National Prevalence Rates of Bully Victimization Among Students With Disabilities in the United States

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This study examined the prevalence rates of bully victimization and risk for repeated victimization among students with disabilities using the Special Education Elementary Longitudinal Study and the National Longitudinal Transition Study-2 longitudinal datasets. Results revealed that a prevalence rate ranging from 24.5% in elementary school to 34.1% in middle school. This is one to one and a half times the national average for students without disabilities. The rate of bully victimization was highest for students with emotional disturbance across school levels. Findings from this study also indicated that students with disabilities who were bullied once were at high risk of being bullied repeatedly. Elementary and middle school students with autism and high school students with orthopedic impairments were at the greatest risk of experiencing repeated victimization. Implications of the findings are discussed.

Keywords: victimization, special education, disability, prevalence rates

Bullying is a serious issue in schools due to the potential negative consequences of victimization. Bully victimization is characterized by repeated exposure to aggressive acts over time intended to cause physical harm, psychological distress, or humiliation (Olweus, 1995). Because of the power imbalance inherent in bullying, victims may have difficulty stopping victimization once it begins, leading to a continuing cycle of chronic victimization and creating the potential for negative psychological and academic sequalae (Hoglund, 2007; Pranjić & Bajraktarević, 2010). Between 15% to 23% of elementary students and 20% to 28% of secondary school students report being bullied within a 6-month to 1-year period (Carlyle & Steinman, 2007; National Center for Educational Statistics, 2011; Turner, Finkelhor, Hamby, Shattuck, & Omrod, 2011).

The risk and rate of bully victimization is not equal across student groups, with a number of studies indicating that students with disabilities are at greater risk for being victimized than their nondisabled peers (Estell et al., 2009; Rose, Espelage, & Monda-Amaya, 2009). Farmer and colleagues (2012) found that female students who received special education services were 3.9 times more likely to be victims and 4.8 times more likely to be bully victims than their peers without disabilities. Male students who received special education services were also at greater risk of being the target of bullying than their nondisabled peers, being 2.4 to 3.2 times more likely to be victims or bully victims, respectively. People with disabilities have long been seen by perpetrators of violence as unable to defend themselves or report abuse due to characteristics of their disability (Petersilia, 2001; Thompson, Whitney, & Smith, 1994). Therefore, it is not surprising that children and adolescents with disabilities are at increased risk for victimization by their peers.

Finkelhor's (2007) developmental victimology theory suggests that risk for violence, including bully perpetration, can be attributed to both contextual and individual characteristics that make some victims more susceptible to violence than others. It is plausible that higher bully victimization risk among students with disabilities is attributable, in part, to symptoms

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of their disabilities. Disabilities such as autism spectrum disorders (ASDs; American Psychiatric Association, 2000), learning disabilities (LDs; Kavale & Forness, 1996), and intellectual disabilities (IDs; American Psychiatric Association, 2000) may be characterized or accompanied by social skill and communication deficits that cause children with these types of disabilities to be seen as "different" from their peers.

This perception of being different coupled with social and communication deficits that make it more difficult for children with intellectual disabilities, learning disabilities, or ASDs to accurately interpret ambiguous acts of aggression as hostile or to report acts of victimization may increase their risk for being the target of bully victimization (Cappadocia, Weiss, & Pepler, 2012; Leffert, Siperstein, & Widaman, 2010; Luciano & Savage, 2007; Mishna, 2003; Nabuzoka, 2003).

For students with attention-deficit/hyperactivity disorder (ADHD; American Psychiatric Association, 2000) or emotional disturbance, risk for bully victimization might be elevated because these students are often seen by peers as "provocative" victims who invite bullying victimization as a result of their social immaturity, emotional dysregulation difficulties, or poor social skills (Shea & Wiener, 2003).

Barriers to Estimating Prevalence Rates of Bully Victimization

The literature on bully victimization makes it difficult to accurately determine the prevalence rates of bullying among children and adolescents with disabilities. Most of the studies of bullying in children and adolescents with disabilities use relatively small, convenience samples. In their seminal literature review of bullying in children and adolescents with disabilities, Rose, Monda-Amaya, and Espelage (2011) found that 24 of the 32 studies reviewed had sample sizes of fewer than 100, with bully victimization rates ranging from less than 1% to 100%. The use of small convenience samples makes generalization of findings as well as the calculation of prevalence rates for bully victimization among children and adolescents with disabilities difficult.

Measurement Techniques

Variation in the methods used to assess bully victimization also acts as a barrier to accurate estimation of bullying prevalence rates for students with special needs. Peer nominations are considered the gold standard for estimating victimization in typically developing preadolescents, but such methods may inadvertently restrict the type of disability populations that are included in bullying research (moderate intellectual disability, autism, and so on; Grills-Taquechel, Polifroni, & Pane, 2010).

A central assumption of peer nominations is that peer raters have sufficient exposure and interaction with the target student to validly identify that student's behavior or behavioral characteristics (e.g., engaging in bullying or being victimized). But this assumption may not hold for all students with disabilities given the varying degree of contact they have with typically developing classmates because of their educational placement (e.g., fully or partially included in general education classrooms or in self-contained classroom). Not surprisingly, there is a paucity of research using peer nominations to estimate rates of bullying in students with disabilities. Furthermore, the samples of existing studies consist of students with mild disabilities who are partially or fully included in general education classrooms (Estell et al., 2009; Farmer et al., 2012).

The oversampling of students with mild disabilities in peer nomination bullying research might be due to several reasons: (a) the administrative ease of accessing these youth relative to students with more serve disabilities who are educated in self-contained classrooms; (b) researchers' greater confidence that characteristics of these youth's disability will not hinder their ability to understand and complete peer nomination forms; or (c) the greater likelihood that students with mild disabilities will provide and attain valid behavioral nominations as result of their frequent contact with typically developing peers. However, there is limited research to support these conjectures, and investigations examining the validity of peer nominations with youth with severe disabilities who are educated in self-contained classrooms have not been forthcoming.

Following peer nominations, self-reports of bullying and victimization are considered ap-

propriate methods for estimating victimization experiences in nondisabled youth; yet, relatively few studies estimating bully victimization rates in students with special needs have utilized this design (for exceptions, see Rose et al., 2009; Swearer, Wang, Maag, Siebecker, & Frerichs, 2012). Studies that have employed self-report questionnaires to measure bullying in children in adolescents with disabilities have altered the administration procedure based on the nature of the disability of the students sampled.

For large-scale studies, self-report rating scales are administered to students with disabilities who are partially or fully included in the general education classroom with no reported modification of the administration or format. In contrast, for studies that draw from smaller and more disability-restricted samples such as youth with cognitive impairments or severe disabilities, self-report questionnaires of bullying are modified to a structured interview format, and student interviews are corroborated with adult reports (e.g., from teachers or parents). Research surrounding the validity of self-report measures with students with more severe disabilities and the implications of using guided interviews versus self-reports ratings scales for the accurate estimate of youth's bullying experiences is underdeveloped. Thus, it is not clear whether self-report measures of bullying provide accurate estimates of bullying among students with disabilities who are not educated in inclusionary classrooms.

Whereas peer nominations and self-report ratings of bully victimization appear to provide valid assessments of bully victimization among students with mild disabilities who are educated in inclusionary settings, it has yet to be ascertained whether these techniques can fully estimate the bully victimization experiences of all youth with disabilities, regardless of disability type and severity. One alternative is to use teachers as informants of youth's bullying experiences.

The validity surrounding teacher ratings of student bullying for typically developing peers is inconsistent. Some research suggests that teacher reports provide valid estimates of the bully victimization experiences of elementary students without disabilities, similar to peer nominations, whereas other research suggests that teacher ratings of student bullying yield lower estimates of bullying rates than self-report ratings of bully victimization for typically developing elementary- and middle-school age students (Bradshaw, Sawyer, & O'Brennan, 2007; Ladd & Kochenfeder-Ladd, 2002).

Surprisingly, there is limited research in the disability and special education literatures that uses teacher reports of bullying to assess the victimization experiences of students with special needs. This is perhaps because of the questionable validity of teachers as informants of youth bullying experiences in the general education population (Bradshaw et al., 2007). Instead, much of the literature on bullying among children and adolescents with disabilities is based on parent reports (Rose et al., 2011).

Investigations utilizing parent-reported measures of youth victimization are often characterized by samples of children and adolescents who possess different types of disabilities with varying severity levels (Turner, Vanderminden, Finkelhor, Hamby, & Shattuck, 2011; Van Cleave & Davis, 2006). Although the use of parents as the primary informants of youths' social experiences allows researchers to obtain a diverse sample of students with disabilities and fully capture the bullying experiences of more students with disabilities than studies based on peer nominations or self-report ratings, the validity surrounding parental report of youth's victimization experiences is mixed.

Some scholars argue that parents have unique insight into their children's developmental and social experiences because of their long-term perspective of their children relative to other informants (e.g., peers and teachers). According to this view, parents are believed to be both knowledgeable and valid informants of their child's bullying experiences based on the assumption that victimized youth confide in their parents when they are unable to cope with interpersonal difficulties that arise from bullying or turn to their parents for support in ending bullying perpetration (Arseneault et al., 2011).

Others assert that parents may not be privy to bullying information known by peers and teachers who have greater opportunities to observe students' exposure or involvement in bullying situations (Ladd & Kochenfeder-Ladd, 2002). Because parents are not embedded in the social context where bullying is likely to occur (e.g., the school setting) to the same degree as teach-

ers and peers, and often do not directly observe bullying behavior when it occurs, parents are considered to be less reliable informants of youth's bullying experiences (Ladd & Kochenfeder-Ladd, 2002).

There appears to be some support for both arguments surrounding parents' knowledge about youth's bully victimization experiences much of which is based on the reports of parents of nondisabled students. That is, although concordance rates between parent report and youth self-report of youth's victimization experiences are small to moderate relative to peer nominations and teacher ratings, interrater agreement between parent-reported youth victimization and youth self-reported victimization are comparable to cross-informant agreement rates found for other behavioral measures that rely on both parents and youth as reporters (Achenbach, 2009; Achenbach, McConaughy, & Howell, 1987). Ladd and Kochenfeder-Ladd (2002) found that when peer-nominations, self-report, teacher report, and parent report measures of preadolescents' victimization experiences were estimated simultaneously, parent reports of youth's victimization experiences did not uniquely predict youth's social adjustment above and beyond other informants; however, when considered independently, parent-reported measures of youth's victimization was predictive of victimized youth's self-reported ratings of loneliness, peer nominations of peer rejection, and teacher- and parent-reported social skills.

These findings imply that while parents may not be the best reporters of students' victimization experiences relative to peers and teachers, in the absence of these informants parents may serve as adequate reporters of youth's victimization experiences. Given the current methodological limitations with estimating bully victimization among students with disabilities, and particularly students with disabilities who are educated in self-contained classroom environments, it is possible that the type of assessment technique used to measure youth bullying might impact the estimation of prevalence rates of bullying among students with disabilities.

Definitions of Disability

Additional barriers to the calculation of the bullying rates in children and adolescents with disabilities exist because of the variability in definitions of "disability" used, some of which may be because of linguistic or cultural differences. Of the 32 studies reviewed by Rose and colleagues (2011), only 7 were conducted in the United States, with the remaining investigations conducted internationally.

For cross-national disability research to be meaningful and replicable, linguistic variation in the meaning of disability labels should be addressed through the application of an international diagnostic classification system (e.g., International Classification of Disease-10 [ICD-10] or the International Classification of Functioning [ICF]) or national educational classification systems, such as the United States' Individuals with Disabilities Education Act (1997) or the British Special Education Needs (SEN) classification systems. Yet, only one study in the review by Rose and colleagues (2011) reported using an international diagnostic or educational classification system to describe the disability status of their sample allowing for cross-national comparisons.

Failure to apply international classifications to disability literature can result in linguistic variation in the meaning of disability labels and limit the generalizability of research findings. For example, in Britain, the term "learning disability" is used to refer to what would be called an intellectual disability (American Psychiatric Association, 2000) in the United States and many other countries (University of Bristol, n. d.). Relatively few studies examining bullying in children and adolescents with disabilities explicitly define how disability labels are applied to participants. This study design flaw makes cross-national, cross-disability comparisons of prevalence rates of bullying victimization among children and adolescents with disabilities difficult, and suggests that a large-scale examination of rates of bullying victimization in children and adolescents with disabilities is needed.

Purpose of the Present Study

The purpose of this study was to assess the prevalence rate of bullying victimization in a large national sample of children and adolescents with disabilities who received special education services and were enrolled in primary and secondary school in the United States. Spe-

cifically, the study aimed to (a) estimate the national prevalence rates of bully victimization for children and adolescents with disabilities in elementary, middle, and high school; and (b) identify the level of risk for repeated victimization of children and adolescents with disabilities in elementary, middle, and high school. Within these overall goals, the study also sought to examine differences in rates of bully victimization and risk for repeated bully victimization by disability type. By calculating the prevalence rate and chronicity of bully victimization among children and adolescents with disabilities across and within disability type in elementary and secondary school, the study has generated knowledge that can guide further research, policy, and practice initiatives concerning the bullying experiences of children and adolescents with disabilities and, thus, contributed to the emerging literature on bullying victimization of children and adolescents with disabilities.

Method

Data Sources

Data for this study were drawn from two extant datasets: The Special Education Elementary Longitudinal Study (SEELS) and the National Longitudinal Transition Study-2 (NLTS2). The SEELS and NLTS2 are two independent national longitudinal studies commissioned by the Office of Special Education Programs (OSEP), United States Department of Education, and conducted by SRI International (Wagner, Kutash, Duchnowski, & Epstein, 2005). A two-stage stratified random sampling process was used in each study to produce nationally representative samples of children and youth served in special education. The first stage included selecting a representative sample of local education agencies (LEAs) and special schools. The second stage of the sampling process included selecting a representative sample of students with disabilities based on rosters provided by the LEAs and special schools.

The SEELS sample consisted of 245 LEAs and 30 special schools. These LEAs and special schools provided rosters of students receiving special education services to identify the recruitment sample. An initial sample of 11,512 children and adolescents with disabilities, ages 6 through 12 who were enrolled in an elementary school (ES) or middle school (MS) was recruited to participate. SEELS was conducted over a 6-year period, encompassing three waves of data collection, beginning in 2000 and officially ending in 2006 (Wagner et al., 2005).

The NLTS2 sample consisted of 501 LEAs and 38 special schools. The initial sample included 11,272 youth with disabilities who were 13 to 16 years old in 2000. NLTS2 spanned a 10-year period, which encompassed five waves of data collection beginning during the 2000–2001 academic year and ending during the 2008–2009 academic year (Wagner et al., 2005).

Sample

To address this study's purposes, participants were drawn from Waves 1 and 2 in the SEELS and NLTS2 datasets. Participants were selected if they were enrolled in a private or public school such as a regular (general) education school, special school for students with disabilities, magnet school, charter school, vocational school, or alternative school. For participants drawn from the SEELS dataset, a school-reported grade-level variable was used to classify grade level. Students in first to fifth grade were categorized as attending ES and sixth grade to eighth grade as attending MS. Students reported to be in ungraded programs, or in 9th or 10th grade, were excluded from the study. This sample selection method was applied within each wave for the SEELS data, resulting in a valid sample of 8,886 students in Wave 1 (2000–2001; $N_{ES} = 5,562$; $N_{MS} = 3,324$) and 6,226 students in Wave 2 (2001–2002; $N_{ES} = 3,086$; $N_{MS} = 3,140$).

To identify youth with disabilities enrolled in high school from the NLTS2 dataset, in Wave 1 (2001–2002) participants were selected using parent report of their son/daughter's grade level in high school ($N = 4,630$). Students reported to be in ungraded programs, or in seventh or eighth grade, were excluded. Grade-level information was not available in Wave 2. As a result, participants were selected based on parent or student report that the student was currently enrolled in high school and taking high school classes in Wave 2 (2003–2004; $N = 5,670$).

Participants selected from the Wave 1 SEELS ($N_{ES} = 5,562$; $N_{MS} = 3,324$) and

NLTS2 (N = 4,630) datasets were used to answer the study's first research question on school-level prevalence rates of bullying for students with disabilities. Participants with information across both Waves 1 and 2 in the SEELS (N_{ES} = 3,086; N_{MS} = 3,140) and NLTS2 (N = 5,670) datasets were used to investigate the study's second research question on risk of repeated victimization.

Measures

Disability status. Disability status was determined based on students' primary disability classification reported by the student's school district at the time of sampling. The disability types investigated in this study are consistent with Individuals with Disabilities Education Act of 1990 (1997) special education categories for emotional disturbance (ED), mental retardation (MR), specific learning disability (LD), speech or language impairment (SLI), autism (AU), orthopedic impairment (OI), other health impaired (OHI), multiple disabilities (MD), visual impairment (VI), deaf-blindness (DB), hearing impairment (HI), and traumatic brain injury (TBI). Weighted effect coding was used to recode a 12-level (i.e., 12 disability types) categorical disability classification variable for comparison between victimization status of student with a given disability and the grand mean of all students with disabilities.

Victimization status. A single dichotomous survey item from the SEELS parent interview and a single dichotomous parent survey item from NLTS2 were used to create the dependent variable, victimization status. Respondents indicated (yes or no) whether a given student had been bullied or picked on by other students either at school or on the way to or from school during the current or the past school year.

Data Analysis

Participants were excluded from data analyses if they had missing values at both waves of data collection. Across waves, the rate of missing data was 1.1% for the ES sample, 1.1% for the MS sample, and 1.6% for the high school sample. The full information maximum likelihood (FIML) estimation method in Mplus (ver-

sion 6.1, Muthén & Muthén, 1998–2010) was used to handle the missing data.

Proportion difference tests (i.e., z tests) were conducted to compare the prevalence rate of victimization status for each disability category within elementary, middle, and high school to the overall rate of victimization for that school level. Bonferroni's correction was applied to account for the multiple statistical testing. To examine the risk for victimization over time, a path model with logit link that yielded an odds ratio (OR) was applied to the dichotomous dependent variable, victimization status. Significance tests were conducted to compare the likelihood of repeated victimization between each given disability group and all other disability groups. The effect size of the OR was computed with the equation below (Hasselblad & Hedges, 1995):

$$d_{HH} = L_{OR} \times \frac{\sqrt{3}}{\pi}$$

where d_{HH} is the effect size for OR, L_{OR} is the natural logarithm of the OR, and π is converted into 3.14.

Logistic regression analyses and single-level path analysis assumes independence among observations. Given that stratification and cluster sampling designs were used in the SEELS and NLTS2 datasets, the assumption of independence was violated, so effective sampling weights were employed to prevent estimation of biased standard errors (Lee, Forthofer, & Lorimor, 1989; Skinner, Holt, & Smith, 1989). Effective sampling weights provide reasonably robust parameter estimates without having to adjust *SE*s (Stapleton, 2002). Mplus uses a Taylor series-like function to address data dependency by providing a normal theory covariance matrix for analysis. This matrix is created by obtaining a weighted covariance matrix that combines the variances and covariances of the primary selection units (Stapleton, 2006).

Sample sizes for ES and MS students shown in Table 1 reflect the actual number of cases on which the weighted estimates are based, and reported percentages are population estimates. Sample sizes for high school students were rounded to the nearest 10 consistent with the National Center for Educational Statistics (U.S. Department of Education, Institute of Education

Science, National Center for Education Statistics IES Data Security Office, 1999) procedures for restricted data use.

Results

As shown in Table 1, the overall rate of bully victimization for students with disabilities was 24.5% in ES, 34.1% in MS, and 26.6% in high school. MS students had significantly higher rates of bully victimization than elementary students ($\chi^2 = 80.665$, $p < .001$) and high school students ($\chi^2 = 56.994$, $p < .001$). When rates for being bullied were compared by disability type in ES, students with ED and students with OHI were bullied at significantly higher rates than the overall prevalence rate for bullying among elementary students with disabilities (40.6% and 36.3% vs. 24.5%, respectively). In MS, students with ED (51.8%) had significantly higher rates of bully victimization than the overall rate of bully victimization for all MS stu-

dents with disabilities (34.1%). Similarly, high school students with ED were the only students with a higher rate of victimization (39.0%) than the overall rate of bully victimization for high school students with disabilities (26.6%).

ORs and effect sizes for repeated victimization for students in elementary, middle, and high school are shown in Table 2. As illustrated, across all grade levels, students with disabilities who experienced bully victimization at Wave 1 were more likely to be victimized again at Wave 2. ES students who were reported to be victimized at Wave 1 were over 7 times (i.e., $\text{Odds}_{\text{Victimized1} \rightarrow \text{Victimized2}} = 7.2$) more likely to be victimized again in Wave 2 than ES students who were not bullied in Wave 1. Also shown in Table 2, MS students and high school students bullied in Wave 1 were five times more likely to be bullied again in Wave 2 than their peers with disabilities who were not bullied at Wave 1. When compared with students with disabilities overall, the risk of repeated victimization was

Table 1
Prevalence Rate of Bully Victimization for Students With Disabilities by School Level

Primary disability	Wave 1											
	Elementary school (1st through 5th)				Middle school (6th through 8th)				High school (9th through 12th)[a]			
	N_T	N_B	$B_W\%$	z	N_T	N_B	$B_W\%$	z	N_T	N_B	$B_W\%$	z
LD	484	125	25.6	0.28	527	169	32.9	−0.32	490	120	24.0	−0.62
SI	643	132	20.0	−1.15	176	47	26.9	−1.02	360	70	18.5	−1.50
MR	468	135	29.1	1.20	316	128	41.3	1.61	450	140	30.7	1.04
ED	423	171	40.6	4.53**	392	203	51.8	4.83**	480	190	39.0	3.51**
HI	602	133	22.0	−0.63	362	95	29.0	−1.01	450	100	22.5	−0.90
VI	473	120	22.7	−0.43	249	67	24.8	−1.57	300	60	17.9	−1.48
OI	620	151	21.0	−0.95	308	97	30.6	−0.71	460	120	26.6	−0.01
OHI	465	162	36.3	3.27**	431	173	40.2	1.58	510	150	28.8	0.58
AU	747	170	25.9	0.40	221	62	31.0	−0.50	470	120	28.5	0.47
TBI	192	57	28.9	0.77	128	56	45.6	1.77	190	70	31.1	0.82
MD	428	86	24.0	−0.11	205	59	30.7	−0.54	430	90	21.0	−1.16
DB	—	—	—	—	—		—	—	50	10	29.1	0.22
Total	5,562	1,443	24.5	—	3,324	1,157	34.1	—	4,630	1240	26.6	—

Note. LD = learning disability; SI = speech-language impairment; MR = mental retardation; ED = emotional disturbance; HI = hearing impairment; VI = visual impairment; OI = orthopedic impairment; OHI = other health impaired; AU = autism; TBI = traumatic brain injury; MD = multiple disabilities; DB = deaf-blindness. SI Wave 1 data for elementary and middle school students are drawn from the Special Education Elementary Longitudinal Study (SEELS) study collected in 2000. Wave 1 data for high school students are drawn from the National Longitudinal Transition Study-2 (NLTS2) dataset collected in 2001.
[a] Unweighted sample sizes are rounded to the nearest 10 consistent with NCES restricted data requirements. N_T denotes the total unweighted number of students in each disability category; N_B denotes the unweighted number of students bullied at school in each disability category; $B_W\%$ denotes the weighted percentage of students who have been bullied within each disability category. Cells with dashes indicate that the sample size was too small in that cell to perform calculations. z is the proportion difference test; level of significance denoted as: $p < .05$.
** $p < .001$.

Table 2

Repeated Victimization by Disability Type for Each School Level

	Bully victimization Wave 1 and Wave 2	
	Odds ratio	d_{HH}
Elementary school level		
Overall SWD ($N = 3,086$)	7.2***	1.09
Learning disability (LD)	6.4***	1.03
Speech-language impairment (SI)	7.9***	1.14
Mental retardation (MR)	4.1***	0.78
Emotional disturbance (ED)	8.4***	1.17
Hearing impairment (HI)	3.1***	0.62
Visual impairment (VI)	3.1**	0.63
Orthopedic impairment (OI)	6.5***	1.03
Other health impaired (OHI)	7.3***	1.10
*Autism (AU)	13.8***	1.45
Traumatic brain injury (TBI)	3.1*	0.62
Multiple disabilities (MDs)	5.2***	0.91
Deaf-blindness (DB)	—	
Middle school level		
Overall SWD ($N = 3,140$)	5.3***	0.92
Learning disability (LD)	4.6***	0.84
Speech-language impairment (SI)	5.3***	0.92
Mental retardation (MR)	5.4***	0.93
Emotional disturbance (ED)	6.7***	1.05
Hearing impairment (HI)	3.7***	0.73
Visual impairment (VI)	6.2**	1.00
Orthopedic impairment (OI)	6.3***	1.01
Other health impaired (OHI)	7.1***	1.08
*Autism (AU)	16.0***	1.53
Traumatic brain injury (TBI)	3.1*	0.62
Multiple disabilities (MDs)	4.4***	0.81
Deaf-blindness (DB)	—	
High school level		
Overall SWD ($N = 5,670$)	5.0***	0.89
Learning disability (LD)	6.4***	1.03
Speech-language impairment (SI)	4.5**	0.83
Mental retardation (MR)	2.9**	0.59
Emotional disturbance (ED)	2.9*	0.59
Hearing impairment (HI)	6.5***	1.03
Visual impairment (VI)	3.9	0.75
*Orthopedic impairment (OI)	14.9***	1.49
Other health impaired (OHI)	7.1***	1.08
Autism (AU)	6.7***	1.05
Traumatic brain injury (TBI)	5.9*	0.98
Multiple disabilities (MDs)	6.5***	1.04
Deaf-blindness (DB)	3.4	0.68

Note. SWD = students with disabilities. Data for elementary and middle school students are drawn from the Special Education Elementary Longitudinal Study (SEELS) study in 2000 (Wave 1) and 2002 (Wave 2). Data for high school students are drawn from the National Longitudinal Transition Study-2 (NLTS2) dataset in 2001 (Wave 1) and 2003 (Wave 2). Cells with dashes indicate data were not applicable because of no variation or small sample sizes in the outcome variable. Odds ratios with asterisks indicate level of significance: $p < 05$.
Groups with asterisks evidenced significantly higher likelihood of repeated victimization than all others.
* $p < .05$. ** $p < .01$. *** $p < .001$.

significantly greater for students with autism at both elementary (OR = 13.8) and middle (OR = 16.0) school levels. High school students with orthopedic impairments were at significantly greater risk of repeated victimization (OR = 14.9) compared with all other high school students with disabilities.

Discussion

Because of methodological limitations and study design flaws, to date the prevalence rate of bully victimization among students with disabilities in the United States has not been adequately estimated (Rose et al., 2011). The purpose of this study was to provide an estimate of the national prevalence rate of bullying victimization for children and adolescents with disabilities drawing from two national samples of elementary and secondary students receiving special education services in the United States and to identify which students with disabilities were most at risk for experiencing repeated bully victimization based on their disability status.

National rates of bully victimization for elementary and secondary students in the United States range between 15% to 28% (Carlyle & Steinman, 2007; National Center for Educational Statistics, 2011; Turner, Finkelhor, et al., 2011). The present study's findings suggest that rates of bully victimization for students with disabilities in elementary, middle, and high school are one to one and a half times (24.5% to 34.1%) the national averages estimated for students without disabilities. A number of scholars have hypothesized that certain symptoms and characteristics associated with students' disability status might increase risk for being bullied among children and adolescents with disabilities (Mishna, 2003; Nabuzoka, 2003; Swearer et al., 2012). Across school levels, students with ED experienced significantly higher rates of bully victimization than all other students with disabilities, with rates for students with ED ranging from 39% to 52%. Following students with ED, at the elementary level the bully victimization rates for students who received special education services through the OHI program were higher than the average rate of bullying for all elementary students with disabilities. These prevalence rates suggest that children and adolescents with disabilities, espe-

cially students with ED, experience elevated rates of bully victimization should be the focus of investigation and bullying intervention programming efforts.

Psychological symptoms of anxiety, depression, and externalizing behavior problems are identified as both causes and consequences of bully victimization (Cook, Williams, Guerra, Kim, & Shadek, 2010; Hoglund, 2007). Given that ED eligibility placement is marked by internalizing and externalizing symptoms, it is plausible that students with ED who exhibit excessive worry, fearfulness, or marked sadness signal to aggressors that they are unable to defend themselves against peer-directed aggression, making them easy targets for persistent victimization (Bernstein & Watson, 1997). Alternatively, children with ED who display elevated externalizing behaviors marked by behavioral outbursts or reactively aggressive behaviors might be at increased risk for victimization since their behavior likely violates peer behavioral norms for decorum and encourages peers to perceive children with ED as justifiable targets of aggression, because of their dysregulated emotions and odd behavior.

A similar line of reasoning may be used to explain why elementary-age children in the OHI program, who usually have ADHD, evidence elevated rates of bully victimization (Schnoes, Reid, Wagner, & Marder, 2006). Because of their difficulty with impulse control, children with ADHD might be perceived by peers as provocative victims who warrant the acts of peer-directed aggression delivered to them, in turn increasing their risk for bully victimization (Beran, 2009).

Consistent with the current literature surrounding developmental trends in bullying, we found that victimization rates for students with disabilities were highest in MS (Finkelhor, Ormod, & Turner, 2009). Elevated rates of bullying during MS might be attributed to developmental changes in peer relationships when children begin to compete for social resources such as the interest of romantic partners or elevated social status and, as a result, may use bullying and other aggressive strategies to achieve their social goals (Long & Pelligrini, 2003). Bullying rates may also peak at the MS level for students with disabilities because these students are easy targets of aggression and serve as sources of amusement for aggressive peers because they are not fully integrated into the peer social network in MS and may not possess the social savvy to recognize some forms of indirect bullying as hostile (Evans & Eder, 1985).

It appears that once the cycle of bullying begins for students with disabilities, it is difficult to disrupt. Once students with disabilities were victimized by peers they were five to seven times more likely to experience victimization again almost 2 years later. Risk for repeated victimization was evident for all students with disabilities with the exception of ES and MS students who were deaf-blind and high school students who were visually impaired or deaf-blind. Of all children and adolescents with disabilities who were bullied, ES and MS students with autism and high school students with orthopedic impairments were more likely to be subject to repeated victimization.

There is a growing body of literature on the victimization experiences of children with ASD as well children who exhibit orthopedic impairments (Dawkins, 1996; Twyman et al., 2010; Yude, Goodman, & McConachie, 1998). This research suggests that children and adolescents with ASD demonstrate increased risk for bully victimization because of social impairments that are manifestations of their disability, such as difficulty with reading situational cues, impairments in the ability to judge the motives and intentions of others, and for students with Asperger's disorder being susceptible to manipulation and acts of humiliation characteristic of bullying because of an eagerness to befriend same-age peers and gain social acceptance.

For students with orthopedic impairments, it appears that their risk of victimization is attributed to the "visibility" of their disability coupled with bullies' intolerance for differences in appearance and desire to select targets that are inherently weaker and unable to retaliate against aggressive blows (Rose et al., 2011).

Study Limitations

Results of this study should be interpreted in the context of study limitations. A parent-reported measure was used to assess rates and risk for bully victimization among children and adolescents with disabilities. Although the parent measure used in this study is similar to the

types of measures used in other studies that have documented the bullying experiences of children with disabilities, the results of research surrounding the validity of parent reports of students' victimization experiences are mixed (Cappadocia et al., 2012; Van Cleave & Davis, 2006). Some studies suggest that parent-student ratings of bullying show low interrater agreement (Waasdorp, Pas, O'Brennan, & Bradshaw, 2010), whereas others indicate that parents are very aware of their children's experiences of peer victimization (Newgent et al., 2009; Sawyer, Mishna, Peppler, & Weiner, 2011). Nevertheless, the psychometric adequacy of parent-report measures of youth victimization is comparable to other popular cross-informant measures with respect to its concordance rates between youth and parent reporters and its 3-year stability rates (Achenbach, 2009; Achenbach et al., 1987; Ladd & Kochenderfer-Ladd, 2002), thereby suggesting that parents are reliable informants of their children's bullying experiences.

Drawing from a sample of students with disabilities, Carran and Kellner (2009) reported that of the 60% of students with ED who reported being bullied, 57% responded that they had informed their parents about the bullying incident. These findings imply that some parents are knowledgeable about their experiences with bullying and that in the absence of youth report, parents might serve as valid informants of students' bullying experiences. Additional research is needed to confirm the validity of parent measures for assessing bullying, especially for children and adolescents with disabilities who might be unable to complete self-report or peer nomination ratings independently because of impairments in cognitive and academic functioning.

It is possible that the use of a single dichotomous item in the present study to measure the bully victimization experiences of students with disabilities resulted in an overestimation of bullying rates among students with disabilities. The present study yields rates of victimization for students with disabilities that are comparable to victimization rates identified by two independent investigations that used multiple Likert-scale items (Cappadocia et al., 2012; Turner, Vanderminden, et al., 2011). Given this evidence, the findings of the present study are considered to be a valid estimate of bully vic-

timization among students with disabilities in the United States.

Bullying behavior perpetrated by children with disabilities was not assessed, making it impossible to comment empirically on bully or bully victim rates. It is quite possible that children with ED serve dual roles as both bullies and victims because of their difficulties with impulse emotional and behavioral regulations; however, Farmer et al. (2012) found that students with disabilities were at greater risk for being a victim or bully victim than a bully.

Conclusions

Despite the above limitations, this study makes a significant contribution to the bully literature as one of the first national studies in the United States to provide population rates of victimization among students with disabilities across three school levels. It is also one of the few longitudinal studies in the United States to examine risk for victimization beyond a single academic year and between disability types.

Consistent with popular belief, we found that rates of bully victimization among students with disabilities exceeded national rates of bullying for students without disabilities and that exposure to bullying significantly increased risk for repeated victimization among students with disabilities, warranting the development of school-based bullying prevention and intervention programs for students with disabilities.

Another significant finding is that some students with disabilities, particularly students with ED, ASD, OI and students in the OHI program appear to be at greater risk for bully victimization than others. Scholars should identify strategies to alter existing bully prevention and intervention programs so that they meet the mental health needs of students with these types of disabilities and reduce their risk for being the target of bully perpetration (Raskauskas & Model, 2011). Additionally, children and adolescents in the ED, ASD, OI, and OHI special education programs should be included in schoolwide bullying assessments to assess their degree of exposure and involvement in bullying incidents.

In sum, results from this study suggest that children and adolescents with disabilities are not immune to the ills of bullying and should be included in the current public discourse on how

bullying impacts the lives of children from socially marginalized populations. Future research should examine factors outside of disability status that predict the victimization status of students with disabilities, including students' interpersonal skills and current psychological functioning, since vulnerability to bullying is more likely attributed to a student's functional skills (reading social cues, social skills, externalizing behaviors) than just a specific disability label. Finally, school-level characteristics found to be associated with risk for victimization in the general education population should be further explored in conjunction with the functional skills of students with disabilities to better understand what factors predict children and adolescents with disabilities' risk for bully victimization (Bradshaw, Sawyer, & O'Brennan, 2009).

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