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Disability and Victimization in a National Sample of Children and Youth

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Abstract

Although past research has found higher rates of violence, crime, and abuse among children with disabilities, most studies combine diverse forms of disability into one measure and assess exposure to only one particular type of victimization. Based on a representative national sample of 4,046 children aged 2–17 from the 2008 National Survey of Children's Exposure to Violence, the present study examines the associations between several different types of disability and past-year exposure to multiple forms of child victimization. Results suggest that attention-deficit disorder/attention-deficit with hyperactivity disorder elevates the risk for peer victimization and property crime, internalizing psychological disorders increase risk for both child maltreatment and sexual victimization, and developmental/learning disorders heighten risk only for property crime. In contrast, physical disability did not increase the risk for any type of victimization once confounding factors and co-occurring disabilities were controlled. It appears that disabilities associated with interpersonal and behavioral difficulties are most strongly associated with victimization risks.

Keywords

child victimization, physical disability, ADD/ADHD, developmental disorders, psychological disorders

Children with disabilities have long been considered a vulnerable population (Cohen & Warren, 1990; Govindshenoy & Spencer, 2006). Most literature on exposure to violence and disabilities indicates that children with disabilities are at greater risk of victimization than those without disabilities (Kendall-Tackett, Lyon, Taliaferro, & Little, 2005; Mishan, 2003; Rand & Harrell, 2009; Spencer et al., 2005; Sullivan, 2009; Van Cleave & Davis, 2006). Many of these studies, however, either focus on only one form of disability, like physical or developmental disability, or combine many different forms of disability into a single index. Moreover, much of the research that considers risk for victimization among disabled children focuses exclusively on child maltreatment, while others consider only peer victimization. Very few studies have allowed for victimization comparisons across both different forms of disability and different forms of victimization. Finally, many existing studies on this topic used samples derived from child protective services, police or hospital records, and school contexts, rather than community probability samples (Sullivan, 2009). While such studies are certainly useful, these selective groups of disabled and/or victimized children may not accurately represent the general population of children with these problems.

Although there is no universal definition of disability (Sullivan, 2009), most conceptualizations incorporate a broad array of chronic conditions that limit functioning. The National Crime Victimization Survey (NCVS), for example, defines disability as "a long-lasting (six months or more) sensory, physical, mental, or emotional condition that makes it difficult for a person to perform daily activities" (Rand & Harrell, 2009). Thus, disability can encompass: emotional and behavioral disorders, like depression or conduct disorder; physical disabilities that create limitations in hearing, sight, or mobility; as well as developmental and learning disabilities such as autism or cognitive disability. Although disability status defined this broadly may indeed represent a risk factor for victimization, as will be discussed below, there is reason to suspect that level of risk would vary by the specific type of disability considered. Moreover, since different disabilities are associated with different types of impairments and challenges, the risks they impose for victimization exposure may further vary by different types of victimization. A better understanding of how specific forms of disability create differential risk for different

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types of victimization may provide important clues concerning the mechanisms that create vulnerability in this population.

Importantly, because victimization has been shown repeatedly to contribute to child health problems (Finkelhor, Ormrod, & Turner, 2007; Thompson, Arias, Basile, & Desai, 2002), analyses examining how disability may influence victimization risk should also attempt to establish temporal order, with diagnosis preceding the victimization assessment (Kendall-Tackett et al., 2005). Finally, many existing studies fail to account for overlapping risk factors that may contribute to both disability and child victimization. Socioeconomic status (SES) and family structure, for example, have been linked to both child victimization (Berger, 2004; Turner, Finkelhor, & Ormrod, 2006, 2007) and child disability and disorder (Bauman, Silver, & Stein, 2006; Hetherington, Bridges, & Isabella, 1998; Shifrer, Muller, & Callahan, 2010). In addition, past studies have not controlled for parental psychological disorders, which have also been associated with increased risk of child victimization (Verona & Sachs-Ericsson, 2005; Walsh, MacMillan, & Jamieson, 2002) and the development of psychiatric disorder in offspring (Biederman et al., 2006; Hammen, 1991; Hughes, Furr, Sood, Barmish, & Kendall, 2009). The current research seeks to address these important conceptual and analytic issues by differentiating between several forms of disability and several forms of child victimization, establishing the temporal order of disability and victimization assessments, and accounting for the effects of demographic factors and parental psychological/behavioral disorder. We focus on four major categories of disability: physical disability, internalizing disorders, attention-deficit disorder or attention-deficit hyperactivity disorder (ADD/ADHD), and developmental and learning disorders, and on four major categories of child victimization: peer assault/bullying, sexual victimization, maltreatment, and property crime.

Previous Research on Victimization and Disabilities

Peer Assault and Bullying

Some research on peer bullying supports the notion that children with internalizing emotional problems, like depression and anxiety, are at greater risk for being victimized by peers (Finnegan, Hodges, & Perry, 1998). Peer-victimized children often exhibit behaviors associated with ''internalizing symptoms'' that likely contribute to them being singled out by peers, including crying easily, manifesting anxiety, being socially withdrawn, and submitting to their attackers (Hodges, Malone, & Perry, 1997; Perry, Williard, & Perry, 1990). Children with developmental or learning disorders may be similarly vulnerable to peer victimization. Deficits in social competence, self-protective skills, and supportive peer networks may make children with developmental and learning disabilities more attractive targets for peer victimization. Indeed, Little (2002) found the prevalence of being ''hit by peers or siblings'' and ''emotional bullying'' for children with Asperger's or a nonverbal learning disorder to be 73% and 75%, respectively, in the last year.

Other disabilities may increase the risk for peer assault and bullying, not because they signal vulnerability to perpetrators, but because disability-related behaviors contribute to antagonistic interactions. That is, some disabled children may be more likely to provoke conflict or animosity with other children, either intentionally or unintentionally, that increases their risk of victimization (Finkelhor, 2008). Researchers have observed that some peer-victimized children exhibit ''externalizing problems'' such as disruptiveness, aggression, and argumentativeness (Olweus, 1978; Perry, Perry, & Kennedy, 1992). Such symptomatology is believed to be irritating to some perpetrators and therefore contribute to exposure to peer victimization. Children with ADD/ADHD often exhibit these kinds of antagonistic behaviors, show substantial social skill deficits, are frequently viewed by peers as loud and annoying (Landau & Moore, 1991), are more likely to experience hostile interactions with peers, and are at risk for peer rejection (Oland & Shaw, 2005).

Sexual Victimization

Some disabled youth may also be at greater risk for sexual victimization. According to the National Crime Victimization Survey (Rand & Harrell, 2009), youth with any disability are more than two times more likely to be exposed to sexual assault as other children. Children with internalizing disorders may be especially at risk in this regard. Finkelhor (2008) suggests that child emotional problems may lead to ''dependent, sexualized, or indiscriminately affiliative behavior that leaves children open to victimization'' (p. 53). Consistent with this notion, Foshee, Benefield, Ennett, Bauman, and Suchindran (2004) in a longitudinal study of adolescents found that girls' depression significantly predicted both the subsequent onset of sexual dating violence and the chronic victimization from sexual dating violence. Based on a national probability sample of adolescent girls, Raghavan, Bogart, Elliot, Vestal, and Schuster (2004) also found depression to predict subsequent sexual victimization, independent of a variety of other predictors, including victimization history and substance use.

Child Maltreatment

The majority of research conducted on child victimization and disability focuses on child maltreatment (Sullivan, 2009), showing that children with disabilities (broadly defined) are at significantly greater risk for physical maltreatment and neglect (Cohen & Warren, 1990; Kendall-Tackett et al., 2005; Reiter, Bryen, & Shachar, 2007). The elevated risk found among children with physical and developmental disabilities (Jaudes & Mackey-Bilaver, 2008; Vig & Kaminer, 2002) has been attributed to high levels of caregiving burden, creating stress for parents (Wallander & Noojin, 1995).

Other studies have found that children with behavioral and mental health conditions are also at increased risk for abuse and

neglect (Jaudes & Mackey-Bilaver, 2008; Sullivan & Knutson, 2000). In a study of determinants of maltreatment, fatality cases were significantly more likely than other maltreatment cases to be associated with child behavior problems, ''provoking behavior,'' in particular (Chance & Scannapieco, 2002). Sprang, Clark, and Bass (2005) found that even when controlling for a variety of caregiver characteristics and relational factors, the level of children's externalizing symptoms was the strongest predictor of severe maltreatment. As discussed above, children with ADD/ADHD often also exhibit externalizing symptoms, including impulsivity, attention problems, undercontrolled behavior, and aggression (Oland & Shaw, 2005). Like peers, some parents may find these traits aversive and experience increased difficulty in routine socialization and caregiving demands.

Internalizing disorders may also be associated with demanding and needy behavior that could potentially trigger maltreatment responses in some caregivers. Moreover, internalizing symptoms in children, such as those associated with depression, are sometimes different from those of adults. Thus, in addition to sadness and withdrawal, children can exhibit irritability and anger (American Psychiatric Association, 1994), behaviors that might be perceived as antagonistic by some caregivers.

Property Crime

Very little research has considered how disabilities may affect children's exposure to property crime. However, it seems plausible that youth with developmental and learning disorders may be particularly vulnerable targets for this type of victimization. Cognitive and social skill deficits may reduce their ability to protect personal property, making children with these kinds of deficits especially attractive victims for theft and robbery. Consistent with this hypothesis, Reiter, Bryen, and Shachar (2007) and the NCVS (2007) found that individuals with cognitive disabilities were significantly more likely to experience theft and other property crime than those without a reported disability.

Study Aims

The present study examines associations between different forms of disability and past-year exposure to peer assault or bullying, sexual victimization (by a juvenile or adult noncaregiver), child maltreatment (physical abuse, emotional abuse, neglect, and sexual abuse by caregiver), and property crime. We consider four categories or types of diagnosed disability: (a) physical disability (a physical health or medical problem that affects daily activity); (b) internalizing disorder (including depression, anxiety disorders, and posttraumatic stress disorder [PTSD]); (c) ADD/ADHD; and (d) learning and developmental disorders (including developmental disability/mental retardation, autism spectrum disorders, and other learning disorders). We assess differences in past-year exposure to victimization across disability groups, with efforts to address temporal order by including only postdiagnosis victimization events. Thus, although our data are cross sectional, we are able to infer within our analytic time frame that disability preceded victimization. Given the goal of identifying disability-specific risk in victimization, we consider whether children diagnosed with different types of disabilities experienced elevated exposure to victimization when overlapping risk factors are held constant. Specifically, we control for demographic factors (including SES and family structure), parent psychological disorder, and other co-occurring disabilities.

Although our study objectives are largely exploratory in nature, some hypotheses are suggested by the literature reviewed above. Relative to children without disabilities, we hypothesize that (a) peer assault/bullying will be elevated among youth with internalizing disorders, developmental and learning disorders, and ADD/ADHD; (b) sexual victimization will be higher among youth with internalizing disorders; (c) child maltreatment will be greater for all types of disability, with the highest rates among those with ADD/ADHD, physical disabilities, and developmental/learning disorders; and (d) property crime will be elevated for youth with developmental and learning disorders.

Method

Participants

The National Survey of Children's Exposure to Violence was designed to obtain incidence and prevalence estimates of a wide range of childhood victimizations (Finkelhor, Ormrod, Turner, & Hamby, 2011; Finkelhor, Turner, Ormrod, & Hamby, 2009; Hamby, Finkelhor, Turner, & Ormrod, 2010; Turner, Finkelhor, & Ormrod, 2010; Turner, Finkelhor, Ormrod, & Hamby, 2010). Conducted between January 2008 and May 2008, the survey focused on the experiences of a nationally representative sample of 4,549 children aged 0–17 living in the contiguous United States. The interviews with parents and youth were conducted over the phone by the employees of an experienced survey research firm.

The primary foundation of the design was a nationwide sampling frame of residential telephone numbers from which a sample of telephone households was drawn by random digit dialing (RDD). This nationally representative cross section yielded 3,053 of the 4,549 completed interviews. To ensure that the study included a sizable proportion of minorities and low-income respondents for more accurate subgroup analyses, there was also an oversampling of the U.S. telephone exchanges that had a population of 70% or more of African American, Hispanic, or low-income households. RDD employed with this second ''oversample'' yielded 1,496 of the completed interviews. Sample weights were applied to adjust for differential probability of selection due to (a) study design, (b) demographic variations in nonresponse, and (c) variations in within-household eligibility. The current research focuses on 4,046 children aged 2–17. (Infants were dropped from the analyses because we did not have comparable victimization and

Table 1. Sample Characteristics

Age in years (*M*)	9.6
Sex (%)	
Male	51.1
Female	48.9
Family structure (%)	
Two parents (bio or adopted)	63.4
Parent and stepparent or partner	10.4
Single parent	21.4
Other adult	4.8
Race and ethnicity (%)	
White, non-Hispanic	59.6
Black, non-Hispanic	15.6
Other or mixed race, non-Hispanic	6.0
Hispanic, any race	18.7
Mother ever diagnosed with psychological/ behavioral disorder (%)	12.8
Father ever diagnosed with psychological/ behavioral disorder (%)	8.2
Past-year victimization (%)	
Peer assault/bullying	32.4
Sexual victimization	6.7
Maltreatment	10.8
Property crime	27.3
Disability diagnosis (>1 year ago) (%)	
Physical disability	6.2
Internalizing disorder	3.9
ADD/ADHD	6.7
Developmental or other learning disorder	6.4
Any disability (of four types)	16.9

Note. ADD/ADHD = attention-deficit disorder/attention-deficit with hyperactivity disorder. $N = 4{,}006$. *N*, percentages and means are weighted.

disability information on this youngest group.) The analytic sample is somewhat smaller ($N = 3{,}979$ unweighted), given certain diagnostic exclusions (discussed below). Characteristics of the analytic sample are reported in Table 1.

Procedure

A short interview was conducted with an adult caregiver (usually a parent) in each household to obtain family demographic information. One child was randomly selected from all eligible children living in a household by selecting the child with the most recent birthday. If the selected child was 10–17 years old, the main telephone interview was conducted with the child. If the selected child was under age 10, the interview was conducted with the caregiver who "is most familiar with the child's daily routine and experiences." A safety protocol was implemented to ensure confidentiality of responses and privacy during the interview. Comparison between proxy (i.e., parent) and self (i.e., child) reports with this instrument found no evidence of reporter bias (Finkelhor, Hamby, Ormrod, & Turner, 2005; Finkelhor et al., 2009).

Respondents were promised complete confidentiality and were paid $20 for their participation. The interviews, averaging 45 minutes in length, were conducted in both English and Spanish. Two hundred and seventy-nine of the interviews with the parents were done in Spanish. Nearly all of the adolescents aged 10–17 chose to be interviewed in English. Respondents who disclosed a situation of serious threat or ongoing victimization were recontacted by a clinical member of the research team trained in telephone crisis counseling whose responsibility was to stay in contact with the respondent until the situation was resolved. All procedures were authorized by the Institutional Review Board of the University of New Hampshire.

Response Rates and Nonresponse Analyses

The cooperation rate (percentage of contacted respondents who completed the survey) for the RDD cross-section portion of this survey was 71% and the response rate (the percentage of all eligible respondents who completed the survey) was 54%. The cooperation and response rates associated with the smaller oversample were somewhat lower at 63% and 43%, respectively. These are good rates by current survey research standards (Babbie, 2007; Keeter, Kennedy, Dimock, Best, & Craighill, 2006), given the steady decline in response rates that have occurred over the last three decades (Atrostic, Bates, Burt, & Silberstein, 2001) and the particular marked drop in recent years (Curtin, Presser, & Singer, 2005; Keeter et al., 2006; Singer, 2006). Although the potential for response bias remains an important consideration, several recent studies have shown no meaningful association between response rates and response bias (Curtin, Presser, & Singer, 2000; Groves, 2006; Keeter, Miller, Kohut, Groves, & Presser, 2000; Merkle & Edelman, 2002). We also conducted our own nonresponse analysis with the current data and found that respondents who refused to participate (or could not be reached), but for whom parent screener information was obtained, were not systematically different from respondents on victimization risk (details of the nonresponse analyses can be obtained from the authors).

Measures

Victimization. This survey used items from an enhanced version of the Juvenile Victimization Questionnaire (JVQ), an inventory of childhood victimization (Finkelhor, Hamby, et al., 2005; Finkelhor, Ormrod, Turner, & Hamby, 2005a; Hamby, Finkelhor, Ormrod, & Turner, 2004). The original JVQ obtained reports on 34 forms of youth victimization covering five general areas of interest: conventional crime, maltreatment, victimization by peer and siblings, sexual victimization, and witnessing and indirect victimization (Finkelhor, Ormrod, Turner, & Hamby, 2005b). The enhanced version adds further types of victimization to the questionnaire, including 2 items about Internet victimization. Individual questions asking about specific types of victimizations are referred to as "screeners." Follow-up questions for each screener item gathered additional information about each victimization, including whether the event occurred in the past year and perpetrator characteristics.

For this study, four measures of specific victimization type were constructed, counting only experiences that occurred in

the past year: (a) peer assault and bullying (by a nonsibling juvenile); (b) sexual victimization by a noncaregiver; (c) maltreatment, which included any physical abuse, emotional abuse, neglect, or sexual abuse by a caregiver; and (d) a property crime by any perpetrator (*any* = 1, *none* = 0). The specific screeners which were included in each of these four aggregate victimization types are shown in Appendix A. Rates of past-year victimization across these four types are shown in Table 1.

Disability diagnosis. Of particular interest to this study was whether a child had been diagnosed with any of several types of disabilities prior to the past-year victimization period defined in the interview. Such diagnoses were measured by questions asked of the child's adult caregiver (usually a parent) during the initial screening interview. The caregiver was asked whether the child had ever received a diagnosis of any of certain disorders, such as PTSD, ADD/ADHD, autism, and/or depression, among others, and, if so, the age at which the child was diagnosed. For the current analyses, only children whose diagnosis occurred at least 1 year prior to the interview's past-year victimization period were considered "diagnosed" (based on a comparison of the child's age at the time of interview and the age at which a diagnosis was made). Children who had received a diagnosis less than a year ago were dropped from the analyses ($n = 61$), since the temporal ordering of diagnosis and past-year victimization could not be established for these cases, yet we did not want them to be counted as nondisabled. Since no follow-up question regarding age of diagnosis was asked for the physical disability question, all children with a physical disability were treated as if they had been diagnosed more than 1 year ago.

Four specific disability types were constructed as follows: (a) any physical disability (a physical health or medical problem that affects the kinds of activities the child can do); (b) any internalizing disorder (PTSD, anxiety disorder other than PTSD, depression); (c) ADD/ADHD; and (d) developmental or learning disorder (autism, pervasive developmental disorder, Asperger's, developmental delay or retardation, dyslexia, or other learning problem). Given the small number of respondents diagnosed with opposition defiant or conduct disorder ($n = 9$), these respondents were also dropped from the analyses. The percentages of the sample with each of the four disability types are presented in Table 1.

Demographics and parent psychological disorder. Child and household information was also obtained in the initial parent interview. Measurements included in the analysis were the child's sex, age in years, race/ethnicity (coded into four groups: White non-Hispanic, Black non-Hispanic, other race non-Hispanic, and Hispanic any race), and SES. SES is a composite based on the sum of the standardized household income and standardized parental education (for the parent with the highest education) scores, which was then restandardized. Also included was a measure of family structure, defined by the composition of the household and categorized into four groups: children living with (a) two biological or adoptive parents, (b) one biological parent plus partner (spouse or nonspouse), (c) single biological parent, or (d) other caregiver. In addition, two binary variables were created to indicate whether the child's biological mother or biological father had ever been diagnosed with any psychological disorder. These measures were constructed from two questions in the initial parent interview. The first question asked whether anyone in the child's family had ever been diagnosed by a professional with major depressive disorder, bipolar disorder, anxiety disorder, substance disorder, or other psychiatric disorder. A follow-up question asked which family member/members had received such a diagnosis. Demographic and parent disorder percentages are reported in Table 1.

Analysis

Our first aim was to simply document rates of victimization across disability types in much the same way as previous studies. Consistent with the analytic strategy of studies that combine many different types of disability into a single index, we compare victimization rates of children with any disability to those with no disability. Similar to research focused on individual forms of disability, we also examine whether children with a given type of disability, relative to all children without that disability, experienced elevated past-year exposure to the four types of victimization. Chi-square statistics were calculated to compare victimization exposure between respondents within and outside of each disability category.

The next objective was to determine whether associations between specific disability types and victimization are evident after controlling for differences in demographic characteristics and parent psychological/behavioral disorder, and after accounting for whether respondents had other types of disability. To this end, we first sought to establish whether particular disability types co-occur (i.e., are significantly associated) and whether disability is related to demographic characteristics and parent disorder. We then conducted a series of multiple logistic regression analyses that apply the appropriate controls. For each type of victimization outcome, we estimated the odds of victimization with all demographic factors, parent disorder, and other disability types in the equation. Thus, the odds ratios for each disability type represent the odds of victimization among children with only that one type of disability relative to children with no disability. The analyses allow us to contrast simple descriptive assessments that have been typical of earlier studies with a more focused analysis of how specific disability types, independent of confounding influences, are associated with victimization risk.

Results

Table 2 presents differences in victimization rates between children within and outside of each disability category. Children with any disability reported significantly higher rates of all forms of victimization relative to children with no disability. However, we get a different picture when we compare children

Table 2. Differences in Victimization Rates by Disability Group

Victimization Type	Physical Disability			Internalizing Disorder			ADD/ADHD Disorder			Develop/Learning Disorder			Any Disorder		
	Yes	No	χ^2	Yes	No	χ^2	Yes	No	χ^2	Yes	No	χ^2	Yes	No	χ^2
Percent who experienced:															
Peer Assault/Bullying	35.7	32.2	1.33	42.6	32.0	7.6**	45.7	31.5	23.01***	34.6	32.3	0.61	38.5	31.2	13.52***
Sexual Victimization	10.0	6.4	4.77*	17.5	6.2	30.64***	6.7	6.7	0.00	5.1	6.8	1.11	9.0	6.2	7.27**
Maltreatment	16.9	10.4	10.00**	29.0	10.1	55.28***	16.9	10.4	10.92**	10.5	10.9	0.03	17.7	9.4	40.05***
Property crime	35.3	26.7	8.73**	39.6	26.8	12.31***	38.3	26.5	17.64***	37.9	26.5	15.57***	37.9	25.1	46.11***

Note. ADD/ADHD = attention-deficit disorder/attention-deficit with hyperactivity disorder. $N = 4{,}006$ (weighted). Percentages shown represent the percentage of respondents with and without each disability who experienced each form of victimization.
***$p < .001$. **$p < .01$. *$p < .05$.

Table 3. Correlation Matrix—All Variables

Measure	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Age	—																				
Male	.00	—																			
Socioeconomic status	.04	−.01	—																		
White, non-Hispanic	.04	.00	.33	—																	
Black, non-Hispanic	−.01	.00	−.17	−.52	—																
Other race, non-Hispanic	.00	−.01	.03	−.31	−.11	—															
Hispanic, any race	−.04	.00	−.27	−.58	−.21	−.12	—														
Other adult caregiver	.03	.00	−.10	−.06	.10	.04	−.03	—													
Single parent	.00	.01	−.35	−.18	.21	.02	.02	−.12	—												
Parent and stepparent/ partner	.15	.01	−.07	−.04	.04	.01	.00	−.08	−.18	—											
Two bio parents	−.11	−.01	.38	.21	−.25	−.04	−.01	−.30	−.69	−.45	—										
Mother psych diagnosis	.00	.01	−.10	.02	.00	.00	−.03	.14	.08	.10	−.19	—									
Father psych diagnosis	.03	.02	−.04	.08	−.06	.01	−.05	.08	.09	.05	−.14	.21	—								
Physical disability	.03	.01	−.07	.00	.02	.01	−.03	.05	.01	.03	−.05	.08	.05	—							
Internalizing disorder	.14	.03	−.06	.01	.01	.00	−.02	.06	.06	.08	−.13	.25	.15	.12	—						
ADD/ADHD	.13	.12	−.07	.02	−.01	.00	−.01	.05	.06	.09	−.13	.07	.11	.12	.24	—					
Develop/learning disorder	.04	.07	−.07	.01	.00	.03	−.03	.03	.07	.05	−.10	.08	.05	.20	.13	.24	—				
Peer assault/bullying	.16	.07	−.01	.01	.05	.00	−.06	.03	.05	.03	−.08	.09	.06	.02	.04	.08	.02	—			
Sexual victimization	.23	−.06	.01	−.02	.02	.05	−.03	.05	.02	.02	−.05	.06	.03	.04	.09	.00	−.02	.21	—		
Maltreatment	.11	−.01	−.04	.00	.03	.01	−.03	.09	.08	.09	−.16	.09	.08	.05	.12	.05	.00	.19	.19	—	
Property crime	−.02	.01	.01	.01	.02	.01	−.03	.02	.05	.06	−.09	.07	.03	.05	.06	.07	.07	.23	.16	.18	—

Note. ADD/ADHD = attention-deficit disorder or attention-deficit hyperactivity disorder. $N = 4{,}006$ (weighted). Correlation coefficients are significant at the following magnitudes: .031 for $p < .05$. .041 for $p < .01$. .052 for $p < .001$.

with and without particular forms of disability. Children with physical disabilities were more likely than children without physical disabilities to experience maltreatment, sexual victimization, and property crime, but they did not experience elevated levels of peer victimization. Youth with internalizing disorders, however, experienced substantially higher levels of all four types of victimization. Rates among youth with these disorders were particularly high for sexual victimization and maltreatment. Children with ADD/ADHD reported significantly higher rates of peer victimization, maltreatment, and property crime but did not experience higher rates of sexual victimization relative to children without this diagnosis. Finally, children with developmental or learning disorders experienced substantially higher rates of property crime than children without these types of disabilities, but they were not more likely to experience any of the other types of victimization.

The analyses presented in Table 2 establish that children with particular disabilities report elevated rates of some types of victimization relative to children without those disabilities. However, the bivariate correlations presented in Table 3 indicate that both disability and victimization are also related to family background characteristics and that different types of disability can co-occur. For example, all four types of disability and each form of victimization were significantly related to psychological disorder of both mother and father. Moreover, each type of disability is significantly correlated with every other disability type. These correlations confirm the need to control for background factors and other forms of disability when examining the effect of particular disability types on victimization.

Table 4 presents the results of the multiple logistic regression analyses predicting past-year exposure to each of the four types of victimization. Findings show that ADD/ADHD was the only disability type significantly related to peer assault/bullying when all demographic characteristics, parent disorder variables, and other disabilities were controlled. Children with this diagnosis had over 40% greater odds of being exposed to peer assault/bullying in the past year than children with no

Table 4. Effects of four Disability Types on Peer Assault/Bullying, Sexual Victimization, Maltreatment, and Property Crime

	Peer		Sexual		Maltreatment		Property	
Predictor	Coeff. (*SE*)	OR	Coeff. (*SE*)	OR	Coeff. (*SE*)	OR	Coeff. (*SE*)	OR
Age	0.08 (.01)	1.08***	0.24 (.02)	1.27***	0.06 (.01)	1.07***	−0.02 (.01)	0.98*
Male	0.30 (.07)	1.35***	−0.46 (.14)	0.63**	−0.10 (.11)	0.90	0.02 (.07)	1.02
Socio-Economic Status	0.02 (.05)	1.02	0.10 (.09)	1.10	0.05 (.07)	1.05	0.16 (.05)	1.17**
Black, non-Hispanic	0.22 (.10)	1.24*	0.31 (.19)	1.36	−0.08 (.15)	0.92	0.02 (.11)	1.02
Other Race, non-Hispanic	−0.03 (.15)	0.97	0.84 (.23)	2.33***	−0.04 (.22)	0.96	0.04 (.15)	1.04
Hispanic, any race	−0.25 (.10)	0.78*	−0.01 (.20)	0.99	−0.19 (.15)	0.83	−0.06 (.10)	0.94
Other adult caregiver	0.24 (.17)	1.27	0.51 (.28)	1.66	1.22 (.21)	3.37***	0.37 (.17)	1.44*
Single parent	0.20 (.10)	1.22*	0.22 (.18)	1.24	0.85 (.14)	2.33***	0.43 (.10)	1.53***
Stepparent/partner	0.02 (.12)	1.02	−0.18 (.22)	0.84	0.87 (.16)	2.38***	0.51 (.12)	1.66***
Mother psychological/behavioral disorder	0.50 (.11)	1.65***	0.52 (.19)	1.68**	0.31 (.15)	1.36*	0.27 (.11)	1.32*
Father psychological/behavioral disorder	0.23 (.13)	1.26	0.05 (.23)	1.05	0.30 (.17)	1.35	0.00 (.13)	1.00
Physical disability	0.03 (.15)	1.03	0.38 (.24)	1.46	0.37 (.19)	1.45	0.27 (.14)	1.31
Internalizing disorder	−0.20 (.19)	0.82	0.56 (.26)	1.75*	0.66 (.21)	1.93**	0.23 (.19)	1.26
ADD/ADHD	0.34 (.14)	1.41*	−0.41 (.29)	0.66	0.07 (.20)	1.07	0.34 (.14)	1.41*
Develop/learning disorder	−0.12 (.15)	0.89	−0.48 (.32)	0.62	−0.45 (.23)	0.64*	0.37 (.14)	1.44*
Nagelkerke R^2	.07		.18		.09		.03	
χ^2	192.42		279.86		179.29		85.29	

Note. ADD/ADHD = attention-deficit disorder or attention-deficit hyperactivity disorder. N = 4,006 (weighted). Coeff. = logistic regression coefficient; *SE* = standard error; OR = odds ratios. Reference categories: White, non-Hispanic; two-parent family.
***p < .001. **p < .01. *p < .05.

disability. With respect to sexual victimization, analyses show that only internalizing disorder was a significant predictor when all covariates are in the model. Thus, relative to children with no disability, those with only internalizing disorders had 75% greater odds of experiencing sexual victimization in the previous year, independent of demographic factors and parent psychological disorder.

Internalizing disorder also had a significant effect on maltreatment exposure, independent of demographic factors and parent psychological disorder, with almost twice the odds of maltreatment among those with an internalizing disorder relative to those without any disability. In contrast, children with developmental or learning disorders had significantly *lower* odds of being exposed to maltreatment than those with no disability, when other factors were controlled. Finally, both ADD/ADHD and developmental/learning disorders are significant predictors of exposure to property crime. With all covariates in the model, both types of disability increased the odds of experiencing property crime by about 40%.

A few additional associations in Table 4 are noteworthy. For example, the odds of all four types of victimization increased with age and were significantly greater among respondents whose mother had been diagnosed with a psychological or behavioral disorder. Greater odds of peer victimization and lower odds of sexual victimization were evident for males relative to females. Children living in single-parent families, stepfamilies, and households with nonparent caregivers all had significantly higher odds of both property crime and maltreatment. For example, relative to families with two biological parents, children in single-parent families and stepfamilies had 2.3 and 2.4 times the odds, respectively, of experiencing some form of maltreatment in the past year. It should also be noted that, while in all cases at least one form of disability was associated with increased odds of victimization, the overall variance explained by each models was relatively small.

Discussion

This study clearly demonstrates the importance of examining the effects of individual forms of disability on child victimization rather than combining multiple types into a single measure. Not all forms of disability are associated with equivalent levels of risk. Similarly, it is beneficial to consider many different forms of victimizations since the level of risk will also differ by the type of victimization. This kind of more differentiated analysis provides a clearer understanding of the nature of the problem. Thus, finding variations in the effects of disability on different types of victimization more accurately delineates the risk for disabled children and can provide clues concerning the potential mechanisms that place disabled children at risk.

Findings also point to the importance of accounting for sociodemographic variations across disability groups as well as parent characteristics, such as psychological disorder, that may contribute to some types of child disability as well as some types of child victimization. Simple correlational studies between disability and victimization may overstate the degree of relationship unless these overlapping risk factors are controlled. Findings also suggest that victimization risk associated with one type of disability may often be confounded with other co-occurring types. Thus, controlling for other forms of disability is essential for understanding the types of victimization risks that arise from particular forms of disability. The present research makes a unique contribution by addressing these

issues and by attempting to ensure that disability existed prior to our victimization assessment.

With respect to peer assault and bullying, past research has suggested that both internalizing symptoms that signal vulnerability to perpetrators and externalizing problems that may be viewed as antagonistic could increase risk. However, results pointed more to the importance of externalizing problems for this type of victimization, since only ADD/ADHD was significantly related to peer victimization after controlling for demographic and parent factors. Thus, none of the disabilities associated with the kinds of symptoms that we believed might signal vulnerability to perpetrators or that might impair children's abilities to avoid or deter victimization (i.e., physical disability, internalizing disorder, and developmental/learning disorders) were associated with peer victimization after controls were included. Instead, these analyses point to the likely role of externalizing types of symptoms in helping to elicit or trigger hostile behaviors in peers.

In contrast, only youth with internalizing disorders were significantly more likely to experience sexual victimization in the last year. It is possible that youth with depressive and/or anxiety-related symptoms are more vulnerable to sexual victimization because their symptomatology impedes their ability to negotiate safe sexual interactions, or because they are more likely be exploited by offers of attention and affection, making them easier targets for sexual predators.

As noted earlier, it has been suggested that children with disabilities may be at greater risk for maltreatment because their extensive needs and/or behavioral difficulties can trigger maladaptive responses in some parents. Thus, we anticipated that children with externalizing types of symptoms, often characteristic of ADD/ADHD, as well as children who may require especially high levels of care, as is often the case with physical and developmental disabilities might be at particular risk for maltreatment. In contrast, we found significantly *lower* odds of maltreatment among children with developmental/learning disabilities when sociodemographic factors, parent disorder, and other disabilities were controlled. And although bivariate analyses showed elevated rates among the children with ADD/ADHD and those with physical disabilities, both of these associations were no longer significant when all other covariates were held constant. Instead, it was internalizing disorders that had the greatest likelihood of maltreatment exposure, and this association remained with all controls and other disabilities in the equation. Thus, relative to children with no disability, only those with internalizing disorders experienced significantly greater odds of maltreatment.

Although we were somewhat surprised by this finding, it is important to remember that children with internalizing disorders do not always display the same constellation of symptoms as adults with these disorders. Children with depression, for example, are often irritable and hostile, exhibiting frequent expressions of anger and rage (American Psychiatric Association, 2000; Evans et al., 2005). Thus, while children with these disorders can also be sad and withdrawn, depression in children is often ''disguised'' by ''active'' behavior such as irritability, temper tantrums, violence, risky actions, and/or refusal to go to school (Kauffman, 1993). Thus, children with internalizing disorders may indeed pose substantial caregiving challenges; they may be particularly difficult to communicate with and to control, and they may be unresponsive to parents' efforts to correct problem behavior. Future research is needed to better understand the source of maltreatment risk among children and youth with internalizing disorders.

Interestingly, children diagnosed with ADD/ADHD and those with developmental and other learning disorders were at elevated risk for property crime, with other factors controlled. Indeed, this was the only form of victimization that was elevated among those with developmental/learning problems. These findings suggest that children with cognitive and social impairment and/or whose learning disability is visible at school may be viewed by peers as easy targets for theft, vandalism, or robbery.

It is interesting to note that in this study physical disabilities were not associated with victimization when background factors and other conditions are controlled. This is noteworthy since when people think of ''disability,'' it is generally physical disabilities that first come to mind. However, the current study finds that it is emotional and behavioral disabilities—disorders that are typically more ''invisible''—that are most often associated with victimization. This suggests that disability-related problems that affect social skills, interaction patterns, and the quality of relationships create the greatest vulnerability.

There are limitations of this research that should be acknowledged. First, assessing disability by diagnosis type may miss important information about the particular symptoms or problems that create victimization risk. There are many children who experience substantial symptomatology who have not been formally diagnosed with a disorder. This is especially the case with emotional and behavior disorders where it is estimated that up to 80% of children who would qualify as disordered have not been diagnosed (Kataoka, Zhang, & Wells, 2002). Moreover, since comorbidity is common in children, many co-occurring disorders may remain undiagnosed even when another diagnosis has been made. Also, as discussed above, the constellation of symptoms even among those with the same diagnosis can vary considerably. Examining symptoms directly along with diagnoses would help better understand the specific behaviors and attributes that place disabled children at risk for different forms of victimization.

Second, we acknowledge that children with more severe disabilities are likely to be underrepresented in this sample, especially among the older youth. For example, since we relied on self-reports for the 10–17 respondents in our sample, youth with severe developmental disabilities were more likely to be excluded because they were unable to complete the interview. Thus, the developmental and learning disorder category is likely comprised of youth with high-functioning autism, Asperger's and other learning problems rather those with more severe cognitive disabilities. Similarly, those with physical disabilities whose daily functioning is greatly limited were probably less likely to be included in our survey. Nonetheless, higher-functioning disabled children represent a sizable group within

most disability categories and their victimization risk is certainly important to assess.

Third, although a substantial and unique strength of this study was its use of a large nationally representative sample, future research would benefit from an even larger sample that is able to specify more nuanced linkages between disability and victimization types. For example, we were not able to assess the effects of externalizing disorders (i.e., conduct and oppositional defiant disorder) on victimization because there were too few children with these types of disorders in our sample. Assessing the effects of particular disabilities on victimization with other types controlled represented an important advantage of this study by allowing us to isolate disability-specific effects. However, it may also be useful to consider how specific combinations of disability may influence victimization. A larger sample that allows the assessment of both independent and combined effects of different forms of disability may potentially provide further insights into the mechanism involved in victimization risk. The influence of different forms of disability in creating vulnerability to different types of victimization may also vary developmentally. Thus, although age was controlled in our regression analyses, it would be helpful to investigate these processes separately by age group, especially by developmental periods that mark school transition periods. Again, this would require a substantially larger sample.

Fourth, although we were able to establish that disability was present prior to the victimization events considered in these analyses, this does not establish the causal direction of the association in general. It is certainly possible that children who were exposed to victimization earlier in their lives were more likely to develop mental and physical health problems that led to a disability diagnosis. This seems particularly relevant for internalizing disorders, given the large body of literature demonstrating the effects of victimization on these kinds of emotional problems (Harkness & Lumley, 2007; Lynch & Cicchetti, 1998; Molnar, Buka, & Kessler, 2001; Widom, 1999). Thus, early victimization may initiate a causal sequence over the child's life course, whereby victimization leads to disability which, in turn, increases the risk for subsequent victimization. Given the cross-sectional nature of this study, we were unable to fully establish causal ordering. Longitudinal studies are needed to better delineate the causal chains that link disability and victimization, and the mechanisms involved in these processes.

Finally, although this study revealed a number of interesting findings concerning variations in victimization risk across different types of disability, it is important to note that the overall variance in victimization explained by the study variables was relatively small. There are likely other important predictors not considered that mediate and/or moderate the effect of disability on victimization exposure. Future research should attempt a more comprehensive assessment of individual, family, and situational factors that arise from or co-occur with disability in order to better specify the mechanisms involved and the contexts that buffer or exacerbate victimization risk among the disabled.

The present study confirms the contention that children with disabilities are especially vulnerable to violence, crime, and abuse. It is also clear, however, that not all types of disability create equal levels of risk for all types of victimization. Understanding these variations is important for understanding the mechanisms involved in creating risk and for targeting interventions to reduce such risk. In beginning to address these issues, our findings suggest that children with internalizing disorders are particularly vulnerable to sexual victimization and maltreatment by caregivers, while children with ADD/ADHD are especially at risk for peer assault and bullying.

In terms of implications for clinical, school, or home settings, these findings suggest the potential utility of incorporating victimization risk into interventions for children with disabilities. If the patterns found in this study are confirmed in future research, then ADD/ADHD interventions might incorporate, for example, peer interaction and conflict management strategies. Interventions for youth with internalizing disorders might include a focus on developing healthy romantic relationships and avoiding situations that might lead to sexual exploitation, as well as improving parent–child communication skills. Our findings also suggest that children with certain disabilities might benefit from special protections from property crime. For example, children with learning or cognitive disabilities might require access to more secure spaces for their belongings, such as special desks or lockers at school, and many children with these disabilities could benefit from programs to teach them to monitor their own belongings more carefully.

Appendix A
Screeners Used to Assess Victimization Types

Peer assault and bullying (when perpetrated by non-sibling juveniles)

C4. Sometimes people are attacked with sticks, rocks, guns, knives, or other things that would hurt. At any time in (your child's/your) life, did anyone hit or attack (your child/you) on purpose with an object or weapon? Somewhere like: at home, at school, at a store, in a car, on the street, or anywhere else?

C5. At any time in (your child's/your) life, did anyone hit or attack (your child/you) WITHOUT using an object or weapon?

C6. At any time in (your child's/your) life, did someone start to attack (your child/you), but for some reason, it didn't happen? For example, someone helped (your child/you) or (your child/you) got away?

C9. At any time in (your child's/your) life, (has your child/have you) been hit or attacked because of (your child's/your) skin color, religion, or where (your child's/your) family comes from? Because of a physical problem (your child has/you have)? Or because someone said (your child was/you were) gay?

C7. At any time in (your child's/your) life, did someone threaten to hurt (your child/you) when (your child/you) thought they might really do it?
P1. Sometimes groups of kids or gangs attack people. At any time in (your child's/your) life, did a group of kids or a gang hit, jump, or attack (your child/you)?
P2. (If yes to P1, say: "Other than what you just told me about . . . .") At any time in (your child's/your) life, did any kid, even a brother or sister, hit (your child/you)? Somewhere like: at home, at school, out playing, in a store, or anywhere else?
P3. At any time in (your child's/your) life, did any kids try to hurt (your child's/your) private parts on purpose by hitting or kicking (your child/you) there?
P4. At any time in (your child's/your) life, did any kids, even a brother or sister, pick on (your child/you) by chasing (your child/you) or grabbing (your child/you) or by making (him/her /you) do something (he/she /you) didn't want to do?
P5. At any time in (your child's/your) life, did (your child/you) get really scared or feel really bad because kids were calling (him/her /you) names, saying mean things to (him/her /you), or saying they didn't want (him/her /you) around?
P6. At any time in your life, did a boyfriend or girlfriend or anyone you went on a date with slap or hit you?

Sexual victimization

S1. At any time in (your child's/your) life, did a grown-up (your child knows/you know) touch (your child's/your) private parts when they shouldn't have or make (your child/you) touch their private parts? Or did a grown-up (your child knows/you know) force (your child/you) to have sex? [Note: if perpetrator was care giving adult, counted as maltreatment]
S2. At any time in (your child's/your) life, did a grown-up (your child/you) did not know touch (your child's/your) private parts when they shouldn't have, make (your child/you) touch their private parts or force (your child/you) to have sex?
S3. Now think about other kids, like from school, a boy friend or girl friend, or even a brother or sister. At any time in (your child's/your) life, did another child or teen make (your child/you) do sexual things?
S4. At any time in (your child's/your) life, did anyone TRY to force (your child/you) to have sex, that is sexual intercourse of any kind, even if it didn't happen? [Note: if perpetrator was care-giving adult, counted as maltreatment]
S5. At any time in (your child's/your) life, did anyone make (your child/you) look at their private parts by using force or surprise, or by "flashing" (your child/you)?
S6. At any time in (your child's/your) life, did anyone hurt (your child's/your) feelings by saying or writing something sexual about (your child/you) or (your child's/your) body?

Maltreatment

M1. Not including spanking on (his/her /your) bottom, at any time in (your child's/your) life did a grown-up in (your child's/your) life hit, beat, kick, or physically hurt (your child/you) in any way?
M2. At any time in (your child's/your) life, did (your child/you) get scared or feel really bad because grown-ups in (your child's/your) life called (him/her /you) names, said mean things to (him/her /you), or said they didn't want (him/her /you)?
M3. When someone is neglected, it means that the grown-ups in their life didn't take care of them the way they should. They might not get them enough food, take them to the doctor when they are sick, or make sure they have a safe place to stay. At any time in (your child's/your) life, (was your child/were you) neglected?
M4. Sometimes a family fights over where a child should live. At any time in (your child's/your) life did a parent take, keep, or hide (your child/you) to stop (him/her /you) from being with another parent?
S1. At any time in (your child's/your) life, did a grown-up (your child knows/you know) touch (your child's/your) private parts when they shouldn't have or make (your child/you) touch their private parts? Or did a grown-up (your child knows/you know) force (your child/you) to have sex? [Note: counted only if perpetrator is parent, parent's partner/friend, guardian, or other adult relative]
S4. At any time in (your child's/your) life, did anyone TRY to force (your child/you) to have sex, that is sexual intercourse of any kind, even if it didn't happen? [Note: counted only if perpetrator is parent, parent's partner/friend, guardian, or other adult relative]

Property victimization

C1. At any time in (your child's/your) life, did anyone use force to take something away from (your child/you) that (he/she was/you were) carrying or wearing?
C2. At any time in (your child's/your) life, did anyone steal something from (your child/you) and never give it back? Things like a backpack, money, watch, clothing, bike, stereo, or anything else?
C3. At any time in (your child's/your) life, did anyone break or ruin any of (your child's/your) things on purpose?

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