabled students' bullying involvement.

In summary, grounded in an understanding of disability as a misfit or mismatch arising from the interaction between individuals and their surrounding environments, these three chapters provide rich evidence on bullying involvement among disabled and nondisabled students in late elementary school years. Drawing on national-level longitudinal survey data and rigorous statistical methods, this dissertation contributes robust empirical evidence to advance disability-informed scholarship on bullying involvement. This work holds potential for various stakeholders to move beyond an individual, often deficit-based perspective on disability and to engage in disability-informed anti-bullying research, practice, and policy. Findings from this dissertation—including both strengths and limitations—will hopefully serve as a steppingstone for future lines of inquiry and practice that can contribute to building accessible and inclusive bully-free school environments that support the positive development of all students.

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Dedication

To my father, whose unwavering trust and support—including in my decision to pursue PhD studies—continue to guide me in living a life true to myself. May you rest in peace. Your love remains with me always.

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At its heart, the PhD journey was never mine alone. I will cherish the memories and lessons from my time here and hope to pay them forward in the steps that lie ahead.

Introduction

Ensuring the positive development of children and adolescents holds great importance, as it enables individuals to thrive and achieve their full potential and to lead meaningful lives as members of society in adulthood (National Academies of Sciences, Engineering, and Medicine, 2019). School bullying is a prevalent and serious problem that hinders the positive development of children and adolescents, given its adverse impact on academic, behavioral, and health outcomes not only for those who experience it as victims but also for those involved as bullies or bully-victims (Heerde & Hemphill, 2018; Holt et al., 2015; Moore et al., 2017; National Academies of Sciences, Engineering, and Medicine, 2016a; Schoeler et al., 2018). Bullying refers to various forms of aggression (e.g., physical, verbal, relational) that occurs between individuals (excluding siblings or dating partners) and involves a power imbalance, which is often repeated or highly likely to be repeated (Gladden et al., 2014; Olweus, 1993). Disabled¹ youth may be more likely to be involved in bullying than nondisabled youth, as disability—reflecting a misfit or mismatch between individual characteristics (e.g., having one leg, stuttering, hyperactivity) and surrounding environments (e.g., peer norms, classroom rules, school facilities)—may contribute to power imbalances between disabled and nondisabled students (e.g., differences in physical strength, language skills, social popularity) and thereby increase the risk for bullying involvement (Earnshaw et al., 2018; Garland-Thomson, 2011; Shogren, 2013).

The extant literature provides consistent evidence that disabled youth experience higher levels of bullying victimization than their nondisabled peers (Abregú-Crespo et al., 2024; Bear et al., 2015; Chen et al., 2015; Farmer et al., 2012; Lebrun-Harris et al., 2019; Malecki et al., 2020; Rose et al., 2009; Rose, Simpson, et al., 2015; Rose & Gage, 2017; Turner et al., 2011; Van Cleave & Davis, 2006). Although fewer in number, studies are also consistent in showing that disabled youth are more likely to be bully-victims (Abregú-Crespo et al., 2024; Farmer et al., 2012; Rose, Simpson, et al., 2015; Van Cleave & Davis, 2006). Findings regarding bullying perpetration are less consistent. While some studies report higher levels of perpetration among disabled youth than among their nondisabled counterparts (Abregú-Crespo et al., 2024; Lebrun-Harris et al., 2019; Rose et al., 2009; Rose & Gage, 2017; Van Cleave & Davis, 2006), other studies report similar levels between the two groups (Chen et al., 2015; Farmer et al., 2012; Malecki et al., 2020; Rose, Simpson, et al., 2015) or mixed findings depending on the criteria used (e.g., mean score across multiple items vs. the proportion of participants endorsing at least one item; Rose et al., 2015). Taken together, despite some inconsistencies, the current body of research provides robust evidence that disability is a critical factor contributing to youth's heightened involvement in bullying.

Although a growing number of studies have investigated disabled youth's bullying

¹ In terms of language, there is an ongoing debate between those who prefer to use identity-first language (e.g., “disabled person”) and those who prefer to use person-first language (e.g., “person with a disability”). Some people argue that person-first language allows for recognizing disability as a part of individual's identity rather than a defining characteristic, whereas others claim that identity-first language draws attention to the social factors that disable a person and avoids perceiving disability as an inherent individual characteristic (Schur et al., 2013). Recently, a growing movement in the disability community has called for the use of identity-first language to challenge negative stereotypes attached to disability and to reclaim it as an identity and a source of pride (E. E. Andrews et al., 2019). Accordingly, identity-first language is primarily used throughout this dissertation. However, this dissertation recognizes that both approaches reflect valid perspectives and that some people use person- and identity-first languages interchangeably.

involvement over the past few decades (for an overview, refer to Falla et al., 2021; Rose et al., 2011), much of this work has focused on estimating their levels of involvement (e.g., prevalence rates), leaving important gaps in our knowledge of how to better understand and address bullying in this population. In addition, many studies have implicitly treated disability as an intrinsic individual characteristic, reflecting what can be described as an individual perspective on disability² (Ferguson & Nusbaum, 2012; Goodley, 2017; M. Oliver, 1996). Under this perspective, the role of contextual factors shaping disabled students' involvement in bullying has often been under-recognized, limiting insights into understanding and addressing this phenomenon. Furthermore, from a developmental standpoint, late elementary school years—typically marking the transition from childhood to adolescence (Sawyer et al., 2018)—represent a critical window for bullying prevention and intervention. During this period, children often start to experience rapid cognitive and social-emotional changes (e.g., increased cognitive skills, heightened desire for peer acceptance and popularity) that may intensify involvement in bullying dynamics (Chen et al., 2015; Estell et al., 2009; Ettekal & Ladd, 2017). However, given the limited body of bullying research on disabled students, relatively few studies have examined this developmental period, and even fewer studies have done so longitudinally.

Accordingly, this three-chapter dissertation aims to address some of these gaps in the literature by adopting a disability-informed lens to examine three important yet understudied aspects of bullying involvement among youth, drawing on national-level longitudinal survey data from disabled and nondisabled students across the United States. These three aspects, each addressed in a separate chapter, are: (1) concordance in bullying victimization reports across multiple informants (students, teachers, and parents), (2) longitudinal trajectories of bullying victimization and the effects of a schoolwide behavioral support framework on students' trajectory membership, and (3) joint development of bullying victimization and perpetration.

First, accurate assessment of school bullying is foundational to effective prevention and intervention efforts (Casper et al., 2015). In particular, it is critical that adults in youth's lives—especially teachers and parents—accurately identify students' experiences in order to intervene and provide appropriate support (Demaray et al., 2013; Yoon et al., 2020). However, research examining concordance in the reports of bullying victimization across multiple informants has been limited, with even fewer studies explicitly focusing on disabled students. Chapter 1 uses three bullying victimization measures with identical wording but different reporters (student, parent, and teacher) to examine the similarities and differences between disabled and nondisabled students in cross-informant concordance in bullying victimization reports. Findings from this chapter will not only enhance our understanding of the potential role of disability in shaping how bullying victimization is perceived and reported across informant but also provide guidance for improving cross-informant concordance and ensuring more accurate assessment of school bullying with explicit consideration of disability.

² The ways in which people perceive disability can be broadly categorized into two perspectives, depending on where they locate the source of the problems experienced by disabled people: the individual or society. Those who adopt an individual perspective assume that disabled people experience problems due to their impairments, whereas those who adopt a social perspective assume that the problems lie in the ways in which society imposes barriers upon people with certain impairments (M. Oliver, 1983). Here, it should be noted that these two perspectives represent the simplified, “polar end of a continuum” of various viewpoints about disability (M. Oliver, 1996, p. 33). For an overview of various viewpoints about disability, refer to Evans et al. (2017). The two perspectives on disability—individual and social—are sometimes referred to as ‘models’ (e.g., the social model of disability); however, to emphasize the broader scope of each perspective—within which more specific views (models) of disability may exist—this dissertation adopts the term ‘perspective.’

Second, experiencing bullying victimization at any point is harmful; however, research shows that stable exposure to bullying victimization over time is linked to the most adverse outcomes (Geoffroy et al., 2018; Wei et al., 2023). Therefore, it is important to identify distinct trajectories of bullying victimization (e.g., stable high, increasing, stable low) and to examine factors that may influence students' likelihood of following these trajectories in order to develop effective anti-bullying strategies. Although disabled students have heightened vulnerability to bullying victimization compared to their nondisabled counterparts, little research has examined their experiences longitudinally or identified effective supports for this population. Thus, Chapter 2 identifies distinct bullying victimization trajectories in late elementary school years and examines whether students' trajectory membership varies by disability status and by schools' implementation of Schoolwide Positive Behavioral Interventions and Supports (SWPBIS)—a behavioral support framework adopted widely in the United States and other countries (Payne et al., 2025). Findings from this chapter will offer longitudinal evidence on the diversity of victimization experiences among disabled and nondisabled students, as well as practical implications for advancing SWPBIS as an effective anti-bullying framework for all students.

Lastly, given the adverse effects of bullying involvement in any role (e.g., victims, bullies, bully-victims), it is critical to examine the joint developmental process of bullying victimization and perpetration to better understand how these behaviors unfold over time. Understanding this joint developmental process—in other words, the stability and reciprocity of bullying victimization and perpetration—can help to understand the mechanisms sustaining bullying involvement and to inform more timely and effective bullying prevention and intervention strategies. Despite this importance, few studies have examined these longitudinal associations, particularly for disabled students, using statistical methods that allow for a more precise understanding of how victimization and perpetration co-develop at the within-student level across late elementary school years. Using a random-intercept cross-lagged panel model, Chapter 3 examines whether and how the joint development of bullying victimization and perpetration differs between disabled and nondisabled students, with the goal of informing more equitable anti-bullying strategies grounded in a disability-informed perspective.

In summary, this dissertation brings together three chapters, each featuring a stand-alone empirical study, to promote a deeper understanding of bullying involvement among disabled and nondisabled students in late elementary school years. While this dissertation recognizes that disability is a heterogeneous category encompassing diverse types (e.g., behavioral, intellectual, physical, sensory, social-emotional; Sommo & Chaskes, 2013), disability is operationalized as a binary indicator throughout these chapters due to data constraints. This operationalization limits subgroup differentiation; however, this work represents an important initial step in advancing disability-informed scholarship on bullying involvement through the use of national-level longitudinal survey data that include a large number of disabled and nondisabled students and through the application of rigorous statistical methods. Findings from this dissertation will lay the groundwork for more nuanced subgroup analyses in the future and offer important implications for developing disability-informed anti-bullying strategies and fostering inclusive and equitable school environments that support the positive development of all students.

Chapter 1

Concordance in Bullying Victimization Reports across Students, Teachers, and Parents: Similarities and Differences by Students' Disability Status

Summary

Effective school-based bullying prevention and intervention begin with accurate assessment of bullying victimization in schools, and achieving concordance among reports from students, teachers, and parents is foundational. However, research examining concordance in the reports of bullying victimization across multiple informants has been limited, with even fewer studies explicitly focusing on disabled students. Using national-level survey data from U.S. students in late childhood and their teachers and parents, this study examined the similarities and differences between disabled and nondisabled students in cross-informant concordance in bullying victimization reports. For both disabled and nondisabled students, parents showed higher rates of concordant positive reports of moderate or frequent victimization (i.e., both the student and parent reporting that victimization occurred sometimes or more) than teachers across all victimization types, although overall student-adult concordant positive rates remained low in both groups of students. Regarding differences by students' disability status, adults (both teachers and parents) showed higher rates of concordant positive reports of moderate or frequent victimization for disabled students than for nondisabled students, a pattern consistent across all victimization types. At the same time, rates of discordance—both adult underestimation and adult overestimation of moderate or frequent victimization—were also generally higher for disabled students than for their nondisabled counterparts across victimization types. Findings have several implications for research and practice, including the importance of improving cross-informant concordance, particularly for disabled students.

Introduction

As recognized in international human rights instruments, every child has the right to be protected from all forms of violence and to be educated in an environment that respects their dignity and promotes their well-being (United Nations General Assembly, 1948, 1989). School bullying constitutes a violation of this right, as it undermines the safety of the victims and is associated with multiple forms of harm and distress (Greene, 2006; Richardson & Hiu, 2018). Bullying is defined as various forms of aggression (e.g., physical, verbal, relational) that occur among peers and are characterized by a power imbalance and (a high likelihood of) repetition (Gladden et al., 2014; Olweus, 1993). According to a recent meta-analysis, approximately 25% of children and adolescents worldwide reported experiencing bullying victimization (Ariani et al., 2025), a prevalence that is deeply concerning given its negative impacts on youth. Notably, disabled youth are more likely to experience bullying victimization than nondisabled youth in many countries across the globe (Annerbäck et al., 2014; Blake et al., 2012; Chatzitheochari et al., 2016; Fang et al., 2022; Sentenac et al., 2013), raising significant concerns about the extent to which educational settings are structured in ways that promote safety, dignity, and well-being of all youth—particularly those with disabilities.

In order to build safe and supportive school environments that are free from bullying, it is critical that adults in youth's lives—particularly teachers and parents—accurately identify students' experiences of bullying victimization in order to intervene and provide appropriate support (Demaray et al., 2013; Yoon et al., 2020). Despite the importance of concordance in perceiving student bullying victimization across multiple informants for effective bullying prevention and intervention, prior research suggests that teachers' and parents' perceptions often differ from those of students, with adults tending to underestimate the level of bullying victimization experienced by students (Bradshaw et al., 2007; Harcourt et al., 2014; Mishna et al., 2006; Stockdale et al., 2002). Moreover, these perceptual discrepancies may be amplified or manifest differently for disabled students, considering that various factors (e.g., students' disability characteristics, adults' stereotypes about disability, patterns of interaction between disabled students and adults) can shape how bullying victimization is perceived and reported by students themselves, teachers, and parents for this group (Bourke & Burgman, 2010; Fisher et al., 2022; Forber-Pratt et al., 2024; Hartley et al., 2015, 2017; Liasidou & Ioannidou, 2021; Rose, Monda-Amaya, et al., 2018; Ručman & Šulc, 2025; Wood & Orpinas, 2021).

Although prior studies have documented the perceptions of bullying victimization reported by various informants—such as students, teachers, and parents—relatively few studies have examined the concordance in bullying victimization reports for the same student across these informants, which allows for direct comparison of their perceptions and assessment of the level of agreement and disagreement (Demaray et al., 2013; Holt et al., 2008; Ladd & Kochenderfer-Ladd, 2002; Løhre, 2022; Shakoor et al., 2011; Tang et al., 2025; Totura et al., 2009; Williford et al., 2015). In addition, while some extant concordance studies have explored how student sociodemographic characteristics (e.g., gender, age, grade or school level) may influence cross-informant concordance (Demaray et al., 2013; Ladd & Kochenderfer-Ladd, 2002; Shakoor et al., 2011; Williford et al., 2015), no published studies have investigated potential differences in cross-informant concordance by students' disability status, with only a small number of studies focusing on certain disability types (e.g., behavioral disorders, autism, Attention Deficit/Hyperactivity Disorder [ADHD]; Cho et al., 2020; Hu et al., 2021; Zeedyk et al., 2014). Taken together, these gaps point to the need for further empirical research on the concordance in multiple informants' reports of bullying victimization experienced by students—particularly those with disabilities—to inform more effective and inclusive anti-bullying efforts and foster school environments that safeguard the well-being of all students.

Perceptions and Concordance of Bullying Victimization among Students and Adults

Adopting a whole-school approach that involves all members of the school community—including students, teachers, and parents—is widely recommended to prevent and address bullying in schools (Gaffney et al., 2021; Valle et al., 2020). However, extant research consistently finds that adults are not fully aware of bullying victimization experienced by students. For example, empirical studies using student surveys and interviews indicated that many students did not tell their experiences of bullying victimization to adults, and when students did, they were more likely to report their experiences to parents than to teachers (Fekkes et al., 2005; Houndoumadi & Pateraki, 2001; C. Oliver & Candappa, 2007). Studies that directly examined adults' perceptions using surveys reported similar results. For instance, Bradshaw et al. (2007) found that school staff across all school levels underestimated the proportion of students experiencing bullying victimization relative to student-reported prevalence rates. Similarly, Benbenishty and Astor (2005) found that students tended to perceive the severity of

violence problem in their schools higher than their teachers and principal. Stockdale et al. (2002), focusing on the perceptions from students and parents, found that parents knew less about their child's experiences of bullying victimization than students did. Findings from qualitative studies further support adults' limited awareness of youth's bullying victimization (Harcourt et al., 2014; Mishna et al., 2006), though Mishna et al. (2006) noted that teachers and parents in their study demonstrated similar levels of awareness, rather than one group exhibiting greater awareness than the other.

Prior studies have pointed to several factors that may contribute to the discrepancies in the perception of bullying victimization between students and adults. One such factor relates to the locations where bullying occurs. Although adults were generally cognizant about the locations reported by students, their perceptions differed from students' reports (Bradshaw et al., 2007; Stockdale et al., 2002). For example, one study found that while students and parents identified the playground as the primary location, teachers reported the school bus as the most common place, and ratings of other locations (e.g., classroom, hallways, bathrooms) also varied across groups (Stockdale et al., 2002). These differences may be partly related to school members' differing assumptions about the likelihood of bullying occurring in particular locations and about their responsibility for monitoring those spaces, which may systematically influence their perceptions of bullying victimization (Astor, 1998; Astor et al., 1999). Another factor relates to students' interactions with adults in response to bullying victimization experiences. Mishna et al. (2006) and Oliver and Candappa (2007) found that many students had ambivalent attitudes towards disclosing their experiences to teachers and parents, weighing potential benefits (e.g., added protection, appropriate intervention) against risks (e.g., adult concern or overreaction, worsening of the situation, not being believed, retaliation from bullies). Such concerns often led to a general reluctance among victimized students to tell their experiences to adults. Nonetheless, Oliver and Candappa (2007) noted that students perceived parents as a better source of help and advice than teachers, which may help explain why disclosure occurs more frequently to parents than to teachers. Lastly, adults' own perspectives and interpretations of peer interactions may also shape how they recognize students' experiences of bullying victimization. Demaray et al. (2013) argued that some adult perceptions of student bullying victimization may reflect assumptions and beliefs rather than direct observations. For example, prior research has documented common assumptions that adults hold about victimized youth (e.g., being passive, not well-adjusted, or unable to stand up for themselves; Mishna et al., 2006), which may influence their reports in ways that differ from students' self-reports. Furthermore, adults themselves may hold different conceptions of bullying (e.g., parents endorsing broader definitions of bullying victimization than teachers; Forber-Pratt et al., 2024; Harcourt et al., 2014), which may result in discrepancies in reports within adults. Together, these factors may contribute to divergent views on bullying victimization across students, teachers, and parents.

The abovementioned studies provide valuable insights into the perceptual similarities and differences between students and adults and various factors that may shape them; however, this literature is limited in terms of making direct comparisons in their perceptions and assessing the extent of convergence and divergence in their reports, which can be examined by analyzing concordance in bullying victimization reports for the same student across multiple informants. To date, most empirical studies examining concordance in bullying victimization reports have focused on dyads involving students and either teachers or parents. For example, using data from 1,442 middle school students and their teachers, Totura et al. (2009) found slight agreement between student- and teacher-reports of bullying victimization (Cohen's kappa = .12). Williford

et al. (2015), using mixed effect regression models to examine concordance between 294 elementary school students who had some exposure to bullying victimization and their teachers, found that their reports of relational victimization were significantly associated (standardized coefficient = .28), while their reports of physical victimization were not. With respect to student-parent dyads, Holt et al. (2008) found that only 10.5% of the participants (205 fifth-grade students and their parents/guardians) showed concordant positive identification of bullying victimization³. Similarly, Shakoor et al. (2011; N = 2,232; ages 7–12) and Tang et al. (2025; N = 11,235; ages 9–10) reported generally fair levels of student-parent concordance in victimization reports (with one estimate from Tang et al. (2025) approaching the moderate range), as indicated by Cohen's kappa values ranging from .20 to .41. Taken together, these findings suggest generally low levels of concordance in both student-teacher and student-parent pairs, with slightly higher concordance observed in student-parent pairs and preliminary evidence that concordance may vary by the type of bullying victimization.

To the author's knowledge, only three studies have incorporated reports from students, teachers, and parents simultaneously to examine the concordance in the reports of bullying victimization. First, using data from 390 elementary school students (grades 2–4) and their teachers and parents, Ladd and Kochenderfer-Ladd (2002) found significant small-to-medium correlations between student and teacher reports (Pearson's $r = .15-.30$) and between students and parent reports (Pearson's $r = .22-.34$), with parent-student correlations consistently higher than teacher-student correlations across grade levels. Next, drawing on data from 419 primary and secondary school students and their teachers and parents, Løhre (2022) also found higher levels of correlation between students and parents (Spearman's $r = .29$) than between students and teachers (Spearman's $r = .17$). Lastly, Demaray et al. (2013) analyzed data from 137 students (grades 3–8) to examine cross-informant concordance in both the overall level of bullying victimization (using Pearson's r) and across the ten items representing different types of bullying victimization (using Cohen's kappa statistics). Overall, parents had better agreement with students than the level of agreement teachers had with students both at the overall and item levels, and no consistent patterns emerged regarding the type of bullying victimization influencing the magnitude of cross-informant concordance. Additionally, the authors found that most of the disagreement between students and adults (both teachers and parents) reflected adults' underestimation rather than overestimation of bullying victimization. Taken together, the three studies that examined triads suggest higher levels of concordance in student-parent pairs than in student-teacher pairs, which is consistent with concordance studies examining dyads; however, these studies found no clear evidence that concordance differed by the type of victimization. Overall, the small number of available concordance studies, modest sample sizes in most of the previous studies, and limited and mixed findings regarding the variation by victimization type highlight the need for additional research investigating concordance using larger samples and incorporating reports from students, teachers, and parents simultaneously across different types of bullying victimization.

Cross-Informant Perceptions and Concordance of Bullying Victimization Experienced by Disabled Students

Compared to the broader literature on cross-informant perceptions and concordance of bullying victimization among youth, research explicitly including disabled students remains

³ Here, the rate of concordant positive identification of bullying victimization refers to the percentage of cases in which both the child and parent reported that the child had been bullied, calculated out of the entire sample.

sparse. Nonetheless, existing studies offer important insights into potential similarities and differences in how various informants perceive and report bullying victimization among disabled and nondisabled students. For example, comparing responses from victimized students in general and special education, Hartley et al. (2017) found that students in both groups were more likely to disclose bullying victimization to parents than to teachers. However, the likelihood of telling adults (both teachers and parents) was higher among disabled students than among their nondisabled peers, which may increase opportunities for adults to become more aware of bullying victimization among disabled students relative to bullying victimization among nondisabled students. In contrast to this study, other studies have not made direct comparisons between disabled and nondisabled students but have instead examined disabled students' experiences in greater depth. For instance, qualitative studies interviewing disabled students found both their reluctance and willingness to report bullying victimization to adults (both teachers and parents), along with the underlying reasons (e.g., fear of making situations worse, desire for receiving support; Bourke & Burgman, 2010; Ručman & Šulc, 2025; Wood & Orpinas, 2021), which largely mirrors the abovementioned findings in the broader literature.

Existing literature also points to several factors that may uniquely shape cross-informant perceptions and reports of bullying victimization among disabled students. Several studies have highlighted teachers' attitudes and behaviors towards disabled students, including overprotection or infantilization (Forber-Pratt et al., 2024; Ručman & Šulc, 2025) and even teachers' engagement in bullying towards disabled students (Hartley et al., 2015; Liasidou & Ioannidou, 2021). Such dynamics may influence how teachers perceive and interpret bullying victimization experienced by disabled students. In addition, some studies have noted differences between general and special education teachers in their levels of attention to, or perceived responsibility for bullying victimization experienced by disabled students, which may relate to teachers' perceptions and reports (Liasidou & Ioannidou, 2021; Rose, Monda-Amaya, et al., 2018). Research examining parent-related factors is scant, though two studies examining the perceptions of parents of students with intellectual and developmental disabilities (IDD) provide useful insights. Fisher et al. (2022) compared the perceptions between students with IDD and their parents and found that their perceptions of bullying victimization differed, particularly regarding the types they focused on (i.e., physical and verbal forms among students vs. broader forms among parents). In this study, parents mentioned that their children did not always recognize bullying victimization or disclose it to parents. The authors also mentioned that students with IDD experienced difficulties recalling and describing their experiences during interviews, often providing abstract or shifting narratives. Zhang and Chen (2023) interviewed parents of students with autism spectrum disorder (ASD), and one of the major themes in these parents' perceptions was interpreting bullying as an unavoidable part of their children's lives, which may shape their perceptions or reports of bullying victimization experienced by their child.

Taken together, these findings suggest that there may be both similarities and differences in how students, teachers, and parents perceive and report bullying victimization by students' disability status. However, concordance studies focusing on disabled students are limited. To date, three studies have explicitly included disabled students in their study samples and examined concordance within student-adult dyads. First, Cho et al. (2020) examined student-teacher concordance using data from 101 middle school students (11 with behavioral disorders [BD] and 90 without BD) and their general education teachers. They found that students without BD and teachers had significant, small-to-medium agreement (Pearson's $r = .22$), whereas agreement between students with BD and teachers was not statistically significant. Second, Zeedyk et al.

(2014) examined student-parent concordance using data from 175 students at age 13 (44 with high-functioning ASD, 39 with intellectual disability [ID], and 92 with typical development) and their parents. They found significant, fair-to-moderate student-parent agreement for typically developing youth and youth with ASD (Cohen's kappa = .33 and .52, respectively) but non-significant agreement for youth with ID. Their analyses also examined concordance by the type of bullying victimization (i.e., physical, verbal, and relational), revealing non-significant agreement for all student groups across all victimization types except for the significant moderate agreement in relational victimization for typically developing students (Cohen's kappa = .51). Lastly, Hu et al. (2021) examined student-parent concordance for students with ADHD (N = 452, ages 6–18). Using intraclass correlation coefficients (ICC), they found significant, fair agreement in verbal and relational victimization (ICC = .40) and poor agreement in physical victimization (ICC = .33). To summarize, the limited number of available studies and their heterogeneity in various aspects (e.g., students' disability type, age, and inclusion of nondisabled students as comparison groups) make it difficult to identify consistent patterns of concordance among disabled and nondisabled students, or to draw conclusions about how cross-informant concordance may differ by students' disability status. The extant studies highlight some important gaps that warrant further empirical investigation, including the need for studies examining the reports from multiple informants simultaneously, encompassing students with various types of disabilities, and comparing concordance in the reports of various types of bullying victimization between disabled and nondisabled students.

The Current Study

Effective school-based bullying prevention and intervention require shared understandings and perceptions of bullying victimization among students, teachers, and parents. However, research examining cross-informant concordance in the reports of bullying victimization has been limited, with even fewer studies explicitly focusing on disabled students. The current study seeks to fill this gap by drawing on national-level survey data of students in late childhood—a critical developmental period for the identification of and intervention in bullying victimization, as rapid cognitive and social-emotional development during this stage is likely to increase youth's vulnerabilities to bullying (Fujikawa et al., 2021). In this dataset, students reported their own experiences of bullying victimization, and their teachers and parents also provided corresponding reports for the same students, which enables a direct examination of cross-informant concordance in bullying victimization reports.

The research questions (RQs) guiding the current study are as follows:

RQ1. What is the level of concordance in the reports of bullying victimization at the overall level within student-teacher dyads and student-parent dyads, by students' disability status?

RQ2. What is the level of concordance in the reports of specific types of bullying victimization within student-teacher dyads and student-parent dyads, by students' disability status?

Methods

Data and Sample

The present study used the public-use data from the Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), which followed a nationally representative

sample of kindergartners in the United States for six years across nine waves (Tourangeau et al., 2019). Specifically, this study used data collected in Wave 7 (Spring 2014), when students were in late childhood (with most enrolled in grade 3), and when information about students' experiences of bullying victimization was reported by students themselves as well as by their teachers and parents. Of the 13,655 students who attended school at Wave 7, the final analytic sample consisted of 9,072 students in 1,836 schools who had non-missing reports on at least one of the four bullying victimization items from all informants (students, teachers, and parents). To assess whether inclusion in the analytic sample differed by students' disability status, this study conducted a chi-square test of independence for analytic sample inclusion status and students' disability status. Results indicated that no significant association was found ($\chi^2(1) = 1.26, p = .26$), suggesting that exclusion due to missing data was not systematically related to students' disability status. Table 1-1 shows sample characteristics.

Table 1-1 Sample Characteristics

	N (%)		N (%)
Gender		Disability Status	
Male	4611 (50.8)	Nondisabled	8237 (90.8)
Female	4461 (49.2)	Disabled	835 (9.2)
Ethnoracial Identity		Grade Level	
Hispanic	2281 (25.1)	Third grade	8578 (94.6)
Asian	666 (7.3)	Others	494 (5.5)
Black	861 (9.5)		
White	4747 (52.3)		Mean (SD)
Native Hawaiian or other Pacific Islanders	46 (0.5)	Age (in years)	9.09 (0.37)
American Indian or Alaska Native	70 (0.8)		
Two or more races specified	401 (4.4)		

Note: N = 9,072. All ethnoracial categories other than Hispanic were non-Hispanic.

Measures

Bullying Victimization (Student Report): Student reports of bullying victimization were assessed using four items adapted from the Bullying, Fighting, and Victimization Scale (Espelage & Holt, 2001). For each item, students reported the frequency of their own experiences of a specific type of bullying victimization—physical (“pushed, shoved, slapped, hit, or kicked you”), verbal (“teased you, made fun of you, or called you names”), direct relational (“left you out from playing with other students on purpose”), and indirect relational (“told lies or untrue stories about you”)—during the school year, using a five-point Likert scale: never, rarely, sometimes, often, and very often.

Bullying Victimization (Teacher Report): Teacher reports of bullying victimization were assessed using four items with wording and response options identical to those used for student reports. The only difference was the informant; each student's reading and language arts teacher reported the frequency of that student's experiences of bullying victimization.

Bullying Victimization (Parent Report): Parent reports of bullying victimization were assessed using items with wording identical to those used for students and teacher reports; however, parents were presented with two items for each type of bullying victimization. Parents were first asked to indicate whether their child had experienced a specific type of bullying victimization (response options: yes or no). For those who responded “yes” to this item, parents

were then asked to report the frequency of their child’s experiences using the same five-point Likert scale used for students and teacher reports. Accordingly, parent reports also yielded the same response options as the other two informant measures.

Disability Status: Students were classified as having a disability if an Individualized Education Program was recorded in school records at Wave 7.

Analytic Approach

To assess the level of concordance in the reports of bullying victimization at the overall level by students’ disability status (RQ1), this study first calculated the mean score across the four bullying victimization items for each informant (student, teacher, and parent), with response options coded as 0 = never, 1 = rarely, 2 = sometimes, 3 = often, and 4 = very often (mean score range: 0–4). Pearson’s correlation coefficients (r) were then calculated to examine concordance between student- and teacher-reports and between student- and parent-reports, separately for disabled and nondisabled students. The coefficients range from -1 to 1, with values of -1 and 1 indicating perfect linear relationships between two reports in the negative and positive directions, respectively. When there is no linear relationship between two reports, the coefficient is equal to zero (Welkowitz et al., 2012). Interpretation of the magnitude of Pearson’s correlation coefficients varies across academic disciplines (Schober et al., 2018); thus, this study followed Cohen’s (1988) guidelines widely used in behavioral sciences, in which correlations of .10 are considered small, .30 medium, and .50 large (as cited in Hemphill, 2003).

Next, to assess the level of concordance in the reports of specific types of bullying victimization by students’ disability status (RQ2), responses on the five-point Likert scale were dichotomized to indicate students’ experiences of moderate or frequent victimization, following Nansel et al.’s (2001) widely-used classification (sometimes, often, very often = experienced moderate or frequent bullying victimization [“yes”], never and rarely = did not experience moderate or frequent bullying victimization [“no”]). Then, for each type of victimization (i.e., physical, verbal, direct relational, indirect relational), the proportions of the sample were calculated based on four concordance patterns between students and teachers/parents: (a) positive concordance (student yes-teacher/parent yes), (b) negative concordance (student no-teacher/parent no), (c) adult underestimation (student yes-teacher/parent no), and (d) adult overestimation (student no-teacher/parent yes), separately for disabled and nondisabled students. The proportion for each pattern refers to the percentage of cases for that pattern (numerator) out of the total number of cases (denominator). In addition, Cohen’s kappa statistics were computed to quantify the level of agreement between reports while accounting for the amount of agreement expected by chance (McHugh, 2012). Cohen’s kappa (κ) is calculated using this formula:

$$\kappa = \frac{\text{Pr}(o) - \text{Pr}(e)}{1 - \text{Pr}(e)}$$

where $\text{Pr}(o)$ represents the observed agreement and $\text{Pr}(e)$ represents the agreement expected by chance. Kappa values range from -1 to 1; however, they typically fall between 0 (indicating agreement no better than chance) and 1 (indicating perfect agreement), as negative values reflect agreement worse than agreement that would be expected by chance—which rarely happens in applied settings (Sim & Wright, 2005). To interpret the magnitude of kappa values, the following classification was used: < .00 = poor, .00–.20 = slight, .21–.40 = fair, .41–.60 = moderate, .61–.80 substantial, and .81–1.00 = almost perfect agreement (Landis & Koch, 1977). For all data preparation and analyses, Stata version 19.0 was used (StataCorp, 2025).

Results

Descriptive Statistics

First, Table 1-2 presents the descriptive statistics for cross-informant reports of bullying victimization at the overall level. On average, students reported higher levels of overall bullying victimization (mean = 1.22), followed by parents (mean = .43) and teachers (mean = .38). With regard to distributional properties, visual inspection of histograms suggested non-normality in bullying victimization reports across all three informants; however, skewness and kurtosis values indicated that none of the distributions exhibited severe departures from normality (skewness < 2 and kurtosis < 7; Khine, 2013). Given that Pearson's correlation is robust to non-normality (Norman, 2010), this statistic was used to examine the concordance in the overall bullying victimization in subsequent analyses.

Table 1-2 *Descriptive Statistics for Bullying Victimization Reports at the Overall Level*

	Students	Parents	Teachers
Mean	1.22	0.38	0.43
Standard Deviation	0.95	0.52	0.62
Skewness	0.77	1.73	1.90
Kurtosis	3.04	6.43	7.22

Note: N = 9,072.

Next, Table 1-3 presents the descriptive statistics for cross-informant reports of specific types of victimization. Responses were dichotomized into two categories (never and rarely = no moderate or frequent bullying victimization; sometimes, often, and very often = moderate or frequent bullying victimization). Results indicated that students reported higher levels of moderate or frequent bullying victimization across all types (range: 32%–44.6%), followed by parents (range: 7.7%–20.3%) and teachers (range: 3.6%–10.3%). With respect to bullying victimization type, students reported experiencing moderate or frequent indirect relational bullying victimization at the highest rates (44.6%), followed by verbal (41.6%), direct relational (33.4%), and physical (32%) victimization. Teachers and parents most frequently reported that students experienced verbal bullying victimization at moderate or frequent levels (10.3% and 20.3%, respectively), followed by direct relational (8.8% and 12.3%), indirect relational (6.5% and 8%), and physical (3.6% and 7.7%) victimization.

Table 1-3 *Descriptive Statistics for Reports of Specific Types of Bullying Victimization*

	Physical			Verbal			Direct Relational			Indirect Relational		
	S	T	P	S	T	P	S	T	P	S	T	P
Never	45.4	79.8	74.1	34.6	59.7	61.3	44.7	71.2	74.9	35.0	72.2	81.2
Rarely	22.7	16.6	18.2	23.9	30.0	18.5	21.9	20.1	12.9	20.4	21.3	10.8
No moderate or frequent BV	68.1	96.4	92.3	58.5	89.7	79.8	66.6	91.3	87.8	55.4	93.5	92.0

	Physical			Verbal			Direct Relational			Indirect Relational		
	S	T	P	S	T	P	S	T	P	S	T	P
Sometimes	18.7	3.3	6.3	27.5	9.1	15.4	18.4	7.2	9.7	23.6	5.9	6.6
Often	6.5	0.2	0.9	6.3	0.9	3.4	7.2	1.1	1.9	9.7	0.5	1.0
Very Often	6.8	0.1	0.5	7.8	0.3	1.5	7.8	0.5	0.7	11.3	0.1	0.4
Moderate or frequent BV	32.0	3.6	7.7	41.6	10.3	20.3	33.4	8.8	12.3	44.6	6.5	8.0
Total (%)	100	100	100	100	100	100	100	100	100	100	100	100
Total (N)	8977	9065	9023	8845	9065	9008	8948	9060	8913	8904	9066	8881

Note: BV (bullying victimization), S (Student), T (Teacher), P (Parent). Total N varies across informants and BV types due to missing data.

Cross-Informant Concordance in Reports of Bullying Victimization at the Overall Level

Table 1-4 presents Pearson's correlations of overall bullying victimization scores between students and teachers and between students and parents, separately for disabled and nondisabled students. Overall, the magnitude of all correlation coefficients (range: $r = .212-.306$) indicated small-to-medium agreement in both student-teacher and student-parent pairs for both groups. For both disabled and nondisabled students, students showed higher levels of agreement with parents than with teachers (disabled students: $r = .250$ for parents vs. $r = .212$ for teachers; nondisabled students: $r = .306$ for parents vs. $r = .284$ for teachers). Within each student-adult pair, the coefficients were lower for disabled students than for nondisabled students, both in student-teacher pairs ($r = .212$ vs. $.284$) and in student-parent pairs ($r = .250$ vs. $.306$). However, the 95% confidence intervals of the coefficients among disabled students were relatively wide due to the smaller sample size and overlapped with those for nondisabled students; thus, differences in correlation coefficients should be interpreted with caution.

Table 1-4 *Correlations of Overall Bullying Victimization Reports in Student-Teacher and Student-Parent Pairs by Students' Disability Status*

	Nondisabled r [95% CI]	Disabled r [95% CI]
Student-Teacher Pairs	.284 [.264-.304]	.212 [.146-.276]
Student-Parent Pairs	.306 [.287-.326]	.250 [.185-.312]

Note: N = 9,072 (N = 8,237 for nondisabled students & 835 for disabled students). r (Pearson's correlation coefficient). CI (confidence interval). All correlations were statistically significant ($p < .001$).

Cross-Informant Concordance in Reports of Specific Types of Bullying Victimization

Concordance in the reports of specific types of bullying victimization between students and teachers and between students and parents by students' disability status is presented in Tables 1-5 and 1-6, respectively, using proportions and Cohen's kappa statistics.

Table 1-5 Student-Teacher Concordance in Bullying Victimization Types by Students' Disability Status

BV Type	Disability status	Positive concordance (S yes-T yes)	Negative concordance (S no-T no)	Teacher underestimation (S yes-T no)	Teacher overestimation (S no-T yes)	Total N (%)	Cohen's kappa (κ)
Physical	Nondisabled	153 (1.9%)	5476 (67.2%)	2397 (29.4%)	126 (1.6%)	8152 (100%)	.050
	Disabled	24 (2.9%)	478 (58.4%)	297 (36.3%)	19 (2.3%)	818 (100%)	.043
Verbal	Nondisabled	510 (6.3%)	4496 (55.9%)	2775 (34.5%)	257 (3.2%)	8038 (100%)	.115
	Disabled	87 (10.9%)	364 (45.5%)	301 (37.6%)	48 (6.0%)	800 (100%)	.110
Direct relational	Nondisabled	328 (4.0%)	5163 (63.5%)	2340 (28.8%)	299 (3.7%)	8130 (100%)	.085
	Disabled	67 (8.3%)	405 (50.3%)	254 (31.5%)	80 (9.9%)	806 (100%)	.048
Indirect relational	Nondisabled	326 (4.0%)	4363 (53.9%)	3221 (39.8%)	180 (2.2%)	8090 (100%)	.058
	Disabled	43 (5.3%)	364 (45.1%)	377 (46.7%)	24 (3.0%)	808 (100%)	.039

Note: BV (bullying victimization), S (Student), T (Teacher), yes (experienced moderate or frequent BV), no (did not experience moderate or frequent BV). Total N varies across BV types due to missing data.

Table 1-6 Student-Parent Concordance in Bullying Victimization Types by Students' Disability Status

BV Type	Disability status	Positive concordance (S yes-P yes)	Negative concordance (S no-P no)	Parent underestimation (S yes-P no)	Parent overestimation (S no-P yes)	Total N (%)	Cohen's kappa (κ)
Physical	Nondisabled	300 (3.7%)	5293 (65.2%)	2233 (27.5%)	294 (3.6%)	8120 (100%)	.083
	Disabled	50 (6.2%)	447 (55.3%)	266 (32.9%)	46 (5.7%)	809 (100%)	.074
Verbal	Nondisabled	982 (12.3%)	4159 (52.1%)	2290 (28.7%)	559 (7.0%)	7990 (100%)	.198
	Disabled	161 (20.3%)	327 (41.3%)	225 (28.4%)	79 (10.0%)	792 (100%)	.225
Direct relational	Nondisabled	476 (5.9%)	4930 (61.5%)	2158 (26.9%)	456 (5.7%)	8020 (100%)	.115
	Disabled	75 (9.7%)	398 (51.4%)	233 (30.1%)	68 (8.8%)	774 (100%)	.107
Indirect relational	Nondisabled	403 (5.1%)	4257 (53.6%)	3079 (38.8%)	201 (2.5%)	7940 (100%)	.078
	Disabled	64 (8.3%)	346 (44.7%)	339 (43.7%)	26 (3.4%)	775 (100%)	.086

Note: BV (bullying victimization), S (Student), P (Parent), yes (experienced moderate or frequent BV), no (did not experience moderate or frequent BV). Total N varies across BV types due to missing data.

Similarities Between Disabled and Nondisabled Students: Across both student groups, students showed higher rates of concordant positive reports of moderate or frequent bullying victimization with parents (Table 1-6, *Positive concordance* column) than with teachers (Table 1-5, *Positive concordance* column) across all types. Specifically, among nondisabled students, concordant positive rates were consistently higher in student-parent pairs than in student-teacher pairs, with differences ranging from 1.1 to 6.0 percentage points, ordered as follows: (1) indirect relational (5.1% vs. 4.0%; $\Delta = 1.1\%$), (2) direct relational (5.9% vs. 4.0%; $\Delta = 1.9\%$), (3) physical (3.7% vs. 1.9%; $\Delta = 1.8\%$), and (4) verbal bullying victimization (12.3% vs. 6.3%; $\Delta = 6.0\%$). A similar pattern was observed among disabled students, for whom concordant positive rates were also consistently higher in student-parent pairs than in student-teacher pairs, with differences ranging from 1.4 to 9.4 percentage points, ordered as follows: (1) direct relational (9.7% vs. 8.3%; $\Delta = 1.4\%$), (2) indirect relational (8.3% vs. 5.3%; $\Delta = 3.0\%$), (3) physical (6.2% vs. 2.9%; $\Delta = 3.3\%$), and (4) verbal bullying victimization (20.3% vs. 10.9%; $\Delta = 9.4\%$). Although both disabled and nondisabled students had higher concordant positive rates with parents than with teachers, these rates were generally low for both groups of students—remaining below approximately 20% for disabled students (student-teacher range: 2.9%–10.9%; student-parent range: 6.2%–20.3%) and below 12% for nondisabled students (student-teacher range: 1.9%–6.3%; student-parent range: 3.7%–12.3%).

With regard to adult underestimation, rates of underestimation were higher in student-teacher pairs (Table 1-5, *Teacher underestimation* column) than in student-parent pairs (Table 1-6, *Parent underestimation* column) across all bullying victimization types for both disabled and nondisabled students. Specifically, among nondisabled students, teachers' underestimation rates were consistently higher than those of parents, with differences ranging from 1.0 to 5.2 percentage points, ordered as follows: (1) indirect relational (39.8% vs. 38.8%; $\Delta = 1.0\%$), (2) physical (29.4% vs. 27.5%; $\Delta = 1.9\%$) and direct relational (28.8% vs. 26.9%; $\Delta = 1.9\%$), and (3) verbal bullying victimization (34.5% vs. 28.7%; $\Delta = 5.2\%$). A similar pattern was observed among disabled students, for whom teachers' underestimation rates were also consistently higher than those of parents, with differences ranging from 1.4 to 9.2 percentage points, ordered as follows: (1) direct relational (31.5% vs. 30.1%; $\Delta = 1.4\%$), (2) indirect relational (46.7% vs. 43.7%; $\Delta = 3.0\%$), (3) physical (36.3% vs. 32.9%; $\Delta = 3.4\%$), and (4) verbal bullying victimization (37.6% vs. 28.4%; $\Delta = 9.2\%$).

With regard to adult overestimation, rates of overestimation were higher in student-parent pairs (Table 1-6, *Parent overestimation* column) than in student-teacher pairs (Table 1-5, *Teacher overestimation* column) for both disabled and nondisabled students, with one exception. Specifically, among nondisabled students, parents' overestimation rates were higher than those of teachers across all types of victimization, with differences ranging from 0.3 to 3.8 percentage points, ordered as follows: (1) indirect relational (2.5% vs. 2.2%; $\Delta = 0.3\%$), (2) physical (3.6% vs. 1.6%; $\Delta = 2.0\%$) and direct relational (5.7% vs. 3.7%; $\Delta = 2.0\%$), and (3) verbal bullying victimization (7.0% vs. 3.2%; $\Delta = 3.8\%$). A similar pattern was observed among disabled students, for whom parents' overestimation rates were also higher than those of teachers for three types of victimization, with differences ranging from 0.4 to 4.0 percentage points, ordered as follows: (1) indirect relational (3.4% vs. 3.0%; $\Delta = 0.4\%$), (2) physical (5.7% vs. 2.3%; $\Delta = 3.4\%$), and (3) verbal bullying victimization (10.0% vs. 6.0%; $\Delta = 4.0\%$). One exception was direct relational bullying victimization, for which teachers' overestimation rate was higher than that of parents (9.9% vs. 8.8%; $\Delta = 1.1\%$).

Lastly, with regard to negative concordance, rates were generally higher in student-

teacher pairs (Table 1-5, *Negative concordance* column) than in student-parent pairs (Table 1-6, *Negative concordance* column) across bullying victimization types for both disabled and nondisabled students. Specifically, among nondisabled students, teachers' negative concordance rates were higher than those of parents, with differences ranging from 0.3 to 3.8 percentage points, ordered as follows: (1) indirect relational (53.9% vs. 53.6%; $\Delta = 0.3\%$), (2) physical (67.2% vs. 65.2%; $\Delta = 2.0\%$) and direct relational (63.5% vs. 61.5%; $\Delta = 2.0\%$), and (3) verbal (55.9% vs. 52.1%; $\Delta = 3.8\%$) bullying victimization. A similar pattern was observed among disabled students, for whom teachers' negative concordance rates were also higher than those of parents for three types of victimization, with differences ranging from 0.4 to 4.2 percentage points, ordered as follows: (1) indirect relational (45.1% vs. 44.7%; $\Delta = 0.4\%$), (2) physical (58.4% vs. 55.3%; $\Delta = 3.1\%$), and (3) verbal bullying victimization (45.5% vs. 41.3%; $\Delta = 4.2\%$). One exception was direct relational bullying victimization, for which teachers' negative concordance rates were lower than those of parents (50.3% vs. 51.4%; $\Delta = -1.1\%$).

Taken together, for both disabled and nondisabled students, systematic differences by informant type were evident, with parents showing higher rates of positive concordance, higher rates of overestimation, lower rates of underestimation, and lower rates of negative concordance in the reports of student bullying victimization compared to teachers. Kappa values, which provide a summary of chance-adjusted overall concordance, were higher for student-parent pairs than those for student-teacher pairs across all types of bullying victimization for both disabled students and nondisabled students. This pattern is likely driven in part by parents' higher rates of positive concordance, particularly in this study's context of generally low adult-reported prevalence of moderate or frequent bullying victimization (teacher range: 3.6–10.3%, parent range: 7.7–20.3%; Table 1-4). Regarding kappa values, it is also important to note that most kappa values fell within the slight agreement range in both pairs for both groups (student-teacher range: $.050 \leq \kappa \leq .115$ for nondisabled students and $.039 \leq \kappa \leq .110$ for disabled students; student-parent range: $.078 \leq \kappa \leq .198$ for nondisabled students and $.074 \leq \kappa \leq .225$ for disabled students). These findings suggest that overall levels of concordance between students and adults (both teachers and parents) in the reports of moderate or frequent bullying victimization were low, regardless of students' disability status.

Differences Between Disabled and Nondisabled Students: Adults—both teachers and parents—showed higher rates of concordant positive reports of moderate or frequent victimization for disabled students than for nondisabled students, a pattern that was consistent across all victimization types. Table 1-5 (*Positive concordance* column) illustrates this pattern in student-teacher pairs, in which concordant positive rates were higher for disabled students than for nondisabled students. Differences ranged from 1.0 to 4.6 percentage points, ordered as follows: (1) physical (2.9% vs. 1.9%; $\Delta = 1.0\%$), (2) indirect relational (5.3% vs. 4.0%; $\Delta = 1.3\%$), (3) direct relational (8.3% vs. 4.0%; $\Delta = 4.3\%$), and (4) verbal (10.9% vs. 6.3%; $\Delta = 4.6\%$). Similarly, Table 1-6 (*Positive concordance* column) illustrates this pattern in student-parent pairs; differences between disabled and nondisabled students ranged from 2.5 to 10.0 percentage points, ordered as follows: (1) physical (6.2% vs. 3.7%; $\Delta = 2.5\%$), (2) indirect relational (8.3% vs. 5.1%; $\Delta = 3.2\%$), (3) direct relational (9.7% vs. 5.9%; $\Delta = 3.8\%$), and (4) verbal (20.3% vs. 12.3%; $\Delta = 10.0\%$).

At the same time, rates of both adult underestimation and adult overestimation of moderate or frequent bullying victimization were also generally higher for disabled students than for nondisabled students across all victimization types. With regard to adult underestimation,

Table 1-5 (*Teacher underestimation* column) illustrates higher teacher underestimation rates for disabled students than for nondisabled students, with differences ranging from 2.7 to 6.9 percentage points, ordered as follows: (1) direct relational (31.5% vs. 28.8%; $\Delta = 2.7\%$), (2) verbal (37.6% vs. 34.5%; $\Delta = 3.1\%$), (3) physical (36.3% vs. 29.4%; $\Delta = 6.9\%$) and indirect relational (46.7% vs. 39.8%; $\Delta = 6.9\%$). Table 1-6 (*Parent underestimation* column) illustrates higher parent underestimation rates for disabled students than for nondisabled students, with differences ranging from 3.2 to 5.4 percentage points, ordered as follows: (1) direct relational (30.1% vs. 26.9%; $\Delta = 3.2\%$), (2) indirect relational (43.7% vs. 38.8%; $\Delta = 4.9\%$), and (3) physical (32.9% vs. 27.5%; $\Delta = 5.4\%$). An exception was observed for verbal bullying victimization, for which parent underestimation rates were nearly identical but slightly lower for disabled students than for nondisabled students (28.4% vs. 28.7%; $\Delta = -0.3\%$).

With regard to adult overestimation, Table 1-5 (*Teacher overestimation* column) illustrates higher teacher overestimation rates for disabled students than for nondisabled students, with differences ranging from 0.7 to 6.2 percentage points, ordered as follows: (1) physical (2.3% vs. 1.6%; $\Delta = 0.7\%$), (2) indirect relational (3.0% vs. 2.2%; $\Delta = 0.8\%$), (3) verbal (6.0% vs. 3.2%; $\Delta = 2.8\%$), and direct relational (9.9% vs. 3.7%; $\Delta = 6.2\%$). Table 1-6 (*Parent overestimation* column) illustrates higher parent overestimation rates for disabled students than for nondisabled students, with differences ranging from 0.9 to 3.1 percentage points, ordered as follows: (1) indirect relational (3.4% vs. 2.5%; $\Delta = 0.9\%$), (2) physical (5.7% vs. 3.6%; $\Delta = 2.1\%$), (3) verbal (10.0% vs. 7.0%; $\Delta = 3.0\%$), and (4) direct relational (8.8% vs. 5.7%; $\Delta = 3.1\%$).

Lastly, with regard to negative concordance, rates were higher for nondisabled students than for disabled students across all victimization types. Table 1-5 (*Negative concordance* column) illustrates higher teacher negative concordance rates for nondisabled students than for disabled students, with differences ranging from 8.8 to 13.2 percentage points, ordered as follows: (1) physical (67.2% vs. 58.4%; $\Delta = 8.8\%$) and indirect relational (53.9% vs. 45.1%; $\Delta = 8.8\%$), (2) verbal (55.9% vs. 45.5%; $\Delta = 10.4\%$), and (3) direct relational bullying victimization (63.5% vs. 50.3%; $\Delta = 13.2\%$). Table 1-6 (*Negative concordance* column) illustrates higher parent negative concordance rates for nondisabled students than for disabled students, with differences ranging from 8.9 to 10.8 percentage points, ordered as follows: (1) indirect relational (53.6% vs. 44.7%; $\Delta = 8.9\%$), (2) physical (65.2% vs. 55.3%; $\Delta = 9.9\%$), (3) direct relational (61.5% vs. 51.4%; $\Delta = 10.1\%$), and (4) verbal bullying victimization (52.1% vs. 41.3%; $\Delta = 10.8\%$).

Taken together, systematic differences existed by students' disability status. Compared to nondisabled students, disabled students showed higher rates of concordant positive reports with both teachers and parents, while also showing higher levels of discordance—including both adult underestimation and overestimation, and lower rates of concordant negative reports with both types of adults. Accordingly, despite disabled students' higher positive concordance rates, their lower negative concordance and higher discordance likely reduced overall observed agreement and resulted in generally lower kappa values relative to nondisabled students. As shown in Table 1-5, nondisabled students showed higher kappa values than disabled students across all victimization types in student-teacher pairs: physical (.050 vs. .043), verbal (.115 vs. .110), direct relational (.085 vs. .048), and indirect relational (.058 vs. .039). Table 1-6 similarly shows higher kappa values for nondisabled students than for disabled students in student-parent pairs for physical (.083 vs. .074) and direct relational bullying victimization (.115 vs. .107). However, for two victimization types, nondisabled students had lower kappa values than disabled students:

verbal (.198 vs. .225) and indirect relational (.078 vs. .086). Although the observed agreement rates ($Pr(o)$; rates of both positive and negative concordance) were higher for nondisabled students than for disabled students (verbal: 64.4% vs. 61.6%, indirect relational: 58.7% vs. 53.0%), the expected agreement rates ($Pr(e)$; not shown in the tables) were also higher for nondisabled students due to the differences in the marginal distributions of student- and parent-reports, which consequently resulted in lower kappa values for nondisabled students for these two types of bullying victimization.

Discussion

Using national-level survey data on bullying victimization reported by U.S. students in late childhood and their teachers and parents, this study examined the similarities and differences between disabled and nondisabled students in cross-informant concordance in overall bullying victimization (RQ1) and in specific types of bullying victimization (RQ2). A synthesis of key findings across these two research questions and their implications for future research, along with the present study's practical implications, limitations, and strengths, is presented below.

Similarities in Cross-Informant Concordance Between Disabled and Nondisabled Students

One major similarity found in both disabled and nondisabled students was higher concordance between students and parents than students and teachers, as reflected in both Pearson's correlation coefficients (for overall bullying victimization; RQ1) and Cohen's kappa values (for specific types of bullying victimization; RQ2). This finding is consistent with previous concordance studies examining students', teachers', and parents' reports simultaneously (Demaray et al., 2013; Ladd & Kochenderfer-Ladd, 2002; Løhre, 2022). The present study extends the literature by demonstrating that higher student-parent concordance, relative to student-teacher concordance, also appeared among disabled students. This pattern may be attributable to disabled students' greater tendency to disclose their experiences of bullying victimization to parents rather than to teachers, similar to the tendency observed among nondisabled students (Hartley et al., 2017).

Another major similarity between disabled and nondisabled students was the generally low levels of concordance with adults (both teachers and parents)—also reflected in both Pearson's correlation coefficients (for overall bullying victimization; RQ1) and kappa values (for specific types of bullying victimization; RQ2). This finding was consistent with prior concordance studies examining youth in general (Demaray et al., 2013; Ladd & Kochenderfer-Ladd, 2002; Løhre, 2022; Shakoor et al., 2011; Tang et al., 2025; Totura et al., 2009) as well as studies explicitly including youth with specific disability types (Cho et al., 2020; H.-F. Hu et al., 2021; Zeedyk et al., 2014). However, one exception was noted in Zeedyk et al. (2014) who found moderate concordance in student-parent reports of overall bullying victimization among students with ASD and of relational bullying victimization among typically developing students. To better understand concordance patterns in relation to disability, future research would benefit from including larger samples of disabled students and examining cross-informant concordance both by disability status and by specific disability types.

Because both Pearson's correlation and Cohen's kappa are summary statistics that capture the overall concordance across informants, examining the proportions of participants across the four concordance patterns—positive concordance, negative concordance, adult underestimation, and adult overestimation—provides additional insight into the similarities in

cross-informant concordance between disabled and nondisabled students (for specific types of bullying victimization; RQ2). In addition to the higher rates of positive concordance in student-parent pairs than in student-teacher pairs for both student groups, a notable finding was that parents were less likely than teachers to underestimate students' experiences of moderate or frequent bullying victimization across all types, while being more likely to overestimate students' experiences across most bullying victimization types (except direct relational victimization). This pattern may have emerged due to several factors. Compared to teachers, parents have limited opportunities to directly observe students' everyday schooling experiences and peer interactions, including bullying incidents. According to a systematic review, parents often learn about their child's experiences of bullying victimization by hearing from their child or making guesses based on changes in their child's behavior or functioning, rather than hearing from their child's school (Harcourt et al., 2014). Accordingly, parents may be more likely than teachers to overestimate the frequency of child bullying victimization (e.g., reporting "sometimes" when the child reports "rarely") based on their interpretations of indirect and limited information. Additionally, although teachers have more opportunities than parents to directly observe bullying, bullying often manifests in covert forms and occurs in locations that are less supervised by teachers (e.g., bathrooms, locker rooms; Bradshaw et al., 2007; Stockdale et al., 2002; Thomsen et al., 2024), which makes it difficult for teachers to be aware of all bullying incidents. Moreover, given that both disabled and nondisabled students are more willing to share their experiences of bullying victimization with parents than teachers (Hartley et al., 2017), parents may be less likely than teachers to underestimate students' bullying victimization.

Differences in Cross-Informant Concordance between Disabled and Nondisabled Students

Next, regarding the differences in cross-informant concordance between disabled and nondisabled students, findings based on summary statistics (Pearson's correlation coefficients and Cohen's kappa values) suggest that disabled students generally showed lower overall concordance with both teachers and parents than nondisabled students in reporting bullying victimization at the overall level (RQ1) and across specific victimization types (RQ2). The proportion of participants across the four different concordance patterns helps to unpack this result (RQ2). Across all victimization types, teachers and parents were more likely to agree with the existence of moderate or frequent bullying victimization among disabled students than those among nondisabled students, but these adults were much more likely to overestimate and underestimate disabled students' experiences as well. Due to this higher level of disagreement for disabled students, the overall concordance became lower for this population than nondisabled students.

Prior literature suggests some potential factors that may help to understand these systematic disability-based differences in cross-informant concordance in bullying victimization reports. One factor is disabled students' greater willingness to disclose their experiences of bullying victimization to teachers and parents compared to their nondisabled counterparts (Hartley et al., 2017), which may contribute to higher rates of positive student-teacher and student-parent concordance among disabled students. Disabled students' greater disclosure may also contribute to teachers' and parents' higher rates of overestimation for disabled students. For example, once adults learn about bullying incidents through disabled students' disclosure, they may be more likely to report higher levels of frequency of bullying victimization than disabled students themselves, based on their tendency to overprotect disabled students (Forber-Pratt et al., 2024; Ručman & Šulc, 2025) or to assume the existence of additional bullying incidents that are

not disclosed to them (Fisher et al., 2022; Harcourt et al., 2014).

At the same time, disability-related stereotypes may serve as a potential factor contributing to adults' higher rates of underestimation of bullying victimization among disabled students than those among nondisabled students. For instance, even when teachers and parents become aware of disabled students' bullying victimization (through students' disclosure or other sources), they may be more likely to normalize bullying for this population, such as perceiving it as unavoidable due to students' disabilities, and thus minimize the frequency of bullying incidents (Hartley et al., 2015; Liasidou & Ioannidou, 2021; Zhang & Chen, 2023). In addition, students with certain types of disabilities (e.g., IDD) may experience difficulties in reporting their experiences of bullying victimization (Fisher et al., 2022), which could lead to teachers' and parents' under-recognition and underestimation. Lastly, the type of teacher providing reports may also contribute to the higher teacher underestimation rates observed for disabled students. In the present study, for example, participating teachers were students' reading and language arts teachers (i.e., general education teachers), who may have fewer opportunities to observe disabled students' peer interactions or may feel less responsibility for monitoring them (Liasidou & Ioannidou, 2021; Rose, Monda-Amaya, et al., 2018), which can increase their likelihood to underestimate disabled students' bullying victimization than special education teachers.

Taken together, multiple factors may operate in tandem and help to explain why disabled students showed not only higher positive concordance but also higher discordance with teachers and parents in the reports of bullying victimization, compared to nondisabled students. These findings and interpretations point to several important considerations for future research, such as collecting not only reports of bullying victimization from various informants but also information on potential contributing factors (e.g., students' disclosure, adults' beliefs), utilizing mixed methods (e.g., surveys to quantify cross-informant concordance and qualitative interviews to investigate informants' underlying perceptions), and recruiting larger samples of participants—including disabled students (e.g., students with various disability types) and their surrounding adults (e.g., both general and special education teachers).

Practical Implications

Findings from the present study have several important implications for school-based anti-bullying efforts. First, the generally low levels of student-adult concordance—regardless of students' disability status and informant type (teachers vs. parents)—suggest that relying on a single informant may be insufficient for accurate assessment of bullying victimization. This underscores the importance of gathering information from various stakeholders, including students and key adults in their lives, to identify and address bullying victimization more effectively (Casper et al., 2015; Ladd & Kochenderfer-Ladd, 2002). Second, this study found that discordance between students and adults (both teachers and parents) was more often due to adult underestimation than adult overestimation, which highlights the need to provide teachers and parents with relevant training and resources. In particular, given that teachers' and parents' rates of both overestimation and underestimation were higher for disabled students than for nondisabled students, training and resources should explicitly address unique circumstances surrounding disabled students' bullying victimization experiences. One example is the *Disability Anti-bullying* (DIAL) training program, which was designed to increase teachers' efficacy in preventing and intervening in bullying with a particular focus on disabled students (Espelage, Rose, et al., 2024). One of the components of this training program provides foundational knowledge about disability-related characteristics that may increase students' vulnerability to

bullying, as well as prejudice associated with disability and other identities, which can help teachers to effectively recognize disabled students' bullying victimization (Espelage, Forber-Pratt, et al., 2024). Such foundational knowledge can help not only teachers but also parents of disabled students to become more vigilant for their child's bullying victimization. Finally, given that students are the ones who directly experience bullying victimization and that their self-reports can capture their actual experiences (Juvonen et al., 2001), anti-bullying initiatives should strengthen students' capacity to recognize victimization and to disclose their experiences to adults in their lives. This may involve providing students with opportunities to learn about the definition and various types of bullying, as well as concrete strategies for disclosing and seeking help from adults (e.g., speaking with trusted adults, using formal school reporting procedures). In addition, efforts should be made to remove barriers to student disclosure by fostering school environments in which students feel safe reporting bullying and all adults share a clear understanding of appropriate responses to students' bullying reports (Anti-Bullying Alliance, n.d.). Throughout these efforts, disabled students' needs should be explicitly addressed—for example, ensuring that educational materials and reporting tools meet their access needs (e.g., using plain language in instructional materials, making online reporting forms accessible to students with visual disabilities; Anti-Bullying Alliance, n.d.; Fisher et al., 2022).

Limitations and Strengths

The present study has some notable limitations. First, this study is primarily descriptive in nature. Although the findings indicate consistent patterns of similarities and differences in cross-informant concordance between disabled and nondisabled students, the present study did not examine underlying mechanisms of these patterns. Building on the present study's findings, future studies should investigate potential contributing factors utilizing various methodological approaches, including using more explanatory statistical models or qualitative methods for in-depth analyses of informant perceptions and reports. Second, due to the limited availability of disability-related measures in the dataset used in this study, analyses of cross-informant concordance based on more detailed indicators of disability (beyond a binary measure of disability status) were not possible. Given that students' primary educational placement (e.g., general vs. special education classrooms) or disability types (e.g., physical, behavioral, intellectual) may influence how students themselves, teachers, and parents perceive and report bullying victimization (Fisher et al., 2022; Rose, Stormont, et al., 2015; Rose, Webb, et al., 2018), future concordance studies incorporating this information would provide a more nuanced understanding of the similarities and differences in concordance patterns within disabled students. Third, although the bullying victimization measures in the ECLS-K:2011 used simple, plain language to describe specific behaviors corresponding to different types of bullying victimization, these measures were not designed with explicit consideration of disabled students, which may have limitations for capturing disabled students' experiences of bullying victimization. In light of this, future research may assess cross-informant concordance more effectively by utilizing measures developed and validated for disabled students, such as the *Assessment of Bullying Experiences*, which includes items particularly relevant for neurodivergent youth (e.g., youth with ASD, ADHD) and was validated for both neurodivergent and neurotypical youth (Morton et al., 2022).

Despite these limitations, the present study adds to our understanding of concordance in bullying victimization reports across students, teachers, and parents by leveraging national-level survey data in which bullying victimization was measured using the same wording and response

options across informants. This is a unique strength of this study given that, among the limited number of prior concordance studies examining student-teacher-parent triads (Demaray et al., 2013; Ladd & Kochenderfer-Ladd, 2002; Løhre, 2022), only Demaray et al. (2013) used the same bullying victimization measure across informants. Moreover, this study examined concordance in both overall bullying victimization and specific victimization types, extending prior research that has largely focused on bullying victimization at the overall level. The present study is also one of the first investigations assessing cross-informant concordance by students' disability status, providing empirical evidence on the similarities and differences between disabled and nondisabled students. To conclude, this study informs future research and practice aimed at improving concordance in bullying victimization reports across informants and fostering bully-free school environments where all students can feel safe and thrive regardless of their disability status.

Chapter 2

Bullying Victimization Trajectories in Late Elementary School: Examining the Role of Disability and Schoolwide Positive Behavioral Interventions and Supports

Summary

Despite disabled students' heightened vulnerability to bullying victimization in late elementary school years, little research has examined their experiences longitudinally or identified effective supports for this population. Using repeated-measures latent profile analysis, this study analyzed national survey data on U.S. students to identify distinct victimization trajectories and examine whether students' trajectory membership varied by disability status and their schools' implementation of a widely used behavioral support framework called Schoolwide Positive Behavioral Interventions and Supports (SWPBIS). Four trajectories were identified (stable high, increasing, decreasing, stable low). Disabled students had significantly higher risk for following the stable high, increasing, or decreasing trajectory (versus the stable low trajectory). SWPBIS showed nonsignificant effects—overall or by disability status. Findings highlight the need for strengthening SWPBIS with greater attention to bullying and disability.

Introduction

Bullying is a profound social problem associated with a wide range of negative academic, social, emotional, and behavioral outcomes among victimized youth (Heerde & Hemphill, 2018; Holt et al., 2015; Moore et al., 2017; National Academies of Sciences, Engineering, and Medicine, 2016a; Schoeler et al., 2018). Bullying is defined as unwanted aggressive behavior rooted in a power imbalance between individuals (excluding siblings or dating partners), often repeated over time and manifested in various forms (e.g., physical, verbal, relational; Gladden et al., 2014; Olweus, 1993). According to a recent national survey, approximately 19% of U.S. youth reported experiencing bullying victimization at school, underscoring the pervasiveness of the problem (National Center for Education Statistics, 2022). Importantly, disabled youth are at particularly high risk; studies using nationally representative data consistently suggest that they have higher prevalence rates of being bullied compared to their nondisabled peers (Blake et al., 2012; Lebrun-Harris et al., 2019; Turner et al., 2011).

From a developmental perspective, disabled students may become especially vulnerable to bullying victimization during the late elementary school years. As peer culture becomes more stratified and hierarchical in this period, disability-related characteristics (e.g., physical, sensory, intellectual, social-emotional) may heighten peers' perceptions of these students as different, positioning them lower in the peer hierarchy or marginalizing them within peer networks, thereby increasing their risk of victimization (Chen et al., 2015; Estell et al., 2009). Yet, little longitudinal research has examined how students' victimization experiences differ by disability status during this critical developmental stage (Monachino et al., 2021; Rose & Gage, 2017)—let alone which anti-bullying strategies may be effective in reducing risk for disabled students.

Researchers have suggested that effective school-based anti-bullying efforts should utilize a whole-school, multi-tiered framework incorporating both universal and targeted

strategies (Gaffney et al., 2021; National Academies of Sciences, Engineering, and Medicine, 2016b). In fact, an increasing number of U.S. schools have adopted Schoolwide Positive Behavioral Interventions and Supports (SWPBIS), which is a multi-tiered framework providing a continuum of interventions and supports to promote positive student behaviors and improve overall school climate (Center on PBIS, 2023, 2024; Sugai & Horner, 2009). Though not an anti-bullying program per se, SWPBIS has been considered a promising approach to preventing and reducing bullying, given its schoolwide emphasis on improving student behaviors and cultivating a safer and more supportive school environment (Bosworth & Judkins, 2014; Gage et al., 2019; Waasdorp et al., 2012). Nevertheless, only a few studies have empirically examined the associations between SWPBIS and bullying-related outcomes, with mixed results, and even fewer have explored whether its effects differ across student subgroups—such as disabled students—who are at elevated risk of victimization (Gage et al., 2019; Waasdorp et al., 2012). In summary, there is a need for longitudinal research examining bullying victimization experiences among disabled and nondisabled students during the late elementary school years, as well as the impact of SWPBIS on victimization experiences across these populations.

Longitudinal Research on Bullying Victimization and the Role of Disability

While experiencing bullying victimization at any point is harmful, longitudinal research has shown that stable exposure to bullying victimization over time is linked to the most adverse outcomes (Geoffroy et al., 2018; Wei et al., 2023). Therefore, identifying distinct trajectories of bullying victimization (e.g., stable high, increasing, stable low) during the late elementary school years and examining how disabled and nondisabled students differ in their likelihood of following these trajectories is crucial for developing effective and equitable anti-bullying strategies. To date, a handful of studies have examined distinct bullying victimization trajectories among youth (Biggs et al., 2010; Brendgen et al., 2016; Geoffroy et al., 2018; Jensen-Campbell et al., 2017; Ladd et al., 2017; Oncioiu et al., 2020; Sukhawathanakul & Leadbeater, 2020; Wei et al., 2023). These studies have varied in their focal developmental periods (e.g., early elementary school years, kindergarten through grade 12), but all used person-centered statistical approaches (e.g., latent profile analysis, growth mixture modeling) to identify groups of individuals who share similar trajectories (Masyn, 2013; Nagin & Odgers, 2010).

Two studies specifically examined trajectories during the late elementary school years. Using self-report data from 1,528 students, Biggs et al. (2010) identified five trajectories: low stable (56.2%), moderate stable (31.7%), decreasing (6%), increasing (4%), and chronic (2%) victimization. Similarly, Jensen-Campbell et al. (2017), using self-report data from 1,073 students, identified three trajectories: low-to-moderate stable (88.6%), decreasing (6.5%), and increasing (4.8%). While some inconsistencies in the trajectory types exist between these two studies, both found that the majority of students experienced low-to-moderate stable levels of victimization. Their findings also indicate that the experiences of bullying victimization are already diverse during the late elementary school years. However, neither study examined the protective or risk factors associated with students' membership in these trajectories, even though such analyses are essential for guiding more tailored anti-bullying efforts.

As noted above, disability has consistently been associated with elevated risk for bullying victimization in cross-sectional research; however, longitudinal studies on disabled students' experiences are limited, though a few studies have begun to address this gap. Rose and Gage (2017), using three-year data from 6,531 students in grades 3–12, found that disabled students experienced persistently higher rates of bullying victimization than their nondisabled peers.

However, they modeled a single average trajectory for each group, rather than capturing the diversity of victimization trajectories. Monachino et al. (2021) examined the role of disability in shaping students' victimization experiences; rather than estimating trajectories, however, they analyzed 1,349 students' experiences of victimization at individual time points (grade 4, 5, and 6). They found that in grade 5—the final year of elementary school—the proportion of disabled students experiencing pervasive victimization was significantly higher than the proportion reporting no victimization, a finding not observed in grade 4. This may suggest that disabled students, on average, experienced an increase in bullying victimization between grades 4 and 5, though further research is needed to investigate this possibility. Taken together, these studies highlight the need for longitudinal research that not only identifies distinct and meaningful trajectories of bullying victimization across key developmental years but also examines how disability status influence students' likelihood of following them over time.

Promise of SWPBIS as an Anti-Bullying Framework

Since its introduction in the late 1990s with support from the federal government, SWPBIS has been widely adopted across the United States, with over 27,500 schools in all 50 states implementing it during the 2022–23 school year (Center on PBIS, 2024; Sugai & Horner, 2009, 2020). SWPBIS is not a curriculum or packaged program but a three-tiered system of increasingly intensive, evidence-based supports designed to meet the behavioral needs of all students (Center on PBIS, 2023). Tier 1 represents the foundational level of support and emphasizes universal prevention through the establishment and teaching of positively stated schoolwide behavioral expectations (e.g., be respectful, show self-control), along with consistent procedures for monitoring and encouraging these behaviors, such as through meaningful rewards (Bastable et al., 2021; George et al., 2009). Tier 2 offers targeted interventions for students unresponsive to Tier 1 supports, which may include social skills instruction, behavioral education (e.g., Check In/Check Out), or mentoring programs (Bruhn & McDaniel, 2021; Hawken et al., 2009). Tier 3 interventions are provided to students with additional behavioral needs after accessing Tier 1 and Tier 2 supports; these more individualized interventions often involve offering one-on-one counseling or conducting a functional behavior assessment (FBA) and implementing a behavior intervention plan (BIP; Grasley-Boy et al., 2025; Scott et al., 2009). Implementation of SWPBIS is driven by school-based teams, guided by systematic data collection and supported by school-level capacity building (Center on PBIS, 2023). Prior studies have shown that the actual implementation of SWPBIS varies across schools, including differences in the timing of adopting more advanced tiers (Tiers 2 and 3; Kittelman et al., 2022) and the speed with which schools reach and sustain adequate levels of implementation fidelity (McIntosh et al., 2016).

Although SWPBIS was not intentionally designed to address bullying, researchers have suggested that its core features may help prevent and reduce it. For example, schoolwide consensus and emphasis on appropriate behaviors, increased adult monitoring, and a more positive school climate may contribute to reducing students' engagement in bullying (Bosworth & Judkins, 2014; Gage et al., 2019; Waasdorp et al., 2012). To date, however, only a few empirical studies have tested SWPBIS's effects on bullying, yielding mixed results. For example, Bosworth et al. (2018) found a reduction in student-reported bullying (victimization and perpetration items combined) among 19 high schools that implemented SWPBIS for two years and highlighted the role of school leadership in this process. Waasdorp et al. (2012) analyzed four years of longitudinal data from 37 elementary schools participating in a

randomized controlled effectiveness trial of the universal SWPBIS model. Using hierarchical linear modeling, they found that students in SWPBIS schools reported lower levels of teacher-reported bullying perpetration compared to those in non-SWPBIS schools. Gage et al. (2019) also used hierarchical linear models to analyze data from 118 elementary schools with SWPBIS and 118 matched comparison schools, but found no significant differences in student-reported bullying victimization between the two groups. Lastly, Ward and Gersten (2013) examined the Safe and Civil Schools model—a trademarked form of SWPBIS. Using differences-in-differences analyses on the data from 32 elementary schools (17 schools in the treatment group and 15 schools in the waitlist control group), they found no statistically significant effects on staff-reported bullying perpetration and student-reported bullying victimization. These mixed findings—likely influenced by differences in outcome measures, reporters, study contexts, and other factors—warrant further investigations into SWPBIS as a potential anti-bullying framework.

Another critical gap in the literature is the limited understanding of whether SWPBIS produces its intended outcomes equally across student subgroups, including disabled students (Lee & Gage, 2020). Regarding bullying, only two studies have explored this. Waasdorp et al. (2012) found that students' disability status was not a significant intervention effect modifier, indicating that the positive effects of SWPBIS on reducing teacher-reported bullying perpetration were consistent for both disabled and nondisabled students. Gage et al. (2019), using the percentage of disabled students as a school-level proxy (due to data limitations), found that it was not a significant factor influencing the overall null impact of SWPBIS on self-reported bullying victimization. Taken together, these findings are limited and inconclusive, underscoring the need for more disability-focused research on SWPBIS.

The Current Study

Despite the documented link between disability status and heightened risk for bullying victimization, few longitudinal studies have examined how the risk unfolds differently for disabled and nondisabled students over time. SWPBIS, a widely adopted multi-tiered framework for meeting all students' behavioral needs, may serve as an effective anti-bullying approach for both groups; however, its potential in this regard remains understudied. To address these gaps, the current study examines the following research questions (RQs):

RQ1. What are the distinct trajectories of bullying victimization during the late elementary school years?

RQ2. How are students' disability status and schools' SWPBIS implementation associated with students' membership in different bullying victimization trajectories?

RQ3. Does the impact of SWPBIS implementation on bullying victimization trajectory membership vary by students' disability status?

Methods

Data and Participants

The current study used public-use data from the Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011). ECLS-K:2011 recruited a nationally representative sample of 18,174 kindergartners during the 2010–11 school year and followed them across nine waves of data collection until the 2015–16 school year (Tourangeau et al., 2019). The present analyses primarily used data from the last three waves (Wave 7: Spring 2014,

Wave 8: Spring 2015, and Wave 9: Spring 2016), when most children in the ECLS-K:2011 cohort were transitioning from grades 3 to 5 (late elementary school years). Because this study examined the impact of implementing a schoolwide framework (i.e., SWPBIS) on students' membership in distinct bullying victimization trajectories, participants were restricted to students who remained in the same school from Wave 7 to Wave 9, resulting in 9,786 students nested in 2,089 schools. To address RQ1, students missing bullying victimization information at all three waves were excluded, yielding 9,080 students nested in 1,877 schools. For RQs 2 and 3, the analytic sample was further reduced to 7,784 students (nested in 1,474 schools) who had information on disability status, SWPBIS implementation, and other student- and school-level covariates included in the analyses (with two covariates imputed; see below for details on the list of variables and measurement). Here, the reduction in the analytic sample was primarily due to missing values on the SWPBIS implementation variable, which was not imputed because it is one of the primary variables of interest. Results from a chi-square test for independence of missingness status and trajectory profile membership indicated that this reduction did not disproportionately affect the distribution of the dependent variable categories (i.e., bullying victimization trajectory profiles), suggesting that case loss was unlikely to bias the results in a systematic way. Table 2-1 presents the sample characteristics.

Table 2-1 Sample Characteristics

Student Characteristics		School Characteristics	
	N (%)		N (%)
Gender		School Location	
Male	3955 (50.8)	City	587 (39.8)
Female	3829 (49.2)	Suburb	551 (37.4)
Ethnoracial Identity		Town or rural	336 (22.8)
Hispanic	2120 (27.2)	School Size	
Asian (non-Hispanic)	652 (8.4)	0–149 students	53 (3.6)
Black (non-Hispanic)	708 (9.1)	150–299	167 (11.3)
White (non-Hispanic)	3862 (49.6)	300–499	401 (27.2)
Others (non-Hispanic)	442 (5.7)	500–749	571 (38.7)
Household Poverty Level		750 and above	282 (19.1)
Below the poverty threshold	1743 (22.4)	School-Level Poverty (% FRPM)	
At or above 100%–below 200%	1794 (23.1)	0 to less than 25%	358 (24.3)
At or above 200%	4247 (54.6)	25 to less than 50%	295 (20.0)
Disability Status		50 to less than 75%	297 (20.2)
Nondisabled	7086 (91.0)	75 to 100%	524 (35.6)
Disabled	698 (9.0)	SWPBIS implementation	
		Yes	1144 (77.6)
		No	330 (22.4)
		Mean (SD)	
		School-Level Problem Behaviors	.75 (.41)

Note: Student N = 7,784, School N = 1,474. Values for household poverty level and school-level problem behaviors were imputed due to the high proportion of missing data (more than 5%).

Measures

Bullying Victimization: In the ECLS-K:2011, four items adapted from the 21-item Bullying, Fighting, and Victimization Scale (Espelage & Holt, 2001) asked students to report the

frequency of their experiences with four types of bullying victimization (i.e., physical, verbal, direct relational, indirect relational) during the school year. Response options were provided on a five-point Likert scale: never (coded as 0 in the current study), rarely (1), sometimes (2), often (3), and very often (4). For each wave (Waves 7–9), a mean score across the four items was computed if the student completed at least one item, yielding three continuous indicators used to estimate bullying victimization trajectories across the three waves.

Disability Status: Disability status was measured using one item indicating whether a student had an Individualized Education Program (IEP) on school record (response options: yes or no). Because this study examined how students' disability status shaped students' subsequent likelihood of following distinct bullying victimization trajectories across Waves 7 through 9, Wave 7 measures were used.

SWPBIS Implementation: SWPBIS implementation was measured based on school administrators' reports of whether their school was implementing SWPBIS (response options: yes or no). Following the same rationale as for disability status, the Wave 7 measure was used. Additionally, given that the effects of SWPBIS may vary by implementation quality, this study created an additional variable indicating whether a school implemented SWPBIS and had a school staff member who provided ongoing training or supports to classroom teachers in delivering effective behavioral supports. Information about the presence of this staff member was also obtained from school administrators at Wave 7. Among the 1,144 schools that implemented SWPBIS, 532 (46.5%) reported having this type of staff member. This variable served as a proxy for high-quality SWPBIS implementation and was used in a sensitivity analysis.

Covariates: Several student- and school-level factors were included as covariates, based on prior literature on risk and protective factors for bullying victimization. At the student level, three sociodemographic characteristics were included: gender (Casper & Card, 2017), ethnoracial identity (Xu et al., 2020), and household poverty status (Tippett & Wolke, 2014). Parent-reported child sex (male or female) was used as the measure of gender. Students' ethnoracial identity was also parent-reported, and the original eight mutually exclusive response categories were condensed into five to ensure sufficient statistical power: Hispanic, Asian (non-Hispanic), Black or African American (non-Hispanic), White (non-Hispanic), and other (non-Hispanic). Household poverty level, derived from parent reports, was categorized into three groups: (1) below the U.S. Census Bureau poverty threshold for a household of its size, (2) at or above the threshold but below 200% of the threshold, and (3) at or above 200% of the threshold.

At the school-level, four factors were included: school location, school size, school-level poverty, and school-level problem behavior (Bradshaw et al., 2009; Gower et al., 2015; Han et al., 2021; Khoury-Kassabri et al., 2004; Richard et al., 2011). School location was categorized into three groups (city, suburb, town or rural) by collapsing the 12 original locale categories for sufficient statistical power. School size was measured using the total number of enrolled students in each school, categorized into five levels: 0–149 students (1), 150–299 students (2), 300–499 students (3), 500–749 students (4), and 750 or more students (5). School-level poverty was measured using the percentage of students eligible for free or reduced-price meals (FRPM) in each school, categorized into four levels: 0 to less than 25% (1), 25 to less than 50% (2), 50 to less than 75% (3), and 75 to 100% (4). School-level problem behavior was measured with nine items asking school administrators to report the frequency of specific school problems (e.g., students bringing weapons to school, theft) on a five-point Likert scale: never happens (0), happens on occasion (1), happens at least once a month (2), happens at least once a week (3), and

happens daily (4). If the administrator completed at least one item, a mean score across the nine items⁴ was computed and used in the analyses. For all covariates, Wave 7 measures were used (except for gender and ethnoracial identity provided as time-invariant measures in the data).

Analytic Approach

To identify distinct trajectories of bullying victimization during late elementary school years (RQ1), this study used repeated-measures latent profile analysis (RMLPA). RMLPA is a subtype of latent profile analysis (LPA), a person-centered statistical method for identifying unobserved subgroups (i.e., latent profiles) based on shared patterns in individuals' responses to continuous indicators (Masyn, 2013; Nylund-Gibson & Choi, 2018). When these indicators are measured across multiple time points—such as bullying victimization scores at Wave 7, 8, and 9—the approach is referred to as RMLPA (Collins & Lanza, 2010). Using RMLPA, this study first estimated a series of models with varying numbers of profiles (e.g., one-profile, two-profile), each producing profile-specific conditional means and variances for the indicators. For example, a two-profile model would estimate the conditional means and variances of the three bullying victimization scores, with one profile potentially representing students with low scores across all three waves (e.g., stable low trajectory profile) and another representing students whose victimization starts low but increases over time (e.g., increasing trajectory profile). Models were estimated until no additional conceptual or statistical value was gained. The best-fitting model was selected based on a combination of statistical fit indices, overall classification precision (entropy > .80 indicating “good”), and the substantive interpretability of the profiles. For statistical fit indices (Nylund et al., 2007), this study used the Bayesian information criterion (BIC) and the sample-size adjusted BIC (ssBIC), with smaller values indicating better fit, as well as the Vuong-Lo-Mendell-Rubin likelihood ratio test (VLMR-LRT), which can compare the model fit between adjacent profile solutions in multilevel data (e.g., students nested in schools).

Next, to examine how students' disability status and schools' SWPBIS implementation are associated with membership in different bullying victimization trajectories (RQ2), this study used Vermunt's (2010) three-step approach, which has demonstrated great performance in estimating predictors of profile membership (Collier & Leite, 2017). In step 1, the latent profile model was established, and the bullying victimization trajectory profiles were identified (addressing RQ1). In step 2, participants were classified into one of the trajectory profiles based on their maximum posterior probabilities. In step 3, multilevel multinomial logistic regression models were estimated, accounting for classification error. In these models, the trajectory profile served as the dependent variable, disability status and SWPBIS implementation were the primary predictors, and other student- and school-level factors were included as covariates.

Finally, to examine whether the impact of SWPBIS implementation differed for disabled and nondisabled students (RQ3), an interaction term between disability status and SWPBIS implementation was included as an additional predictor in the multilevel multinomial regression models. This allowed for testing whether the association between SWPBIS implementation and victimization trajectory profile membership varied significantly by disability status.

To handle missing data, this study used two techniques. First, to handle missingness in profile indicators at one or more waves (e.g., bullying victimization scores only observed in

⁴ It should be noted that some school administrators received an abbreviated questionnaire in Wave 7 as part of the ECLS-K:2011 team's effort to reduce respondent burden. As a result, about 91% answered only four of the nine items (i.e., students bringing weapons to school, physical conflicts among students, student bullying, widespread disorder in classrooms).

Wave 7 for some students), Full Information Maximum Likelihood (FIML) estimation was used given its superior performance over traditional methods (e.g., listwise deletion, pairwise deletion; Enders & Bandalos, 2001). Second, for covariates, this study used the two-level fully conditional specification (FCS; also known as chained equations) imputation. Here, FCS imputation used a series of two-level regression models where variables are imputed one at a time and the imputed variable(s) serve as a predictor in all subsequent imputation steps, based on the Markov chain Monte Carlo estimation algorithm (Enders, 2022). This technique has shown good performance in imputing both categorical and continuous variables in multilevel data (Enders et al., 2018). FCS imputation can generate multiple sets of imputed values, but this study used only one dataset to preserve the structure of latent profiles, which is unlikely to materially affect the results (Enders & Gottschall, 2011; C. Enders, personal communication, May 15, 2024).

Stata version 18.0 was used for data management and preliminary analyses (StataCorp, 2023). To address research questions (including the FIML estimation for handling missing data on profile indicators), Mplus version 8.9 was used (Muthén & Muthén, 1998–2017). To impute missing values on covariates, Blimp version 3.2.12 was used (Enders et al., 2024).

Results

Preliminary Analyses

Table 2-2 presents the bivariate correlations and descriptive statistics of bullying victimization scores at Waves 7, 8, and 9. The correlations were moderate and positive (range: .45–.57) and significant for all pairs ($p < .001$). These associations between repeated measures were reflected in the latent profile models estimated in the subsequent analyses. Regarding the descriptive statistics, skewness and kurtosis values indicated that the variables were not severely non-normal (skewness < 2 and kurtosis < 7 ; Khine, 2013), but visual inspection of histograms suggested some departure from normality. Accordingly, robust standard errors were applied in estimating the latent profile models (Spurk et al., 2020).

Table 2-2 *Bivariate Correlations and Descriptive Statistics of Bullying Victimization Scores*

	BV at W7	BV at W8	BV at W9
BV at W7	-		
BV at W8	.52	-	
BV at W9	.45	.57	-
Mean	1.21	1.04	.97
SD	.94	.91	.91
Skewness	.78	1.00	1.11
Kurtosis	3.05	3.52	3.78

Note: BV (bullying victimization), W7 (Wave 7), W8 (Wave 8), W9 (Wave 9). Student N = 9,080, School N = 1,877. All correlations were significant at $p < .001$

Trajectories of Bullying Victimization

To determine the optimal number of trajectory profiles, a series of repeated-measures latent profile models were estimated. Table 2-3 presents the fit indices (i.e., BIC, ssBIC, and VLMR-LRT) and entropy values for the one- to seven-profile solutions. Results from the eight-profile model are not presented because the VLMR-LRT indicated that its fit was not

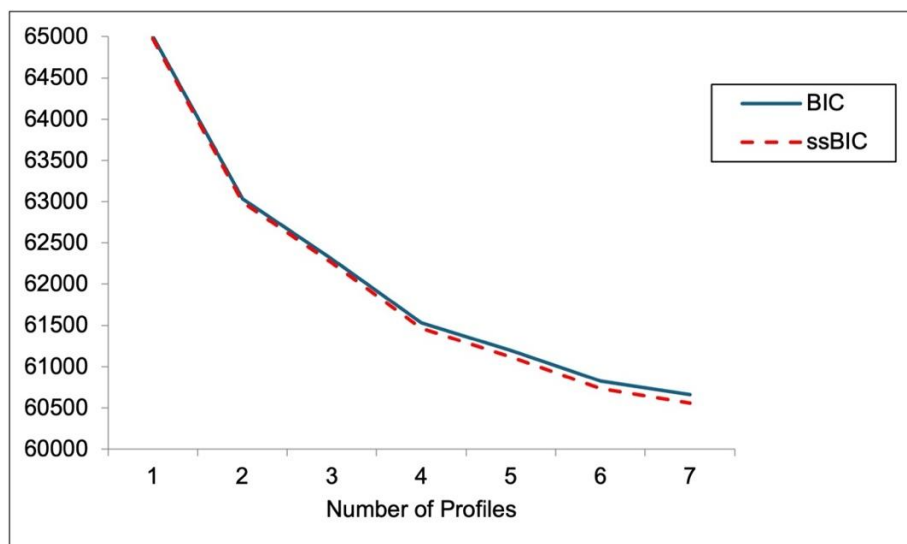
significantly better than the seven-profile model, suggesting that models with more than seven profiles would not improve model fit. The BIC and ssBIC values continued to decline through the seven-profile model, indicating improved fit. However, because information criteria often keep decreasing as more classes are introduced, prior literature recommends evaluating the magnitude of improvement in fit (i.e., changes in information criteria values) by plotting their values and inspecting an “elbow” point, in conjunction with considering the substantive interpretability of additional profiles (Masyn, 2013; Nylund-Gibson & Choi, 2018). As shown in Figure 2-1, prominent “elbows” appeared at the two-, four-, and six-profile models. Inspection of the profiles revealed that the four-profile model added substantive meaning beyond the two- and three-profile models, whereas the additional profiles identified the five- and six-profile models largely overlapped with the existing profiles in the four-profile solution and did not provide meaningful differentiation to the overall profile structure. Therefore, the four-profile model was selected as the best-fitting solution. Table 2-3 also reports entropy values, which are not used as a formal model selection criterion but reflect the overall precision of profile classification in the sample. Entropy values were consistently high for all models ($> .80$), with the four-profile solution having the highest value, further supporting its selection as the best-fitting model.

Table 2-3 *Fit Statistics and Entropy Values for Repeated-Measures Latent Profile Models*

	1-profile	2-profile	3-profile	4-profile	5-profile	6-profile	7-profile
LL	-32460.84	-31458.25	-31075.75	-30668.99	-30483.88	-30280.59	-30179.62
BIC	65003.70	63034.98	62306.43	61529.36	61195.60	60825.48	60660.00
ssBIC	64975.10	62993.67	62252.40	61462.63	61116.15	60733.32	60555.14
VLMR-LRT	-	< .001	< .001	< .001	.0008	.0001	.0365
Entropy	-	.841	.816	.842	.810	.826	.813

Note: LL (log-likelihood), BIC (Bayesian information criterion), ssBIC (sample-size adjusted BIC), VLMR-LRT (Vuong-Lo-Mendell-Rubin likelihood ratio test). Entropy was not used as a criterion for model selection but included in the table for the sake of brevity.

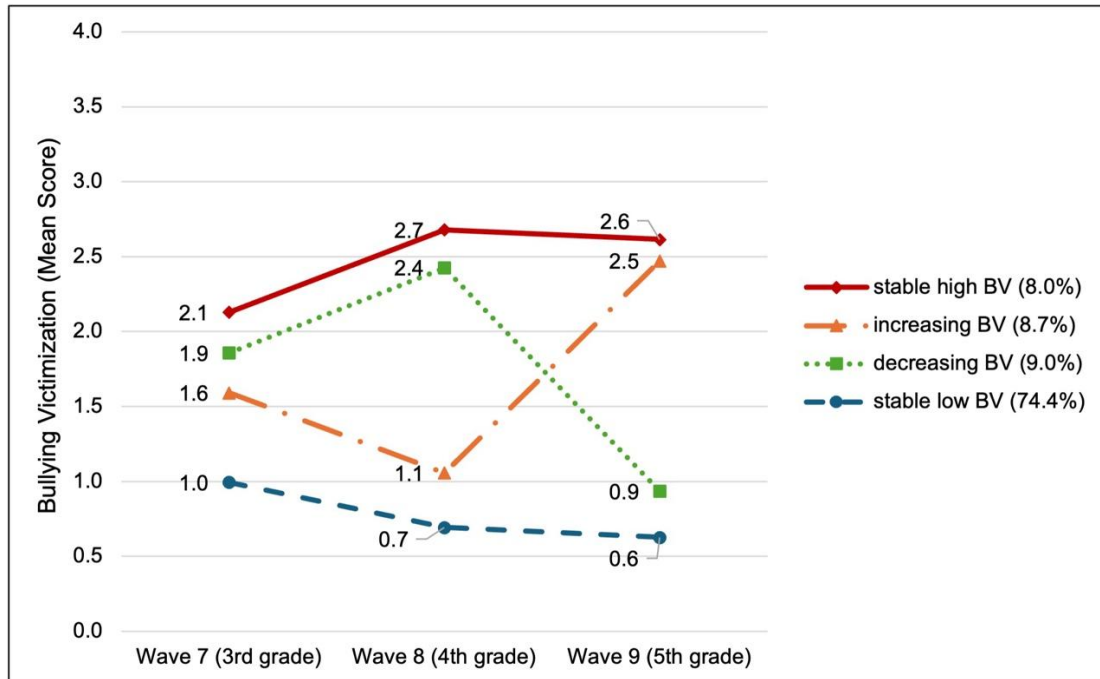
Figure 2-1 *Plot of Information Criterion Values*



Note: BIC (Bayesian information criterion). ssBIC (sample-size adjusted BIC).

Figure 2-2 presents the four-profile solution, illustrating trajectories of bullying victimization (BV) based on mean scores at each wave. Profile 1 (8.0% of students) was characterized by consistently high BV and labeled the *stable high BV trajectory*. Profile 2 (8.7%) showed an upward trend in BV and was labeled the *increasing BV trajectory*. Profile 3 (9.0%) showed a downward trend in BV and was labeled the *decreasing BV trajectory*. Profile 4 (74.4%) was characterized by consistently low BV and labeled the *stable low BV trajectory*.

Figure 2-2 Four-Profile Solution: Trajectories of Bullying Victimization



Note: BV (bullying victimization).

Impact of Disability and SWPBIS on Bullying Victimization Trajectory Membership

Table 2-4 presents the effects of students' disability status and school's SWPBIS implementation on the membership in bullying victimization (BV) trajectory profiles, holding the effects of other student- and school-level factors constant. Specifically, Profile 4 (stable low BV trajectory) served as the reference group (i.e., as a baseline for comparison) to estimate the effects of these predictors on the adjusted odds of belonging to each of the other three trajectory profiles (Profiles 1, 2, and 3) compared to this reference profile.

Compared to nondisabled students, the estimates suggest that disabled students had higher adjusted odds of following the stable high BV trajectory (odds ratio estimate [OR] = 1.711, $p < .01$), the increasing BV trajectory (OR = 2.187, $p < .001$), and the decreasing BV trajectory (OR = 1.865, $p < .001$). In other words, the odds were between 70% and 120% greater for disabled students than for nondisabled peers to experience persistently high or changing patterns of BV during the late elementary school years, rather than remaining in the stable low BV group. Although students' likelihood of following different BV trajectories differed significantly by their disability status, schools' implementation of SWPBIS was not found to have significant effects. Specifically, students in SWPBIS schools were estimated to have lower

adjusted odds of following the stable high BV trajectory ($OR = .999, p = .992$) and the increasing BV trajectory ($OR = .899, p = .413$) compared to those in non-SWPBIS schools, but these differences were not statistically significant. For the decreasing BV trajectory, students in SWPBIS schools were estimated to have higher adjusted odds ($OR = 1.171, p = .229$) than those in non-SWPBIS schools, but again the difference was not statistically significant. As a sensitivity analysis, this study also examined the effects of high-quality SWPBIS implementation (i.e., SWPBIS implementation with a school staff providing ongoing training or supports to classroom teachers in delivering effective behavioral supports) on students' likelihood of following different BV trajectories. These analyses also indicated non-significant effects of high-quality SWPBIS implementation on students' trajectory membership (results not shown in the table).

Lastly, this study also examined whether the impact of SWPBIS implementation on BV trajectory membership varied by students' disability status by including the interaction term of disability status and SWPBIS implementation as an additional predictor in the model. Results (not shown in the table) indicated non-significant interaction effects, suggesting that SWPBIS implementation did not influence disabled and nondisabled students' likelihood of following distinct BV trajectories differentially. Analysis using the high-quality SWPBIS implementation variable also yielded non-significant interaction effects (results not shown in the table).

Although not the primary aim of this study, results also indicated significant effects of several covariates on BV trajectory membership. Regarding the student-level factors, first, household poverty (both household income below the poverty threshold and household income at or above 100% but below 200%) was associated with the membership in most BV trajectories. In other words, students from lower-income households, compared to those with household income at or above 200% of the poverty threshold, were estimated to be more likely to experience persistently high or changing patterns of BV during the late elementary school years rather than remain in the stable low BV trajectory. Second, compared to white students, Black students were estimated to be more likely to follow the stable high BV trajectory ($OR = 1.540, p < .05$), whereas Hispanic ($OR = .490, p < .001$) and Asian students ($OR = .419, p < .01$) were estimated to be less likely to do so. Hispanic and Asian students also had lower estimated adjusted odds of following the increasing BV trajectory than white students (Hispanic: $OR = .699, p < .05$; Asian: $OR = .623, p < .05$). Third, female students had lower estimated adjusted odds of following the increasing BV trajectory compared to male students ($OR = .751, p < .01$).

Moving onto school-level factors, school-level poverty was significantly associated with membership in all three BV trajectories. Specifically, students attending schools with a higher proportion of students receiving free or reduced-price meals (FRPM) were estimated to be more likely to follow the stable high BV trajectory ($OR = 1.271, p < .001$), the increasing BV trajectory ($OR = 1.231, p < .001$), and the decreasing BV trajectory ($OR = 1.281, p < .001$). In addition, two other school-level factors were significantly associated with the membership in the decreasing BV trajectory. Students attending schools located in town or rural areas (compared to those in cities) were estimated to be more likely to follow the decreasing BV trajectory ($OR = 1.314, p < .05$), and students attending schools with higher levels of school problems more likely to follow the decreasing BV trajectory ($OR = 1.265, p < .05$). Finally, school size mattered for the stable high BV trajectory; students attending smaller schools (i.e., schools with fewer enrolled students) were estimated to be less likely to follow the stable high BV trajectory ($OR = .875, p < .01$).

Table 2-4 Effects of Student- and School-Level Factors on BV Trajectory Profile Membership

	Profile 1: Stable high BV trajectory		Profile 2: Increasing BV trajectory		Profile 3: Decreasing BV trajectory	
	logit	OR	logit	OR	logit	OR
Student-Level Factors						
Gender						
<i>(Reference group: Male)</i>						
Female	-0.017	0.983	-0.286**	0.751	-0.008	0.992
Ethnoracial Identity						
<i>(Ref.: White, non-Hispanic)</i>						
Hispanic	-0.714***	0.490	-0.358*	0.699	-0.134	0.874
Black (non-Hispanic)	0.431*	1.540	0.138	1.148	0.285	1.330
Asian (non-Hispanic)	-0.871**	0.419	-0.472*	0.623	-0.132	0.877
Others (non-Hispanic)	-0.360	0.698	0.070	1.073	0.193	1.213
Household Poverty						
<i>(Ref.: At or above 200%)</i>						
Below the threshold	0.486**	1.626	0.477**	1.611	0.463**	1.588
At or above 100% and below 200%	0.567***	1.764	0.574***	1.775	0.186	1.205
Disability Status						
<i>(Ref.: Nondisabled)</i>						
Disabled	0.537**	1.711	0.783***	2.187	0.623***	1.865
School-Level Factors						
School Location <i>(Ref.: City)</i>						
Suburb	-0.265	0.767	0.159	1.172	0.026	1.026
Town or rural	0.130	1.139	0.281	1.324	0.273*	1.314
School Size	-0.134**	0.875	-0.058	0.944	-0.099	0.906
School Poverty	0.240***	1.271	0.208***	1.231	0.248***	1.281
School-Level Problem Behavior	-0.044	0.957	0.074	1.077	0.235*	1.265
SWPBIS Implementation	-0.001	0.999	-0.107	0.899	0.158	1.171

Notes: 1. BV (bullying victimization). 2. Profile 4 [low stable BV trajectory] served as the reference group. 3. logit = log odds, OR = odds ratio. 4. For all student- and school-level covariates, the majority category for each covariate (e.g., male, non-Hispanic White) served as a reference group. 5. *p < .05, **p < .01, ***p < .001.

Discussion

Drawing on longitudinal data from a nationally representative cohort of U.S. students, this study identified distinct trajectories of bullying victimization during the late elementary school years (RQ1), examined whether students' disability status and schools' SWPBIS implementation influenced students' likelihood of following different trajectories (RQ2), and tested whether the impact of SWPBIS implementation varied by students' disability status (RQ3). Regarding RQ1, the current study found four distinct victimization trajectories—stable high, increasing, decreasing, and stable low—characterized by different levels of victimization across three waves, when most students were transitioning from grade 3 to grade 5. Consistent with previous studies of bullying victimization trajectories in late elementary school (Geoffroy et al., 2018; Wei et al., 2023), the majority of students (74.4%) experienced consistently low levels of bullying victimization. Still, about one-quarter of students followed persistently high (8.0%)

or changing patterns—either increasing (8.7%) or decreasing (9.0%), highlighting the heterogeneity of bullying victimization experiences during this developmental stage.

Regarding RQ2, this study found that disabled students had significantly higher risk of following any bullying victimization trajectories other than the low stable one, compared to their nondisabled peers. Specifically, disabled students' risk was highest for the increasing victimization trajectory (the estimated odds were about 2.2 times as great), followed by the stable high trajectory (about 1.7 times as great) and the decreasing trajectory (about 1.9 times as great). Although it is difficult to directly compare this finding with prior research—since disability status has rarely been considered in trajectory-based studies of bullying victimization—it aligns with the few existing longitudinal studies showing that disabled students, on average, face heightened risk of being bullied during the late elementary school years (Monachino et al., 2021; Rose & Gage, 2017). The present finding extends the literature by demonstrating that such disparities exist not only in overall risk but also in the likelihood of following different bullying victimization trajectories across the late elementary school years. Particularly, it is concerning that disabled students were disproportionately represented in the stable high and increasing victimization trajectories, reflecting chronic or escalating exposure to bullying. Future research should examine the mechanisms that shape disabled students' placement into different victimization trajectories, including individual factors (e.g., disability type, behavioral characteristics) and contextual factors (e.g., peer interactions, teacher practices, educational placement). A deeper understanding of these mechanisms would help inform anti-bullying strategies that move beyond addressing disabled students' general risk and instead account for their diverse victimization experiences.

Compared to the significant role of disability status in shaping students' membership in different victimization trajectories, this study found no statistically significant effects of SWPBIS implementation. One caveat is that these null findings may reflect data limitations. Because the dataset lacked detailed information on implementation at each school (e.g., duration, fidelity, level of school leadership involvement), schools likely varied in their implementation quality, which could have attenuated the effects of SWPBIS (Pas & Bradshaw, 2012). Although this study tested the effects of high-quality SWPBIS implementation by incorporating information on whether schools had staff dedicated to supporting teachers in delivering effective behavioral supports, this measure may not fully capture implementation quality. Accordingly, future studies should collect richer implementation data to more accurately assess the impact of SWPBIS.

Nevertheless, prior literature also offers a substantive explanation for the non-significant impact of SWPBIS found in this study, suggesting that SWPBIS alone may not be sufficient to address bullying—particularly when compared to its more consistent impact on reducing student behaviors that result in exclusionary discipline (for a review and meta-analysis, refer to Lee & Gage, 2020). Gage et al. (2019) argued that, unlike student behaviors that typically lead to office discipline referrals and suspensions (e.g., noncompliance, disruption), bullying is a more complex phenomenon embedded in peer dynamics, which may not be fully addressed by a general behavior support framework like SWPBIS. In other words, while SWPBIS may help establish schoolwide behavioral expectations and reinforce appropriate student behaviors, it may not directly address the distinctive features of bullying, such as the power relations between peers and its manifestations in both overt and covert forms (Gladden et al., 2014; Olweus, 1993).

Accordingly, several scholars have offered suggestions to strengthen SWPBIS as a more effective anti-bullying framework. For example, Bradshaw (2013) called for the explicit integration of anti-bullying strategies into SWPBIS, such as collecting systematic data on

bullying, conducting adult supervision in bullying “hot spots,” providing all students with lessons on building social-emotional competence and appropriate responses to bullying, and identifying and offering more intensive supports for students at risk for or already involved in bullying. Similarly, Ross and Horner (2009, 2014) developed the Bully Prevention in Positive Behavior Support program, which supplements SWPBIS with simple and specific bullying prevention strategies (e.g., providing students with explicit instruction of a three-step response—stop/walk/talk, training staff to consistently support students and respond to student reports). Further research is needed to assess whether differences in the extent to which SWPBIS incorporates anti-bullying components help explain its mixed effects in reducing bullying-related outcomes, which would provide clearer guidance for practice.

Lastly, regarding RQ3, the current study found that the overall null impact of SWPBIS on students’ membership in bullying victimization trajectories did not differ by disability status. While previous studies have likewise reported no significant disability-related variation in the impact of SWPBIS (Gage et al., 2019; Waasdorp et al., 2012), the heterogeneity in methodological approaches—including whether disability was measured at the individual level versus aggregated as a school-level proportion, and whether outcomes focused on bullying perpetration versus victimization—makes it difficult to draw firm conclusions. These inconsistencies highlight the need for more research that disentangles the impact of SWPBIS with careful attention to disability to ensure that SWPBIS functions as an effective framework for all students, including those with disabilities. Relatedly, a multidisciplinary team of scholars recently developed an online professional development program for educators to help them design and implement effective anti-bullying strategies embedded within a multi-tiered framework and explicitly inclusive of disabled students (Espelage, Forber-Pratt, et al., 2024; Robinson et al., 2023). For example, the program provided information on disability diagnostic criteria and related risk and protective factors, and trained both general and special education teachers on ways to center disabled students at every tier of bullying prevention and intervention. Such efforts exemplify how supplementing schoolwide multi-tiered frameworks like SWPBIS with bullying- and disability-focused components can help actualize its promise of preventing and reducing bullying for all students, particularly those with unique vulnerabilities due to disability.

Limitations and Strengths

Several limitations of the current study should be noted. First, as mentioned earlier, the ECLS-K:2011 did not collect information on how SWPBIS was implemented at each school. Constructing other proxy indicators (e.g., duration of SWPBIS implementation) was also not feasible due to students’ mobility across schools and missing data in earlier waves. Although using the Wave 7 measure of SWPBIS implementation helped establish temporal ordering in predicting students’ membership in bullying victimization trajectories across Waves 7 through 9, future research evaluating the impact of SWPBIS would benefit from incorporating more detailed implementation data. Second, because the dataset used in this study did not have detailed disability-related information (e.g., disability type, educational placement), the current study examined differences in students’ likelihood of following distinct victimization trajectories based on a binary measure of disability status. Future studies should build on these findings by incorporating more nuanced measures of disability characteristics to understand the heterogeneity within disabled students affecting their risk for being bullied.

Despite these limitations, this study makes several unique contributions. It adds empirical

evidence on the diversity of bullying victimization experiences during the critical developmental period of the late elementary school years. Particularly, it is the first study to use national longitudinal data on U.S. students to identify distinct bullying victimization trajectories during the late elementary school years, showing that roughly one-fourth of students experienced chronic or changing levels of victimization. In addition, this trajectory-based approach allowed for examining the role of two important factors—students’ disability status and schools’ SWPBIS implementation—in shaping students’ likelihood of following different bullying victimization trajectories. The findings demonstrate that disabled students had higher risks than nondisabled students across multiple victimization trajectories, underscoring the persistence of disability-based disparities not only in overall risk but also in the diverse ways victimization unfolds over time. Meanwhile, the absence of significant effects of SWPBIS—overall and by disability status—suggests the need to integrate explicit bullying prevention and intervention components into the framework, with greater attention to disability inclusion. Taken together, these findings point towards critical insights and directions for future research and practice to ensure that SWPBIS fulfills its promise as an effective and equitable anti-bullying framework for all students.

Chapter 3

Joint Development of Bullying Victimization and Perpetration among Disabled and Nondisabled Students in Late Elementary School Years

Summary

Although understanding the stability and reciprocity of bullying victimization and perpetration is critical for developing effective anti-bullying strategies, few studies have examined these longitudinal associations in ways that distinguish within-person change from between-person differences, which provides a more precise understanding of the co-development of bullying victimization and perpetration that occur at the within-student level. Using a random-intercept cross-lagged panel model, this study analyzed data from 9,133 students to investigate the joint development of victimization and perpetration during the late elementary school years and potential differences by students' disability status, given disabled students' overrepresentation in bullying dynamics. Results showed that within-student stability existed for both victimization and perpetration but there were no statistically significant reciprocal effects between these two behaviors. These overall patterns were similar across disabled and nondisabled students, but disabled students consistently reported higher levels of both behaviors than their nondisabled peers. Findings suggest that role transitions in bullying dynamics are relatively rare and that disabled students are consistently more vulnerable to bullying involvement, which highlights the importance of addressing power imbalances among students—with attention to the role of disability in shaping peer power dynamics—to strengthen school-based bullying prevention and intervention efforts.

Introduction

Youth bullying refers to a form of aggression that occurs in the context of a power imbalance between peers, which is often repeated and encompasses various types of behaviors such as physical bullying (e.g., hitting, tripping), verbal bullying (e.g., teasing, threatening), and relational bullying (e.g., isolating, rumor-spreading; Gladden et al., 2014; Olweus, 1993). A large body of research has shown that involvement in bullying in any capacity is associated with a variety of negative outcomes, including internalizing symptoms among victims (e.g., depression, anxiety; Schoeler et al., 2018), later offending among bullies (Ttofi et al., 2011), and other deleterious consequences experienced by both groups, such as substance use (Moore et al., 2017; Vrijen et al., 2021), deliberate self-harm (Heerde & Hemphill, 2018), and suicidal ideation and behaviors (Holt et al., 2015). In addition, many studies have reported that students who both bully others and are also bullied (i.e., bully-victims) experience more severe psychosocial and health consequences than those who engage in a single form of bullying involvement (National Academies of Sciences, Engineering, and Medicine, 2016a).

Considering these adverse effects of bullying involvement in any role, it is critical to examine the joint developmental process of bullying victimization and perpetration to better understand how these behaviors evolve over time. Specifically, once students experience victimization or engage in perpetration, do these behaviors tend to remain stable over time? Does

experiencing victimization increase the likelihood of later perpetration, and vice versa? Understanding the stability and reciprocity of victimization and perpetration can provide valuable insights into the mechanisms that sustain bullying involvement and can inform more timely and effective prevention and intervention strategies. Furthermore, examining these questions is especially important for students in the late elementary school years, as this period is marked by various developmental changes—such as increased social-cognitive awareness and skills, greater desire for peer acceptance and popularity, and less direct monitoring from adults—that may heighten students' vulnerability to bullying involvement (Chen et al., 2015; Ettekal & Ladd, 2017). Nevertheless, empirical evidence on the longitudinal dynamics of victimization and perpetration during this period remains limited (Sentse et al., 2015; Zhou et al., 2022), underscoring the need for further research focused on this critical developmental stage.

Moreover, the need to understand the joint developmental process of victimization and perpetration is even more pressing for disabled students, who are disproportionately involved in bullying dynamics. Cross-sectional studies have consistently reported that disabled students are more likely than their nondisabled peers to experience victimization (Bear et al., 2015; Farmer et al., 2012; Lebrun-Harris et al., 2019; Malecki et al., 2020; Rose et al., 2009; Rose, Simpson, et al., 2015; Turner et al., 2011; Van Cleave & Davis, 2006) or to be identified as bully-victims (Farmer et al., 2012; Rose, Simpson, et al., 2015; Van Cleave & Davis, 2006), yet few longitudinal studies have examined the developmental interplay between bullying victimization and perpetration among disabled students. Understanding whether and how the joint developmental process differs between disabled and nondisabled students can inform the design of more tailored and equitable anti-bullying strategies and promote safer, more inclusive school environments for all students.

To examine the longitudinal developmental process of bullying victimization and perpetration, several studies have employed the cross-lagged panel model (CLPM), which allows for examining both the stability and reciprocity of these behaviors over time (Chu et al., 2018; Cooley et al., 2018; Jose et al., 2012; Pabian & Vandebosch, 2016; You & Yoon, 2016). However, a key limitation of the CLPM is that it conflates between-person differences and within-person processes, which can lead to misleading conclusions about the longitudinal associations between victimization and perpetration (Hamaker et al., 2015). For example, a lagged effect of victimization on later perpetration identified through CLPM may actually reflect stable between-student differences (e.g., students who are consistently involved as bully-victims vs. those who are consistently not involved), rather than true within-student changes in perpetration that follow changes in victimization. The random-intercept cross-lagged panel model (RI-CLPM) is a recent extension of CLPM that addresses this limitation by separating between-person variance from within-person variance, thereby providing a more precise understanding of the dynamic longitudinal associations between bullying victimization and perpetration that occur at the within-student level (Hamaker et al., 2015). Utilizing this recently developed method, the present study aims to examine the joint development of bullying victimization and perpetration across late elementary school years, as well as the potential differences in this process between disabled and nondisabled students.

Stability and Reciprocity of Bullying Victimization and Perpetration

The joint developmental process of bullying victimization and perpetration can be understood through its two key characteristics: stability and reciprocity. First, experiences of bullying victimization (or engagement in perpetration) may demonstrate stability over time. Such

stability can take two forms: (a) stability in an individual's rank order within the entire sample over time (i.e., between-person, trait-like stability), and (b) stability within an individual from one time point to the next (i.e., within-person, moment-to-moment stability; Mulder & Hamaker, 2021). Second, bullying victimization and perpetration may demonstrate reciprocity; experiencing bullying victimization may increase the likelihood of later perpetration, and vice versa. In other words, reciprocity refers to the bidirectional spillover effects between victimization and perpetration from one time point to the next (Mulder & Hamaker, 2021).

Several theoretical perspectives can explain the stability and reciprocity of bullying victimization and perpetration, which together constitute the mechanisms sustaining students' involvement in bullying. First, social-ecological theory suggests that bullying is promoted, maintained, and inhibited by various factors within one's social-ecological systems (e.g., individual, interpersonal, organizational; Swearer & Hymel, 2015; Thornberg, 2015). This framework is particularly useful for understanding between-student differences in bullying involvement. For example, a meta-analysis identified several predictors of bullying involvement across various levels (e.g., social-emotional competence, peer status and influence, school climate) and found that some of them uniquely predicted specific behaviors (victimization or perpetration), while others were shared risk factors for both behaviors (Cook et al., 2010). These findings suggest that students with certain individual traits or situated in particular contexts are more likely than their peers to be involved in bullying, and when such traits or contexts persist over time, their involvement is more likely to remain stable.

Next, stability in bullying involvement within individuals over time can be explained by the continuity model, which highlights how behavioral patterns are sustained through two continuity-promoting processes—one operating through the continuity in social environments and the other through the continuity in individuals' interactional styles (Caspi et al., 1989; Scholte et al., 2007). For instance, students' experiences of victimization or perpetration may lead them to affiliate with peers who share similar characteristics, situating them in social environments that further sustain and reproduce their behaviors over time. At the same time, students' involvement in bullying may limit opportunities for positive peer interactions, which may constrain the development of social-emotional competence and lead them to develop or maintain maladaptive interactional styles (e.g., aggressive, avoidant) that reinforce chronic patterns of victimization and perpetration.

Other theoretical perspectives highlight how victimization and perpetration may exert reciprocal influences over time. Regarding the influence of victimization on perpetration, general strain theory posits that experiencing victimization constitutes an important source of strain that elicits negative emotions (e.g., frustration, anger), which may in turn lead to aggressive behaviors—including bullying perpetration (Barbieri et al., 2019; You & Yoon, 2016). Regarding the opposite direction (i.e., the pathway from perpetration to victimization), routine activities/lifestyles theory suggests that various risk factors in perpetrators' everyday lives, such as frequent interactions with delinquent peers and time spent in unsupervised environments, may increase their likelihood of subsequent victimization (Park & Cho, 2021; Schreck & Fisher, 2004). At the same time, some scholars have also argued that such transitional effects (e.g., victimization-to-perpetration or perpetration-to-victimization) may be relatively uncommon, given that the power imbalances underlying bullying dynamics tend to be stable and difficult to overturn (Camacho et al., 2023; Chu et al., 2018).

To date, studies using RI-CLPM have shown that stable between-student differences exist in both experiencing victimization and engaging in perpetration, and these stable tendencies are

positively associated with each other, suggesting the presence of stable bully-victims (Camacho et al., 2023; Zhou et al., 2022). Moreover, empirical evidence—based on either CLPM or RI-CLPM—supports the stability of victimization and perpetration over time (Camacho et al., 2023; Chu et al., 2018; Pabian & Vandebosch, 2016; Sentse et al., 2015; You & Yoon, 2016; Zhou et al., 2022). In contrast, findings regarding the reciprocal relationships between these two behaviors are mixed. Among studies employing CLPM, one study found no significant effects of victimization on later perpetration or vice versa (Chu et al., 2018), whereas others identified only one significant pathway—either from victimization to perpetration (Jose et al., 2012; Pabian & Vandebosch, 2016) or from perpetration to victimization (You & Yoon, 2016). Given the methodological limitations of CLPM outlined above, it is informative to examine findings from studies that have employed RI-CLPM in detail, which provides a more accurate account of within-person processes over time. Camacho et al. (2023), using four waves of data from Spanish adolescents ($N = 2,835$, mean age = 13.10 at Wave 1), found no significant bidirectional relationships between bullying victimization and perpetration across all waves. Similarly, Zhou et al. (2022) reported mostly nonsignificant bidirectional paths across five waves of data from Chinese students ($N = 3,720$, mean age = 9.95 at Wave 1), with only one significant path in each direction. Taken together, findings from these two studies employing RI-CLPM suggest that while both bullying victimization and perpetration demonstrate stability over time, reciprocal influences between the two behaviors are limited. Nonetheless, further research is warranted given the small number of longitudinal studies and their variability in various factors, including developmental periods and national contexts.

Bullying Involvement among Students with Disabilities

Disabled students are a heterogeneous population encompassing individuals with a wide range of disabilities (e.g., behavioral, intellectual, physical, sensory, and social-emotional). Nevertheless, a commonality among them is that they are more likely than their nondisabled peers to experience “misfitting” (Garland-Thomson, 2011) or “mismatches” (Shogren, 2013) within school contexts—such as displaying behaviors that are different from peer norms, navigating inaccessible school facilities, or encountering unaccommodating instructional practices. From the perspective of stigma theory, these experiences of misfit or mismatch may render disability as a stigmatized attribute in school settings, increasing disabled students’ vulnerability to victimization due to unequal power relations between disabled and nondisabled students (Earnshaw et al., 2018). Some disabled students may also engage in perpetration, and scholars have argued that such behaviors often occur as reactions to victimization or may arise from difficulties associated with some specific disability-related characteristics (e.g., challenges in self-control or social information processing; Rose et al., 2011).

So far, only a few empirical studies have used longitudinal data to examine disabled students’ bullying involvement, providing useful insights. Using path analysis with three waves of data from U.S. disabled students in the Special Education Elementary Longitudinal Study ($N = 4,155$; ages 6–12 at Wave 1), Blake et al. (2016) found that victimization was stable across all waves, suggesting a risk of chronic victimization in this population. Using growth modeling, Rose and Gage (2017) analyzed three waves of data from 6,531 U.S. students (including 16% disabled students, grades 3–12 at Wave 1) to estimate separate trajectories for bullying victimization and perpetration. They found that disabled students consistently experienced higher levels of both victimization and perpetration over time than nondisabled students. In addition, disabled students’ trajectories of victimization and perpetration mirrored each other; thus, the

authors suggest that this pattern may reflect a reciprocal relationship between victimization and perpetration in this population. Lastly, Chen et al., (2015) analyzed three waves of data from 1,861 U.S. students (including 8% of students with disabilities) across grades 5 and 6 using multilevel logistic regression. They classified the longitudinal patterns of bullying involvement into three types—stable involved, stable noninvolved, and changing—and found that disabled students were more likely to be stably involved than their nondisabled peers. By the end of grade 6, disabled students were also more likely to be victims and bully-victims, but not bullies, compared to their nondisabled peers. Taken together, these findings suggest that disabled students tend to experience more stable and elevated involvement in bullying over time than their nondisabled counterparts, particularly as victims and bully-victims. However, none of these studies directly examined the dynamics in the co-development of bullying victimization and perpetration, highlighting the need for empirical research that employs rigorous and appropriate methods to understand this longitudinal process.

The Current Study

In summary, understanding the joint developmental process of bullying victimization and perpetration is critical for developing effective anti-bullying strategies. However, most prior research has relied on statistical methods that conflate between-student differences with within-student fluctuations, which may potentially lead to biased conclusions about longitudinal dynamics. By employing RI-CLPM, the current study aims to address this gap and provide a more precise understanding of how these behaviors co-develop over time at the within-student level. Furthermore, given the paucity of longitudinal research on disabled students—despite their documented overrepresentation in bullying dynamics—this study examines whether and how the longitudinal associations between victimization and perpetration differ between disabled and nondisabled students, with the goal of informing the development of more equitable anti-bullying strategies that explicitly consider disability. Research questions (RQs) are as follows:

RQ1. How do bullying victimization and perpetration co-develop across the late elementary school years?

RQ2. Does this joint development differ by students' disability status? If so, how?

Methods

Data and Participants

This study utilized the public-use data from the Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011). ECLS-K:2011 followed a nationally representative cohort of 18,174 U.S. kindergartners across nine waves, until the end of the 2015–16 school year (Tourangeau et al., 2019). This study primarily used data from the last three waves (Wave 7: Spring 2014, Wave 8: Spring 2015, and Wave 9: Spring 2016), which correspond to the late elementary school years (grades 3 to 5) for most children in the ECLS-K:2011 cohort. Because this study aimed to capture the natural developmental dynamics of bullying victimization and perpetration, participants were restricted to students who attended the same school from Wave 7 to Wave 9 without experiencing school transitions, resulting in 9,786 students nested within 2,089 schools. A total of 653 students (6.6%) who had missing information on bullying victimization and perpetration at all three waves were excluded, yielding a final analytic sample of 9,133 students nested within 1,885 schools (50.7% boys, 49.3% girls; 90.9% nondisabled, 9.1% disabled; mean age = 9.08 years at Wave 7). Missing data (e.g., partial

observations of bullying victimization or perpetration across waves) were handled using Full Information Maximum Likelihood (FIML) estimation, which performs better than traditional approaches such as listwise or pairwise deletion (Enders & Bandalos, 2001).

Measures

Bullying Victimization: Students reported how often they experienced four types of bullying victimization—physical, verbal, direct relational, and indirect relational—during the school year, using four items adapted from the Bullying, Fighting, and Victimization Scale (Espelage & Holt, 2001). Each item was rated on a five-point Likert scale: never (coded as 0 in this study), rarely (1), sometimes (2), often (3), and very often (4). For each wave, a mean score was calculated when at least one item was completed, resulting in three continuous scores of bullying victimization.

Bullying Perpetration: Reading and language arts teachers reported how often each student engaged in four types of bullying perpetration—physical, verbal, direct relational, and indirect relational—during the school year, using four items adapted from the Bullying, Fighting, and Victimization Scale (Espelage & Holt, 2001). Each item was rated on a five-point Likert scale: never (coded as 0 in this study), rarely (1), sometimes (2), often (3), and very often (4). For each wave, a mean score was calculated when at least one item was completed, resulting in three continuous scores of bullying perpetration.

Disability Status: Students were identified as disabled if they had an Individualized Education Program on school record at Wave 7 (coded as yes = 1 or no = 0).

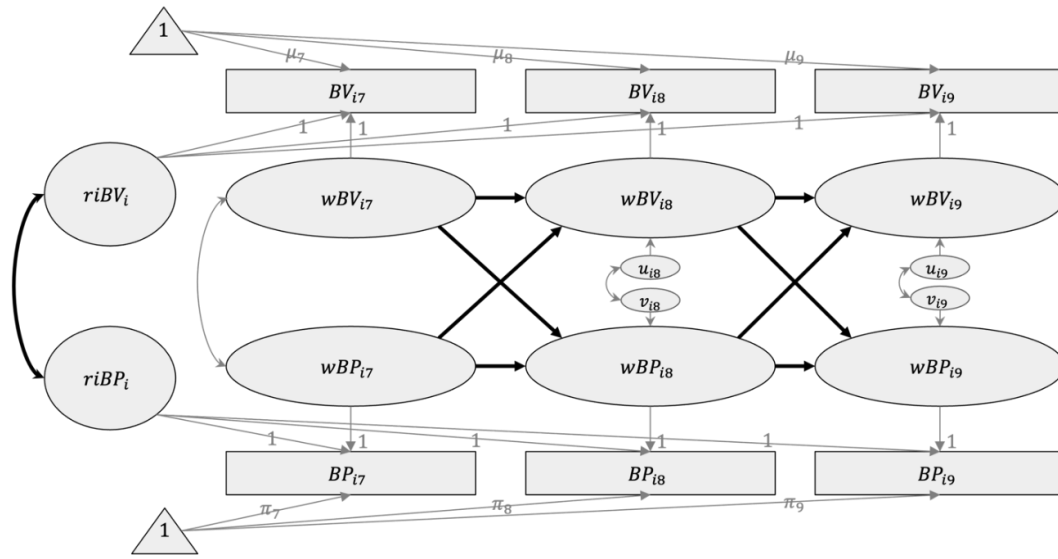
Analytic Approach

To examine how bullying victimization and perpetration unfold and co-develop over time, this study employed the random-intercept cross-lagged panel model (RI-CLPM), which distinguishes between-student differences from within-student associations to provide a more precise understanding of longitudinal dynamics at the within-student level (Hamaker et al., 2015; Mulder & Hamaker, 2021). As shown in Figure 3-1, RI-CLPM decomposes each observed score on victimization (BV_{it}) or perpetration (BP_{it}) for student i at Wave t (7, 8, 9) into three components: a grand mean, a random intercept, and a within-person factor.

The grand means for victimization (μ_t) and perpetration (π_t) represent the mean levels of each construct across all students at Wave t . Random intercepts and within-person factors are specified as latent variables measured by the observed variables. Two random intercepts—one for victimization ($riBV_i$) and the other for perpetration ($riBP_i$)—are defined by their corresponding three repeated measures, with factor loadings fixed to 1. Accordingly, the random intercepts capture each student's typical (i.e., trait-like) deviation from the grand means, representing stable individual differences. Six within-person factors—three for victimization (wBV_{it}) and three for perpetration (wBP_{it})—are also specified, each measured by its corresponding observed variable with measurement error variances fixed to 0 and factor loadings fixed to 1. Thus, the within-person factors represent students' fluctuations around their own typical levels. Overall, these relationships can be summarized by the following equations:

$$\begin{aligned} BV_{it} &= \mu_t + riBV_i + wBV_{it} \\ BP_{it} &= \pi_t + riBP_i + wBP_{it} \end{aligned}$$

Figure 3-1 Conceptual RI-CLPM of Bullying Victimization and Perpetration



Note: BV_{it} and BP_{it} represent the observed scores on bullying victimization (BV) and bullying perpetration (BP) for student i at Wave t (7, 8, 9). μ_t and π_t represent the grand means for each wave. $riBV_i$ and $riBP_i$ represent the random intercepts for BV and BP for each student. wBV_{it} and wBP_{it} represent the within-person factors. u_{it} and v_{it} represent residuals. Bold black lines indicate the three key model parameters: (1) correlation between random intercepts, (2) autoregressive effects, and (3) cross-lagged effects. Gray lines are not of primary interest and are omitted in subsequent figures for simplicity.

Based on this specification, the current study focused on three key model parameters estimated in the RI-CLPM. First, the correlation between the two random intercepts ($riBV_i$ & $riBP_i$) reflects the association between each student's overall tendencies to experience victimization and to engage in perpetration (i.e., one's typical level of victimization or perpetration), capturing the stable overlap between the two behaviors at the between-student level. Second, the autoregressive effects (e.g., the effect of wBV_{i7} on wBV_{i8}) reflect how experiencing higher or lower levels of victimization (or perpetration) at a given time, relative to one's typical level, affects later experiences of higher or lower levels of the same behavior relative to one's typical level. These effects capture the moment-to-moment stability of each behavior over time within the same individual. Third, the cross-lagged effects (e.g., the effect of wBV_{i7} on wBP_{i8}) reflect how experiencing higher or lower levels of one behavior at a given time, relative to one's typical level, influences later experiences of higher or lower levels of the other behavior relative to one's typical level. These effects capture the reciprocity between the two behaviors over time within the same individual. Together, these key parameters at the between-student and within-student levels provide a more comprehensive understanding of the co-development of bullying victimization and perpetration over time.

After estimating RI-CLPM with the full sample (RQ1), this study estimated a multiple-group RI-CLPM (Mulder & Hamaker, 2021) using students' disability status as a grouping variable to examine whether and how the longitudinal relationships between victimization and perpetration differed between disabled and nondisabled students (RQ2). To assess whether the multiple-group RI-CLPM (in which all model parameters were freely estimated across groups) provided a better fit to the data than the full-sample (single-group) RI-CLPM (in which all model

parameters were constrained to be equal across groups), a Satorra–Bentler scaled chi-square difference test was conducted. This test allows for comparing the chi-square values of two nested models estimated with robust standard errors (Satorra & Bentler, 2010), which was appropriate given the non-normality of bullying victimization and perpetration scores (refer to the descriptive analyses in the Results section below). When interpreting the Satorra–Bentler scaled chi-square difference test, a significant chi-square difference indicates that constraining parameters worsens model fit, suggesting that parameters differ significantly between groups. Conversely, a nonsignificant result indicates that the constraints do not worsen model fit, suggesting that the parameters can be considered statistically similar across two groups.

If a significant chi-square difference was detected when comparing the multiple-group RI-CLPM with the full-sample RI-CLPM, an additional Satorra–Bentler scaled chi-square difference test was conducted to identify which part of the model contributed to the group difference. In this study, the fully unconstrained multiple-group RI-CLPM (in which all parameters were freely estimated across groups) was compared with a partially constrained version in which three key model parameters—the correlation between random intercepts, autoregressive effects, and cross-lagged effects—were constrained to be equal across groups. When the Satorra–Bentler scaled chi-square difference test found a significant result, Wald tests were subsequently conducted to pinpoint which specific parameters (e.g., a particular autoregressive or cross-lagged effect) differed significantly between the two groups.

For all models—both the full-sample and multiple-group group RI-CLPMs—the clustering of students within schools was accounted for using cluster-robust standard errors, given the nested data structure (i.e., students within schools). Models were considered to exhibit good fit when the Comparative Fit Index (CFI) and Tucker-Lewis Index (TLI) were greater than .95, the Standardized Root Mean Square (SRMR) was less than .08, and the Root Mean Square Error of Approximation (RMSEA) was less than .06 (L. Hu & Bentler, 1999). The model chi-square (χ^2), which tests the exact-fit hypothesis (i.e., testing whether no discrepancies exist between the population covariance matrix and the one predicted by the model), was also reported but not used as a criterion for model evaluation as it is overly sensitive to sample size (Kline, 2011). All data preparation and the descriptive and bivariate analyses were performed in Stata version 19.0 (StataCorp, 2025). To address the research questions, Mplus version 8.9 was used to estimate the models while handling missing data using FIML (Muthén & Muthén, 1998–2017).

Results

Descriptive and Bivariate Analyses

Table 3-1 presents the descriptive statistics and Pearson’s bivariate correlations for bullying victimization and perpetration scores at Waves 7, 8, and 9. Overall, students’ mean levels of victimization were higher than their levels of perpetration across the three waves. The skewness and kurtosis values indicated that most variables were not severely non-normal (skewness < 2 and kurtosis < 7; Khine, 2013), with one variable showing a slightly elevated kurtosis value (7.20). Because visual inspection of histograms revealed deviations from normality, all RI-CLPMs were estimated using maximum likelihood with robust standard errors (MLR), which allows for statistical inference that is robust to violations of multivariate normality. The magnitude of correlations between victimization and perpetration scores was small (range: 0.23–0.30), while the magnitude of correlations was moderate between victimization scores (range: 0.45–0.57) and between perpetration scores (range: 0.45–0.48).

Table 3-1 Descriptive Statistics and Pearson's Bivariate Correlations among Variables

	1 BV at W7	2 BV at W8	3 BV at W9	4 BP at W7	5 BP at W8	6 BP at W9
1 BV at W7	-					
2 BV at W8	0.52	-				
3 BV at W9	0.45	0.57	-			
4 BP at W7	0.25	0.26	0.26	-		
5 BP at W8	0.24	0.27	0.25	0.48	-	
6 BP at W9	0.23	0.24	0.30	0.45	0.49	-
Mean	1.21	1.04	0.97	0.46	0.46	0.46
SD	0.94	0.91	0.91	0.68	0.69	0.70
Skewness	0.78	0.10	1.11	1.94	1.92	1.92
Kurtosis	3.05	3.52	3.78	7.20	6.91	6.74

Note: BV (bullying victimization), BP (bullying perpetration), W7 (Wave 7), W8 (Wave 8), Wave 9 (Wave 9). SD (standard deviation).

Full-Sample RI-CLPM

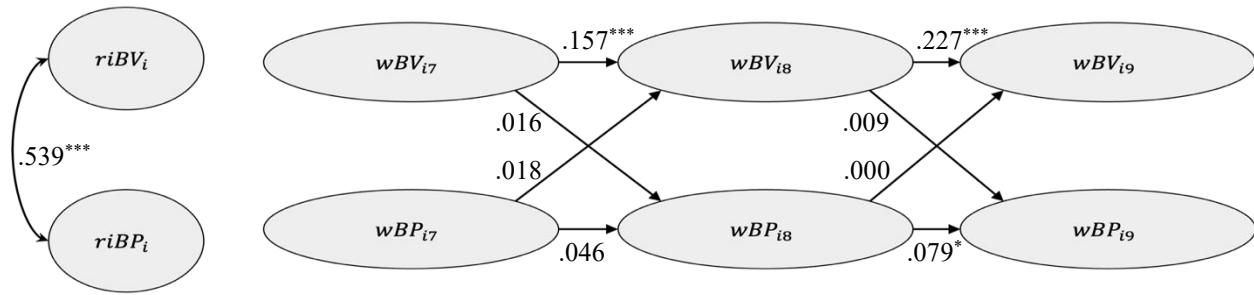
The full-sample RI-CLPM of bullying victimization and perpetration demonstrated excellent model fit, with $\chi^2(1) = 1.69$ ($p = .193$), CFI = 1.000, TLI = 0.999, RMSEA = 0.009, SRMR = 0.003. Table 3-2 (*Overall* column) presents the standardized estimates of the key model parameters, and Figure 3-2 provides a visual representation of the model.

Table 3-2 Standardized Estimates of Key Parameters: Full-Sample & Multiple-Group RI-CLPMs

	Full-Sample Overall	Multiple-Group Nondisabled	Multiple-Group Disabled
Between-level associations			
BV $\leftrightarrow$ BP	.539***	.537***	.523***
Within-level associations			
Autoregressive effects			
BV (W7) $\rightarrow$ BV (W8)	.157***	.163***	.142*
BV (W8) $\rightarrow$ BV (W9)	.227***	.240***	.157*
BP (W7) $\rightarrow$ BP (W8)	.046	.041	.086
BP (W8) $\rightarrow$ BP (W9)	.079*	.080*	.047
Cross-lagged effects			
BV (W7) $\rightarrow$ BP (W8)	.016	.015	.011
BV (W8) $\rightarrow$ BP (W9)	.009	-.004	.130+
BP (W7) $\rightarrow$ BV (W8)	.018	.012	.086
BP (W8) $\rightarrow$ BV (W9)	.000	-.004	.015

Note: BV (bullying victimization), BP (bullying perpetration), W7 (Wave 7), W8 (Wave 8), Wave 9 (Wave 9). + $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$.

Figure 3-2 Standardized Estimates from Full-Sample RI-CLPM



Note: * $p < .05$, ** $p < .01$, *** $p < .001$.

First, as a preliminary check, the random intercepts of victimization and perpetration showed variances significantly greater than zero (0.371 and 0.219, $p < .001$; not shown in the table), indicating the presence of stable between-student differences in both constructs. The correlation between the random intercepts of victimization and perpetration was significant and moderate in magnitude ($\hat{\rho} = .539$, $p < .001$), suggesting that students who experienced higher levels of victimization across the three waves also engaged in higher levels of perpetration during the same period, compared with those who experienced lower levels of victimization.

At the within-student level, the coefficients for the autoregressive paths for victimization were small but significant from Wave 7 to Wave 8 ($\hat{\beta} = .157$, $p < .001$) and from Wave 8 to Wave 9 ($\hat{\beta} = .227$, $p < .001$), suggesting modest stability. In other words, when a student experienced higher-than-usual levels of victimization at one time point (i.e., elevated levels relative to their own typical level), the student was more likely to experience higher-than-usual victimization at the next time point as well. For perpetration, the autoregressive path was not significant from Wave 7 to Wave 8 ($\hat{\beta} = .046$, $p > .05$) but became small and significant from Wave 8 to Wave 9 ($\hat{\beta} = .079$, $p < .05$), indicating that perpetration exhibited stability at later waves. In contrast, cross-lagged effects were not significant in either direction across all waves, suggesting that experiencing higher-than-usual levels of victimization did not lead to higher-than-usual levels of perpetration a year later (Wave 7→8: $\hat{\beta} = .016$, $p > .05$; Wave 8→9: $\hat{\beta} = .009$, $p > .05$), nor did higher-than-usual perpetration predict higher-than-usual victimization (Wave 7→8: $\hat{\beta} = .018$, $p > .05$; Wave 8→9: $0 < \hat{\beta} < .001$, $p > .05$).

Multiple-Group RI-CLPM

The multiple-group RI-CLPM demonstrated excellent model fit, with $\chi^2(2) = 2.28$ ($p = .320$), CFI = 1.000, TLI = 1.000, RMSEA = 0.006, SRMR = 0.003. To compare the model fit between the multiple-group RI-CLPM and the full-sample (single-group) RI-CLPM, the chi-square for the full-sample RI-CLPM was re-estimated using the multiple-group RI-CLPM specification with equality constraints on all parameters, yielding $\chi^2(28) = 247.358$ ($p < .001$). Results from the Satorra–Bentler scaled chi-square difference test indicated that constraining all parameters across the two groups—rather than allowing them to vary across the two groups—significantly worsened the model fit ($\Delta\chi^2_{S-B}(26) = 243.13$, $p < .001$), suggesting meaningful group differences between disabled and nondisabled students.

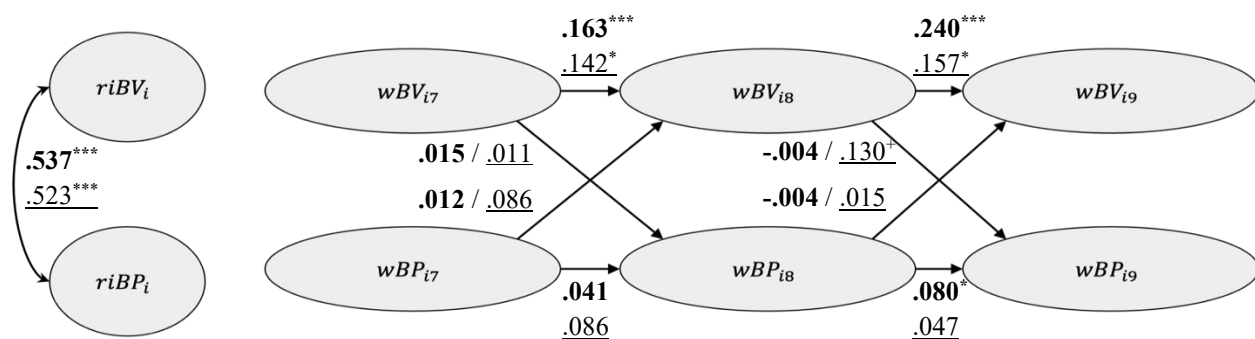
To examine whether the three key model parameters—the correlation between random intercepts, autoregressive effects, and cross-lagged effects—contributed to this group difference, the fully unconstrained multiple-group RI-CLPM was compared with a partially constrained

version in which all three key parameters were constrained to be equal across groups, yielding $\chi^2(11) = 15.977$ ($p = .142$). Results from the Satorra–Bentler scaled chi-square difference test showed a non-significant difference ($\Delta\chi^2_{S-B}(9) = 13.68$, $p = .134$), suggesting that constraining these parameters did not significantly worsen model fit and that these parameters were statistically comparable between the two groups. Thus, a supplementary analysis was conducted to assess whether differences in grand means contributed to the overall group difference. Specifically, the fully unconstrained multiple-group RI-CLPM was compared with a model that constrained the grand means of bullying victimization and perpetration at each wave to be equal across groups, yielding $\chi^2(8) = 84.251$ ($p < .001$). Results from the Satorra–Bentler scaled chi-square difference test indicated significant group differences in the grand means ($\Delta\chi^2_{S-B}(6) = 91.28$, $p < .001$), and subsequent Wald tests showed that disabled students had significantly higher mean levels of both victimization and perpetration at all waves than nondisabled students.

Taken together, these results suggest that although the longitudinal dynamics of victimization and perpetration were largely similar across groups, disabled students consistently reported higher levels of both behaviors than their nondisabled counterparts. One caveat is that the statistical tests comparing group differences in model parameters may have been underpowered. Although the sample included 831 disabled students (9.1% of the total sample), which is a sizable subgroup, detecting small differences in model parameters may require even larger subgroup sample sizes. Therefore, key model parameter estimates for both groups are presented below for descriptive interpretation rather than formal statistical comparisons between these groups, and marginally significant effects for disabled students ($p < .10$) are also reported.

Table 3-2 (*Nondisabled* and *Disabled* columns) presents the standardized estimates of the key model parameters, and Figure 3-3 provides visual representations of the results for nondisabled and disabled students. First, as a preliminary check, the random intercepts of victimization and perpetration for both groups showed variances significantly greater than zero (not shown in the table)—0.356 and 0.209 for nondisabled students ($p < .001$) and 0.461 and 0.296 for disabled students ($p < .001$), indicating the presence of stable between-student differences in both constructs among both groups. The correlation between the random intercepts of victimization and perpetration was significant and moderate in magnitude for both nondisabled students ($\hat{\rho} = .537$, $p < .001$) and disabled students ($\hat{\rho} = .523$, $p < .001$). This indicates that, on average, students in both groups who experienced higher levels of victimization across the three waves also tended to engage in higher levels of perpetration during the same period, compared with those who experienced lower levels of victimization.

Figure 3-3 Standardized Estimates from Multiple-Group RI-CLPM



Note: Estimates in bold represent nondisabled students, and estimates in underline represent disabled students. + $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$.

At the within-student level, the autoregressive coefficients for victimization were small but significant from one wave to the next for both groups (nondisabled: $\hat{\beta}_{W7 \rightarrow W8} = .163$, $p < .001$, $\hat{\beta}_{W8 \rightarrow W9} = .240$, $p < .001$; disabled: $\hat{\beta}_{W7 \rightarrow W8} = .142$, $p < .05$, $\hat{\beta}_{W8 \rightarrow W9} = .157$, $p < .05$), indicating modest stability. For perpetration, the only significant autoregressive path was observed among nondisabled students from Wave 8 to Wave 9 ($\hat{\beta} = .080$, $p < .05$), suggesting that perpetration became more stable at later waves for nondisabled students but not for disabled students. Regarding the cross-lagged effects, none were significant except for a marginally significant path from Wave 8 victimization to Wave 9 perpetration among disabled students ($\hat{\beta} = .130$, $p < .10$). This suggests that, for disabled students, higher-than-usual levels of victimization were associated with a marginally significant increase in perpetration (relative to their typical level) a year later, whereas no such effects were observed for nondisabled students.

Discussion

This study analyzed longitudinal data from a nationally representative cohort of U.S. students to investigate how bullying victimization and perpetration co-develop across the late elementary school years (RQ1) and whether and how this co-development process differs between disabled and nondisabled students (RQ2). To provide a more accurate understanding of this co-development process, this study used RI-CLPM—a recent extension of CLPM that enables a more accurate examination of the joint developmental processes of two related constructs by distinguishing between-student differences from within-student fluctuations. The following paragraphs discuss the major findings and their implications for future research and practice.

First, findings from the full-sample RI-CLPM indicated that stable between-student differences existed in both victimization and perpetration and that significant overlap existed between these two stable tendencies to experience victimization and engage in perpetration. This result is consistent with findings from previous RI-CLPM studies that examined slightly older student cohorts in different countries (Camacho et al., 2023; Zhou et al., 2022). The observed overlap may reflect the presence of shared individual traits or environmental conditions that increase the likelihood of involvement in bullying both as a victim and a bully (i.e., bully-victims), such as low social problem-solving skills or exposure to a negative school climate, as reported in meta-analytic evidence (Cook et al., 2010). Given this consistent association between victimization and perpetration across the late elementary school years, anti-bullying initiatives may be more effective when they target these shared predictors—for instance, by incorporating universal lessons on problem-solving skills for all students or by using school climate surveys to identify and address areas in need of improvement—to help prevent both forms of bullying involvement.

Another major finding from the full-sample RI-CLPM is that, once between-student differences in victimization and perpetration were accounted for, both behaviors showed stability within students over time, but there was no evidence that one behavior led to the other. These findings are largely consistent with the two previous studies using RI-CLPM (Camacho et al., 2023; Zhou et al., 2022), with two differences. First, while prior studies reported significant within-person stability for each behavior across all time points, the current study found a nonsignificant stability path for perpetration between the earlier waves (i.e., Wave 7 to Wave 8). Second, although no within-person reciprocal effects were found in the current study, one

previous study found a single significant path in each direction at its later waves (Zhou et al., 2022). Several factors may help explain these discrepancies. For instance, the present study followed a younger cohort than the students examined in prior research, which may indicate that bullying perpetration becomes more stable as students grow older. In addition, while previous studies used student-reported measures of perpetration, this study used responses from teachers, who might have limited opportunities to observe bullying incidents occurring in less visible contexts (Ahn et al., 2013; Bradshaw et al., 2007), potentially contributing to the nonsignificant findings reported in the current study. Taken together, these findings highlight the need for replicating this work with diverse samples and measures to further clarify the co-development process of bullying victimization and perpetration at the within-student level.

Despite these differences between the current study and the two previous studies, findings based on RI-CLPM generally support the presence of within-person stability for victimization and perpetration, with little evidence of reciprocal effects between the two behaviors. Practically, these results suggest that role transitions—such as victims becoming bullies or bullies becoming victims—were relatively rare. This may reflect the difficulty of altering power dynamics among students in school settings, where bullies tend to possess greater power (e.g., physical strength, social popularity, cognitive skillfulness) while victims lack these resources (Camacho et al., 2023; Chu et al., 2018). Within such stable power hierarchies, temporary increases in victimization are unlikely to lead to later increases in perpetration, and vice versa. In this regard, anti-bullying strategies should acknowledge and address the critical role of power imbalances in sustaining bullying dynamics. For example, the *Olweus Bullying Prevention Program*—one of the most widely implemented anti-bullying programs—aims to shift power dynamics among students by restructuring the school environment through coordinated components at multiple levels (e.g., individual, classroom, school, community), such as increased supervision on student activities, integration of anti-bullying messages into the curriculum, adoption of clear anti-bullying policies, and active parent involvement (N. C. Andrews et al., 2023; Limber et al., 2018). As another example, *Meaningful Roles* is a recently developed, school-wide anti-bullying program that aims to provide students with structured opportunities to obtain or maintain social status and power through prosocial school-based roles (e.g., “attendance person,” “award detectives,” “computer technician”), thereby reducing opportunities for and rewards of bullying (N. C. Andrews et al., 2023; Ellis et al., 2016). Such programs that directly address underlying power dynamics may be particularly effective in reducing bullying in schools.

Lastly, findings from the multiple-group RI-CLPM showed that significant group differences emerged in the overall levels of bullying victimization and perpetration at each wave (i.e., disabled students reporting significantly higher grand means), rather than in how the two behaviors were associated over time (i.e., no significant group differences in the key model parameters). In other words, while the mechanisms sustaining bullying involvement appeared largely similar for both nondisabled and disabled students, disabled students consistently exhibited higher risks for both victimization and perpetration, aligning with the findings from prior longitudinal studies (Chen et al., 2015; Rose & Gage, 2017). Considering the conceptual lenses of misfit and mismatch on disability (Garland-Thomson, 2011; Shogren, 2013) and the stigma-based bullying framework (Earnshaw et al., 2018), disabled students’ elevated risks for bullying involvement may stem from their structurally disadvantaged positions within school contexts. Such structural marginalization may increase their likelihood of being victimized, while also leading some to engage in perpetration with various motives—such as to avoid further

victimization, reclaim a sense of power, or navigate peer interactions in maladaptive ways. In this sense, addressing the power asymmetries between disabled and nondisabled students—such as by reducing stigma operating at multiple levels in schools (e.g., internalized, interpersonal, institutional)—may be a prerequisite for preventing and intervening in disabled students’ bullying involvement. Yet, given the lack of both quantitative and qualitative empirical studies investigating how disabled students enter and navigate bullying dynamics, more research is needed to elucidate these processes and inform the development of more effective and equitable anti-bullying practices and initiatives for all students.

Limitations and Strengths

This study has several limitations to consider. First, although this study leveraged data from a nationally representative cohort of U.S. students, the size of disabled students was relatively small ($N = 831$), which may have reduced statistical power to detect significant effects for disabled students and group differences. This limitation highlights the need for future replication studies with larger samples of disabled students. Second, although this study examined disabled students as a collective group—reflecting their shared experiences of misfit or mismatch within school environments compared to nondisabled peers—heterogeneity likely exists within this population. For example, the joint developmental process of bullying victimization and perpetration may vary depending on the type of disabilities (e.g., emotional/behavioral disabilities vs. physical disabilities; Rose et al., 2018). Future studies using more nuanced measures of disability beyond a binary indicator will help to provide a deeper understanding of how bullying involvement unfolds among diverse subgroups of disabled students.

Despite its limitations, the present study offers several important contributions. It provides empirical evidence on how bullying victimization and perpetration develop over time during the late elementary school years—a critical developmental period for bullying prevention and intervention. It also provides a more precise understanding of this joint developmental process by using a statistical approach that allows the examination of both between- and within-person effects. In particular, given the paucity of longitudinal research on disabled students’ bullying involvement, the present findings comparing disabled and nondisabled students offer a deeper understanding of the similarities and differences in their experiences of bullying involvement over time. Overall, findings from the current study point towards key avenues for future research and practice to better address bullying involvement among disabled and nondisabled students and to promote more inclusive, equitable school environments for all students.

Conclusion

Despite disabled students' heightened vulnerability to bullying involvement, empirical research investigating their experiences in depth remains limited, often focusing primarily on cross-sectional estimates of bullying involvement or conducting analyses framed within an individual perspective on disability. By centering on late elementary school years—a critical window for bullying prevention and intervention—this dissertation aimed to advance a deeper understanding of bullying involvement among disabled and nondisabled students through a disability-informed lens across three different angles, drawing on national-level longitudinal survey data from the United States. Each chapter constituting this dissertation addresses important gaps in the existing literature and offering implications for disability-informed anti-bullying strategies.

Chapter 1 focused on cross-informant concordance in bullying victimization reports, which is foundational to accurate assessment of school bullying, and examined similarities and differences in cross-informant concordance between disabled and nondisabled students. One of the major findings was systematic disability-based differences in cross-informant concordance, including higher rates of positive concordance as well as higher rates of discordance (both adult underestimation and overestimation) for disabled students than for nondisabled students. Findings from this chapter suggest the need for multi-level, school-based anti-bullying efforts, including strengthening disabled and nondisabled students' capacity to recognize and report bullying, implementing disability-informed anti-bullying training for parents and teachers, and fostering accessible and inclusive school environments in which both disabled and nondisabled students feel safe and comfortable reporting bullying and adults share a clear understanding of appropriate responses.

Chapter 2 added longitudinal empirical evidence of bullying involvement across late elementary school years by identifying four distinct trajectories of bullying victimization during this period (stable high, increasing, decreasing, stable low), using repeated-measures latent profile analysis. This chapter found that disabled students had significantly higher risk for experiencing persistently high or changing patterns of victimization, rather than remaining in the stable low trajectory group. Meanwhile, Schoolwide Positive Behavioral Interventions and Supports (SWPBIS), a widely adopted school-based behavioral support framework, had nonsignificant effects on trajectory membership overall and by disability status. These findings underscore the importance of tailored prevention and intervention efforts for students in late elementary school years given the diversity of bullying victimization experiences in this period, and of strengthening SWPBIS with greater attention to bullying and disability to realize its promise as an effective and equitable anti-bullying framework for all students.

Chapter 3 extended the scope to address both aspects of bullying involvement—victimization and perpetration—given the adverse effects associated with involvement in any role. Specifically, using a random-intercept cross-lagged panel model, this chapter examined the joint development of bullying victimization and perpetration during the late elementary school years to better understand the mechanisms sustaining bullying involvement, as well as potential differences by students' disability status. A major finding from this chapter was that both victimization and perpetration were stable at the within-person level, with no statistically significant evidence of reciprocal effects. These overall patterns were similar across disabled and nondisabled students; however, disabled students consistently reported higher levels of victimization and perpetration at all time points than their nondisabled counterparts. Findings

from this chapter suggest that role transitions in bullying dynamics are relatively rare and that disabled students are consistently more vulnerable to bullying involvement across late elementary school years than nondisabled students, which highlights the importance of addressing power asymmetries among students—with attention to the role of disability in shaping peer power dynamics—to prevent and intervene in bullying at schools. This may include implementing anti-bullying programs that directly address underlying power dynamics, as well reducing disability stigma operating at multiple levels (e.g., internalized, interpersonal, institutional) as a prerequisite for addressing disabled students' bullying involvement.

In summary, grounded in an understanding of disability as a misfit or mismatch arising from the interaction between individuals and their surrounding environments, these three chapters provide rich evidence on bullying involvement among disabled and nondisabled students in late elementary school years. Drawing on national-level longitudinal survey data and rigorous statistical methods, this dissertation contributes robust empirical evidence to advance disability-informed scholarship on bullying involvement. Taken together, this work holds potential for various stakeholders to move beyond an individual, often deficit-based perspective on disability and to engage in disability-informed anti-bullying research, practice, and policy. Findings from this dissertation—including both strengths and limitations—will hopefully serve as a steppingstone for future lines of inquiry and practice that can contribute to building accessible and inclusive bully-free school environments that support the positive development of all students.

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