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Disability, poverty, and other risk factors associated with involvement in bullying behaviors

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ABSTRACT

Using a stigma-based bullying framework, the current study investigated how (a) disability status was related to bullying-related behaviors when controlling for gender, grade level, and free or reduced lunch status; (b) gender, grade level, and free or reduced lunch status moderated the associations of disability status with bullying-related behaviors; and (c) classification in specific disability categories was associated with bullying-related behaviors with a sample of 10,483 students (47.8% female) in elementary, middle, and high school. School records data were collected on grade level, gender, free or reduced lunch price status, disability status, and disability category. Students completed the *Bullying Participant Behaviors Questionnaire (BPPQ)*, rating five types of bully role behaviors (bullying behavior, assistant behavior, victimization, defending behavior, and outsider behavior). Findings indicated that having a disability was associated with increased victimization, assisting, and defending behavior. Furthermore, disability status interacted in meaningful ways with several demographic factors: (a) females with a disability reported more victimization and reported engaging in more outsider behaviors than females without a disability, (b) elementary students with a disability reported more assisting and less defending behaviors than those without a disability, (c) high school students with a disability reported less bullying and assisting behaviors and more defending behaviors than those without a disability, and (d) students with a disability from low socioeconomic backgrounds reported more bullying and outsider behaviors than students not from lower socioeconomic family backgrounds. When comparing students from specific disability categories to those with no disability, students with an emotional disability reported more assisting, victimization, and outsider behaviors; students with other health impairment reported more assisting, victimization, and defending; students with autism reported less defending and outsider behaviors; and students with a learning disability reported more defending behavior. Exploratory analyses of the effects of school-level factors found that school size (enrollment) was positively related to prevalence of assisting and outsider behavior. The percentage of low-income students in a school was positively associated with the extent of victimization and defending behaviors reported, but negatively associated with the extent of outsider behaviors reported.

One direction of bullying research has been to identify students who may be at greater risk of being involved in bullying (Eisenberg, Gower, McMorris, & Bucchianeri, 2015; Janssen, Craig, Boyce, & Pickett, 2004; Robinson & Espelage, 2012). Findings indicate students with disabilities are vulnerable to involvement in bullying, as students with disabilities are victimized by bullying behavior at nearly double the rate of students without disabilities (Bear, Mantz, Glutting, Yang, & Boyer, 2015; Blake, Lund, Zhou,

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Kwok, & Benz, 2012; Rose, Simpson, & Moss, 2015). Additionally, students with disabilities are at a higher risk of being involved in the bullying situation as a victim or as a perpetrator (Eisenberg et al., 2015; Rose & Espelage, 2012; Rose & Gage, 2017) and may have more negative outcomes from bullying involvement than their peers without a disability (Hartley, Bauman, Nixon, & Davis, 2015, 2017). The research on disability status as a risk factor for bullying involvement has focused primarily on the role behavior of bullying and being victimized, with little work examining other role behavior in the bullying dynamic, such as bystander behavior (Bear et al., 2015; Rose, Monda-Amaya, & Espelage, 2011; Rose, Simpson, & Moss, 2015; Rose, Swearer, & Espelage, 2012; Siperstein, Pociask, & Collins, 2010). Further, given the large sample sizes necessary, research that examines involvement in bully role behaviors for students with specific disability types is lacking. Finally, although the research appears to indicate that having a disability is a risk factor, little research has investigated how other risk factors, such as age, socioeconomic status (SES), or gender may moderate the association of disability status with bully role behaviors (Son et al., 2014).

Researchers have applied Bronfenbrenner's (1979) social ecological model to help understand the complexities and influences surrounding bullying behavior (Espelage & Swearer, 2010). Recently, work has extended these theories to explain situations where individuals may be targeted for having certain characteristics. The stigma-based bullying framework (Earnshaw et al., 2018) frames the complexities of bullying behaviors given there are *social stigmas* causing societal devaluing of certain characteristics or identities, *structural* biases played out in policies, law, or cultural practices and beliefs, and *interpersonal* interactions that play out in stigmas and are often influenced by social dominance orientation (Ho et al., 2012), stereotypes, or prejudice. Thus, societal, structural (i.e., school, family), and individual characteristics of youth all interact to create conducive or nonconductive conditions for bully role behaviors, particularly when a traditionally stigmatized characteristic is at play. In this framework, several characteristics may apply, such as poverty level, racial or ethnic identity, LGBT status, or disability status. The goal of the current study was to use the stigma-based bullying framework to consider the complexity and potentially cumulative risk of several unique individual characteristics of youth when investigating a variety of bully role behaviors.

Among school-aged children, bullying can be viewed as part of a social dynamic, with varying levels and bully role behavior among individuals within the same learning environment. Research has identified several role behaviors in the bullying situation (Demaray, Summers, Jenkins, & Becker, 2016; Espelage & Holt, 2001; Salmivalli, 1999; Salmivalli, Lagerspetz, Björkqvist, Österman, & Kaukiainen, 1996; Sutton & Smith, 1999), including (a) being victimized by bullying, (b) engaging in bullying others, (c) assisting or reinforcing the bullying behavior (e.g., joining in or laughing along), (d) defending the victim, and (e) outsider behavior (e.g., witnessing bullying behavior but choosing not to act in any way). Little research has studied the involvement of students with disabilities in role behaviors other than engaging in bullying others and being victimized (Eisenberg, McMorris, Gower, & Chatterjee, 2016; Siperstein et al., 2010).

1. Bullying and students with disabilities

One of the inherent problems in studying the topic of bullying and disability status is the relatively smaller number of students with low-incidence disabilities. As such, it is difficult to study multiple disability categories with reliable results. Previous research has circumvented this problem by either focusing on one disability profile, such as autism or learning disabilities (Baumeister, Storch, & Geffken, 2008; Cappadocia, Weiss, & Pepler, 2012; Fisher, Lough, Griffin, & Lane, 2017; Zablotzky, Bradshaw, Anderson, & Law, 2012), or using limited distinctions in disability status (e.g., having an individualized education plan versus not having one; Farmer, Wike, Alexander, Rodkin, & Mehtaji, 2015; Rose, Espelage, Aragon, & Elliott, 2011).

Even when specific disability type or diagnosis has been studied in association with bully role behaviors, existing studies have focused solely on bullying and victimization without examining other bully role behaviors. For example, children with emotional disabilities and ADHD show increased bully role behavior compared to students with other disabilities (Carter & Spencer, 2006; Rose & Espelage, 2012) and students with emotional disabilities have reported being victimized more than other students (Bear et al., 2015). Additionally, students with learning disabilities and autism (specifically, students with autism in inclusive environments) are victimized at greater rates than students without disabilities (Baumeister et al., 2008; Rose et al., 2015), although at least one study (i.e., Humphrey & Hebron, 2015) has found that students with autism spectrum disorders have reported being victimized less than other students. Data also suggest that students with learning disabilities report assisting in bullying behavior more than other students (Baumeister et al., 2008). More work is needed to examine if type of disability may be related to other bully role behaviors in the bullying dynamic.

2. Additional risk factors in the bullying dynamic

Students who have disabilities are not defined solely by their disability or IEP status. When research examines only disability status without taking into account other key demographic characteristics, important elements may be missed. For example, socioeconomic inequality can be considered as a potential risk factor for increased involvement in the bullying situation, as students of low SES are at higher risk of victimization (Due et al., 2009; Fu, Land, & Lamb, 2013; Son et al., 2014). In addition, a meta-analysis on socioeconomic status and bullying revealed that both victims and bully-victims (i.e., those who concurrently perpetrate and are victimized by bullying behavior) were more likely to come from low SES households (Tippett & Wolke, 2014). Finally, studies suggest students are more at risk for bullying involvement due to their age (Craig et al., 2009) or gender (Espelage & Holt, 2001).

2.1. Developmental trends

Research has documented consistent school-age differences in bullying and victimization, with middle school students being more involved in bullying incidents than elementary or high school students (Craig et al., 2009; Nansel et al., 2001; Siann, Callaghan, Glissov, Lockhart, & Rawson, 1994; Smith & Gross, 2006; Williams & Guerra, 2007). Less is known about role behaviors other than bullying and victimization, but some research indicates younger students are more likely to engage in defending behavior than older students (Caravita, Di Blasio, & Salmivalli, 2009; Gini, Albiero, Benelli, & Altoè, 2007; Pozzoli & Gini, 2010).

2.2. Gender considerations

Research findings have varied regarding gender differences across various bullying roles. Although some research has found little to no difference in levels of bullying and victimization between males and females (e.g., Barlett & Coyne, 2014; Boulton, Trueman, & Flemington, 2002), other research has found that males are more likely to be victims and perpetrators of bullying (e.g., Espelage & Holt, 2001; Nansel et al., 2001; Seals & Young, 2003). Differences in the perception, measurement, and definitions of bullying may account for some of the inconsistencies (Carbone-Lopez, Esbensen, & Brick, 2010; Smith, Cowie, Olafsson, & Liefhoghe, 2002). Regarding other role behaviors, females have been found to engage in defending behavior more often than males (Cook, Williams, Guerra, Kim, & Sadek, 2010; Jenkins & Nickerson, 2017; Ma, 2002; Monks, Ortega Ruiz, & Torrado Val, 2002; Nickerson, Mele, & Princiotta, 2008; Olweus, 1993; Rigby & Johnson, 2006; Salmivalli et al., 1996), although both genders are more likely to defend when the victim is of the same gender (Jenkins & Nickerson, 2017).

Research has investigated the effects of gender, race, and socioeconomic status among bully role behaviors within certain groups of students with disabilities. Girls with learning disabilities, for instance, have reported being victimized more than boys with learning disabilities (Nabuzoka & Smith, 1993). In addition to disability status, race, gender, and SES also have accounted for variance in victimization (Due et al., 2009). However, because victimization is only one part of the bully dynamic, much more research is needed to establish associations among student demographic characteristics, specific disabilities, and specific bullying roles.

2.3. School-level factors

School-level factors also may be associated with varying rates of bullying behavior. Research has suggested that a high concentration of student poverty in a school was associated with an increased risk for bullying involvement among middle school students, and may have increased the risk for involvement in retaliatory aggression and fights among elementary students (Bradshaw, Sawyer, & O'Brennan, 2009). Further, Due et al. (2009) suggested that the association between SES and bullying behavior may be more salient where SES among students varies markedly from the general wealth of a school or community.

The size of the student population in a school has been associated with bullying involvement, with larger schools having higher rates of bullying and victimization, even when controlling for SES (Bowes et al., 2009; Crosnoe, Johnson, & Elder, 2004; Smokowski, Cotter, Roberson, & Guo, 2013). Another school demographic that we hypothesize may be associated with bully role behavior prevalence is the proportion of students with disability. However, most existing research has only examined the effects of disability status at the student level (e.g., Espelage, Rose, & Polanin, 2015; Rose, Espelage, & Monda-Amaya, 2009).

3. Current study

Although previous research has considered aspects of various bullying roles (Demaray et al., 2016; Espelage & Holt, 2001; Salmivalli, 1999), as well as bullying behavior in general involving students with a range of disabilities (Kowalski, Morgan, Drake-Lavelle, & Allison, 2016; Rose et al., 2009; Rose, Forber-Pratt, Espelage, & Aragon, 2013), we found little to no research examining how multiple demographic risk factors (e.g., grade level, gender, socioeconomic status, and disability status) relate to specific bully role behavior that includes more than bullying and victimization alone. By utilizing a large sample with finer distinctions in disability status and key demographic characteristics, this study aimed to investigate the involvement of students with and without various disabilities and demographic risk factors in bully role behaviors. Specifically, the following research questions guided the current study:

3.1. Research Question 1

How is student disability status related to each of the five bullying-related behaviors (i.e., bullying, assisting, being victimized, defending, being an outsider) when controlling for gender, grade level, and free or reduced lunch status? It was predicted that students with disabilities would be involved in more negative bully role behaviors (i.e., bullying, assisting, being victimized) than students without disabilities (Rose & Espelage, 2012; Rose, Simpson, & Moss, 2015). This question and hypothesis serve as a replication analysis with the extension of additional bully role behaviors for which there is little to no research.

Regarding the control variables, it was predicted that middle school students would have higher involvement in most bully role behaviors than younger or older students (Smith & Gross, 2006; Williams & Guerra, 2007) and that elementary students would report defending behavior more than older students (Caravita et al., 2009; Gini et al., 2007; Pozzoli & Gini, 2010). It was predicted that females would report defending more than males (Nickerson et al., 2008; Rigby & Johnson, 2006) and males would report more

victimization and bullying than females (Espelage & Holt, 2001; Nansel et al., 2001; Seals & Young, 2003). Finally, it was predicted that students receiving free or reduced lunch would report higher levels of bullying and victimization (Tippett & Wolke, 2014).

3.2. Research Question 2

Is the association of student disability status with bullying-related behaviors moderated by grade level, gender, or free or reduced lunch status? Very little work exists with which to base predictions. However, using the research guiding our hypotheses for Research Question 1 above, several hypotheses were made. It was predicted that the deleterious effect of a disability on victimization would be greater for girls than for boys (Nabuzoka & Smith, 1993) and that being male and lower SES would exacerbate the positive association between bullying, assisting, and having a disability (Espelage & Holt, 2001; Nansel et al., 2001; Seals & Young, 2003; Tippett & Wolke, 2014). It is expected that defending behavior will be greater for elementary school students, but that having a disability may lessen that association (Caravita et al., 2009; Gini et al., 2007; Pozzoli & Gini, 2010).

3.3. Research Question 3

Is disability category associated with bullying-related behaviors? It was predicted that students with an emotional disability would report engaging in more bullying behavior and victimization (Bear et al., 2015; Carter & Spencer, 2006; Rose & Espelage, 2012), students with an other health impairment would report higher rates of bullying behavior (Carter & Spencer, 2006; Rose & Espelage, 2012), students with a learning disability would have higher rates of victimization and assisting in bullying (Baumeister et al., 2008), and students with autism would report higher rates of victimization (Baumeister et al., 2008; Rose, Stormont, et al., 2015). Little to no research has examined defending or outsider behavior for students with specific disabilities. Therefore, these results will be exploratory, with a theoretical expectation that having an emotional disability or other health impairment (e.g., ADHD) may be associated with higher levels of defending behavior due to an empathic response of having been victimized or an impulsive response to become involved in a bullying situation.

3.4. Exploratory analyses

Although not a primary aim given the social ecological framework driving this study, it was of interest to explore the school-level microsystem factors described above that could be associated with levels of bully role behavior, including the size of a school, the overall percentage of students with disabilities in a school, and the overall percentage of students with lower income in a school. The association of each of the bully role behaviors was examined using percentage of students in a school with disabilities, percentage of low-income students in a school, and overall school size as school-level predictors.

4. Method

4.1. Participants

This study examined data collected from a district-wide evaluation at a suburban school district in Illinois. Data were collected from 10,483 students (47.8% female) in elementary, middle, and high school. Students in grades 4–12 were eligible to participate and approximately 86% of these students completed the study. The remaining 14% of students did not participate due to absence, lack of assent, or parental opt-out through passive consent procedures. Table 1 shows the distribution of selected participant characteristics.

4.2. Measures

Official school records were used to obtain students' descriptive demographic information, which included the following variables: gender, grade level, free or reduced lunch status, disability status, and specific disability category. Gender was coded as 0 = male, 1 = female. Grade level consisted of elementary (grades 4 and 5), middle (grades 6 to 8), and high (grades 9 to 12). Free or reduced lunch status was coded as 0 = no free or reduced lunch and 1 = free or reduced lunch. In Illinois, standards for free lunch are determined by a household income requirement at or below 130% of the federal poverty line (Illinois State Board of Education), with household size also a determining factor (e.g., a student would qualify for free lunch in a household of 4 if the annual income is at or below \$31,980). Likewise, reduced lunch requirements set an upper income limit of 185% of the federal poverty line. Free or reduced lunch status has been used as an indicator of SES that does not require self-report on the part of students or their families (see Ensminger et al., 2000; Huebner, Valois, Paxton, & Drane, 2005; Malecki & Demaray, 2006).

School records indicated whether or not a student had a disability. Additionally, specific categories of disability were coded from school records, including Specific Learning Disability (SLD), Speech/Language Impairment, Emotional Disability, Other Health Impairment (OHI), Autism, and other Low Incidence Disabilities. The disabilities included in the “Low Incidence Disabilities” group included students with intellectual disability, orthopedic impairment, visual impairment, hearing impairment, deafness, multiple disabilities, developmental delay, and traumatic brain injury.

4.2.1. Bullying Participant Behaviors Questionnaire (BPBQ)

The BPBQ (Summers & Demaray, 2008) is a 50-item measure in which students report various behaviors associated with different

Table 1
Distribution of participant characteristics.

Characteristic	<i>f</i>	%
Grade		
4th Grade	1292	12.3
5th Grade	1360	13.0
6th Grade	1408	13.4
7th Grade	1383	13.2
8th Grade	1286	12.3
9th Grade	1028	9.8
10th Grade	1076	10.3
11th Grade	915	8.7
12th Grade	731	7.0
Missing	4	<0.1
Total	10,483	100.0
Grade level		
Elementary	2652	25.3
Middle	4080	38.9
High School	3751	35.8
Total	10,483	100.0
Gender		
Male	5389	51.4
Female	5015	47.8
Missing	79	0.8
Total	10,483	100.0
Ethnicity		
White	6326	60.3
Black	918	8.8
Hispanic	1815	17.3
Asian	692	6.6
American Indian	95	0.9
Pacific Islander	6	<0.1
Two or More Races	626	6.0
Missing	5	<0.1
Total	10,483	100.0
Free/reduced lunch status		
Not Free or Reduced	8124	77.5
Free/Reduced	2094	20.0
Missing	265	2.5
Total	10,483	97.5
IEP status		
No IEP	9324	88.9
IEP	1159	11.1
Total	10,483	100.0
Specific IEP status		
SLD	576	5.5
Speech/Language Impairment	80	0.8
Emotional Disability	72	0.7
Other Health Impairment	270	2.6
Autism	95	0.9
Low incidence disabilities	66	0.6
Total	1159	100.0

roles related to bullying participation. Each participant responded to items pertaining to their own engagement in bullying behavior as well as bullying behaviors that they have witnessed or that have happened to them. The BPBQ consists of five subscales of 10 items each, where items on each subscale ask the respondent to indicate how many times within the past 30 days she or he had engaged in a subscale-relevant behavior. Five ordinal response options are provided for each item: 0 = *Never*, 1 = *1–2 times*, 2 = *3–4 times*, 3 = *5–6 times*, and 4 = *7 or more times*. Subscale scores were computed as the mean of the item scores within each subscale. Subscale scores were computed solely for those students who had completed at least 80% of each set of subscale items. Subscales of this measure include bullying behavior (e.g., “I have made fun of another student”), assistant behavior (e.g., “When someone else threw something at another student, I joined in”), victimization (e.g., “I have been pushed or shoved”), defending behavior (e.g., “I defended someone who was being called mean names”), and outsider behavior (e.g., “I ignored it when someone else pinched or poked another student”).

Psychometric support has been provided for scores obtained from the BPBQ (Demaray et al., 2016), with evidence of a five-factor structure and high internal consistency for each subscale ($\alpha = 0.88, 0.92, 0.94, 0.94, 0.94$ for Bully, Assistant, Victim, Defender, and Outsider subscales, respectively). Evidence of concurrent, convergent, and divergent validity of the scores on the BPBQ also has been demonstrated, with significant and expected correlations among the BPBQ subscales with subscales from the Behavior Assessment System for Children, Second Edition, Self-Report of Personality (Reynolds & Kamphaus, 2004) and the Social Skills Rating

System (Demaray et al., 2016; Gresham & Elliott, 1990).

Similarly, the observed internal consistency estimates for data used in the current study were strong for each of the 10-item Bully, Assistant, Victim, Defender, and Outsider subscales, both for students with a disability ($\alpha = 0.90, 0.90, 0.94, 0.96,$ and 0.95 for the respective subscales) and for students without a disability ($\alpha = 0.90, 0.90, 0.94, 0.96,$ and 0.95 for the respective subscales).

4.3. Procedure

The participating schools included in this study were part of an ongoing district-wide program evaluation, which included collection of data regarding students' academic and social-emotional functioning over the course of multiple years. Some individual schools were administered additional measures that are not included in the current study. Passive parental consent was obtained for all potential participants, with parents being notified of the evaluation and given the opportunity to opt their child out of the study. Assent was also obtained prior to the beginning of the study from all children and adolescents whose parents did not opt their children out of the evaluation. The survey was administered and completed online in the Fall of 2015 using Qualtrics software. Participants completed the self-report survey in one session, during which the presentation order of the included measures was counterbalanced across participants. Self-report data were merged with official school records, with all data being de-identified. No individual student data were accessible by school staff. However, schools received a summary of aggregate responses. Approval from the Institutional Review Board of the authors' institution to use the data for research purposes also was obtained.

4.4. Preliminary analyses

The primary variables for this study included the demographic characteristics of students (i.e., gender, grade level, free or reduced lunch status) and scores from each BPBQ subscale. Preliminary analyses were conducted to explore the distribution of and descriptive data on our primary scores, using SPSS Version 24 and the *BaylorEdPsych* package (Beaujean et al., 2012) in R. Fig. 1 shows the distribution of responses and Table 2 shows descriptive statistics for each of the BPBQ subscales. As indicated, very strong positive skewness/kurtosis was evident for scores from each subscale.

Each of the subscale scores contained cases with missing values: Bullying Behavior ($n = 178, 1.7\%$), Assisting Behavior ($n = 206, 2.0\%$), Being Victimized ($n = 229, 2.2\%$), Defending Behavior ($n = 302, 2.9\%$), and Outsider Behavior ($n = 364, 3.5\%$). Similarly, missing values were evident for gender ($n = 79, 0.8\%$). No other variables had missing values. Little's (1988) test indicated that these values were missing completely at random (MCAR, $\chi^2(72) = 54.40, p = .94$), allowing for the appropriate use of listwise deletion of these cases. Because one of the schools (the smallest school, with $N = 36$ students) did not include any students with a disability, cases from this school were removed. The final analytic data set consisted of $N = 10,278$ students from 20 schools. Table 2 provides descriptive statistics for the BPBQ subscale scores for the analytic sample, and Table 3 provides descriptive statistics for the subscale scores by disability category.

To address the research questions, multilevel modeling was carried out using the *lme4* package in R (Beaujean et al., 2012), where students were clustered within each of the 20 schools. Values of the intraclass correlation coefficient (ICC) and associated design effect (DEFF) for each continuous subscale score were computed and are provided in Table 4. Although observed values of the ICC were low (each < 0.04), the relatively large cluster (i.e., school) sizes resulted in very large design effects (e.g., the clustered nature of the data inflating variances by a factor of nearly 17 for the Defender subscale scores), emphasizing the necessity for multilevel modeling of the data. A multilevel model fit to the data, predicting the continuous Bullying Behavior score from grade level, gender, free or reduced lunch status, and the binary indicator of Disability/IEP status ($0 = No, 1 = Yes$), however, showed severely skewed conditional Level-1 residuals and non-homogenous variation in these conditional residuals (see Fig. 2). This non-normality/heteroscedasticity also was evident for multilevel models fit to the remaining subscale scores. Attempts to remedy the non-homogeneity of variance by modeling the heterogeneity as a function of the predictors did not resolve the issue.

As an alternative, robust approach, we instead considered each continuous outcome as an ordinal variable, where values of these continuous values were recoded as follows: BPBQ subscale scores greater than or equal to 0 but < 1 were recoded as 1, scores greater than or equal to 1 but < 2 were recoded as 2, scores greater than or equal to 2 but < 3 were recoded as 3, and finally, all remaining scores up to and including 4 were recoded as 4. Using these ordinal outcomes, generalized multilevel modeling employing a cumulative logit link function (e.g., Hox, Moerbeek, & van de Schoot, 2017; Raudenbush & Bryk, 2002) was used. Such modeling carries no distributional requirements and is thus robust to the strong non-normality encountered with the data in this study. The *ordinal* package in R (Christensen, 2018) was used to fit these models.

5. Results

5.1. Research Question 1

To address Research Question 1, we carried out a set of generalized multilevel models, where students were clustered within schools and each ordinal BPBQ subscale was predicted by grade level, gender, free or reduced lunch status, and disability status. Table 5 shows the results for these models. As these effects indicate, after controlling for grade level, gender, and free or reduced lunch status, disability status was a statistically significant, positive predictor of assisting behavior ($b = 0.71, p < .001$), victimization ($b = 0.28, p < .001$), and defending behavior ($b = 0.14, p = .04$). Disability status did not significantly predict bullying behavior or outsider behavior. Additionally, control variable effects not directly related to the research question also were observed

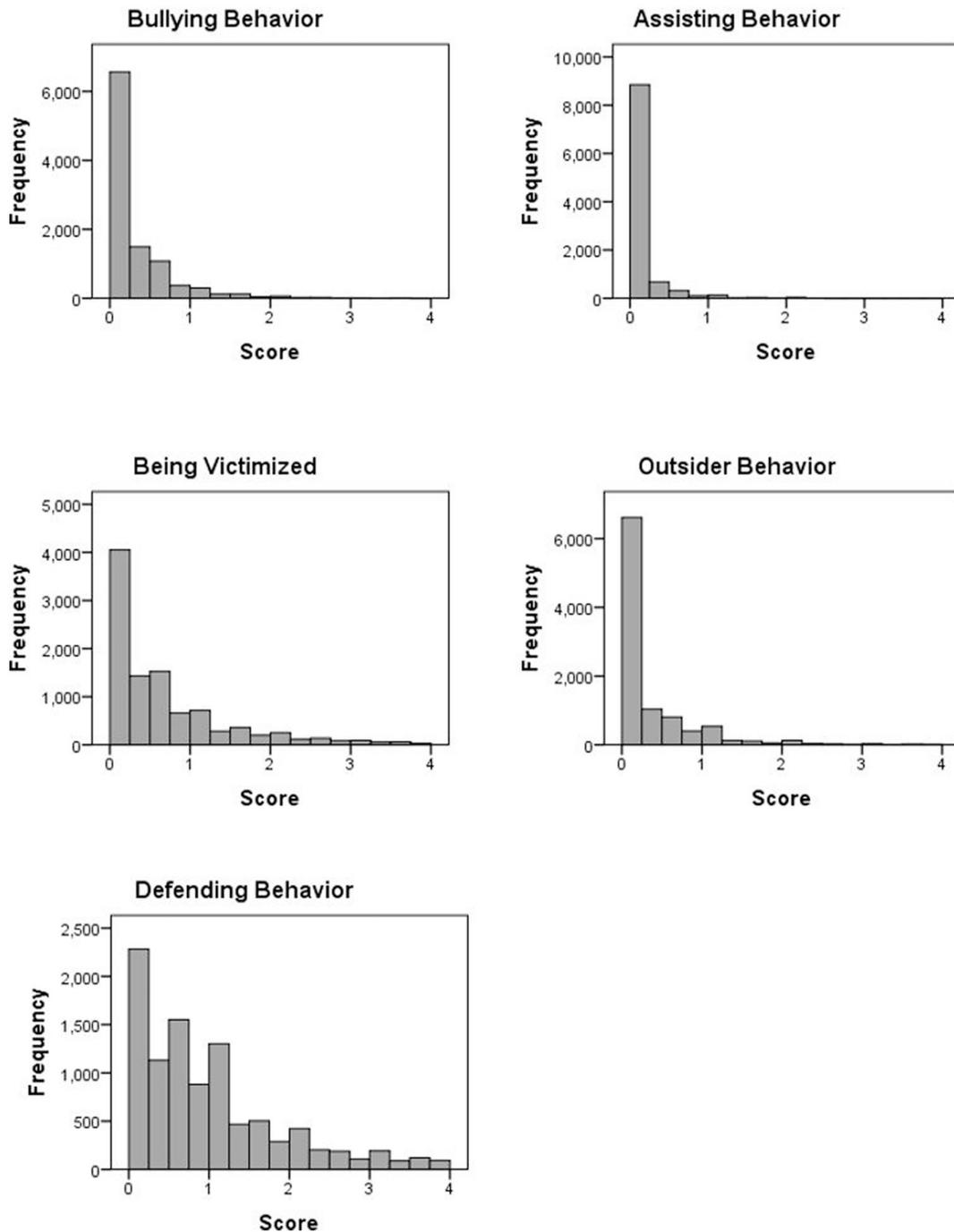


Fig. 1. Distribution of responses for each of the BPBQ subscales.

Table 2

Descriptive statistics for BPBQ subscale score.

Subscale	<i>N</i>	<i>M</i>	<i>Median</i>	<i>SD</i>	<i>Skewness</i>	<i>Kurtosis</i>
Bullying Behavior	10,269	0.30	0.10	0.48	3.47	17.22
Assisting Behavior	10,241	0.13	0.00	0.35	6.28	53.15
Being Victimized	10,218	0.70	0.40	0.87	1.89	3.46
Defending Behavior	10,145	1.06	0.80	1.02	1.33	1.16
Outsider Behavior	10,083	0.35	0.10	0.65	3.20	12.39

Table 3
Descriptive statistics for BPBQ subscale scores by disability category.

Disability categories	Bullying behavior			Assisting behavior			Being victimized			Defending behavior			Outsider behavior		
	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>
SLD	548	0.32	0.57	532	1.20	0.38	539	0.77	0.93	532	1.20	1.16	524	0.35	0.70
Speech/Lang. Disability	79	0.18	0.25	79	1.09	0.16	79	0.78	1.00	79	1.09	1.12	78	0.28	0.38
Emotional Disability	66	0.47	0.62	64	1.14	0.49	65	1.13	1.21	64	1.14	1.17	63	0.58	1.06
Other Health Impairment	263	0.34	0.59	259	1.20	0.50	262	0.92	1.06	259	1.20	1.15	257	0.39	0.79
Autism	93	0.20	0.37	92	0.78	0.26	93	0.70	0.89	92	0.78	1.02	91	0.23	0.46
Low Incidence Disability	62	0.29	0.58	59	1.12	0.48	61	0.70	0.91	59	1.12	1.20	58	0.30	0.53
(Total Disability)	1111	0.31	0.55	1085	1.15	0.41	1099	0.82	0.99	1085	1.15	1.15	1071	0.35	0.71
No Disability	9158	0.30	0.48	9060	1.04	0.34	9119	0.69	0.86	9060	1.04	1.01	9012	0.35	0.64
Total	10,269	0.30	0.48	10,145	1.06	0.35	10,218	0.70	0.87	10,145	1.06	1.02	10,083	0.35	0.65

Table 4
Values of the Intraclass Correlation Coefficient (ICC) and Design Effect (DEFF) for each continuous subscale.

BPBQ Subscale	ICC	DEFF
Bully	0.02	14.39
Assistant	0.01	3.63
Victim	0.01	7.37
Defender	0.03	16.72
Outsider	0.02	10.70

Note. ICC = Intraclass Correlation Coefficient, DEFF = Design Effect.

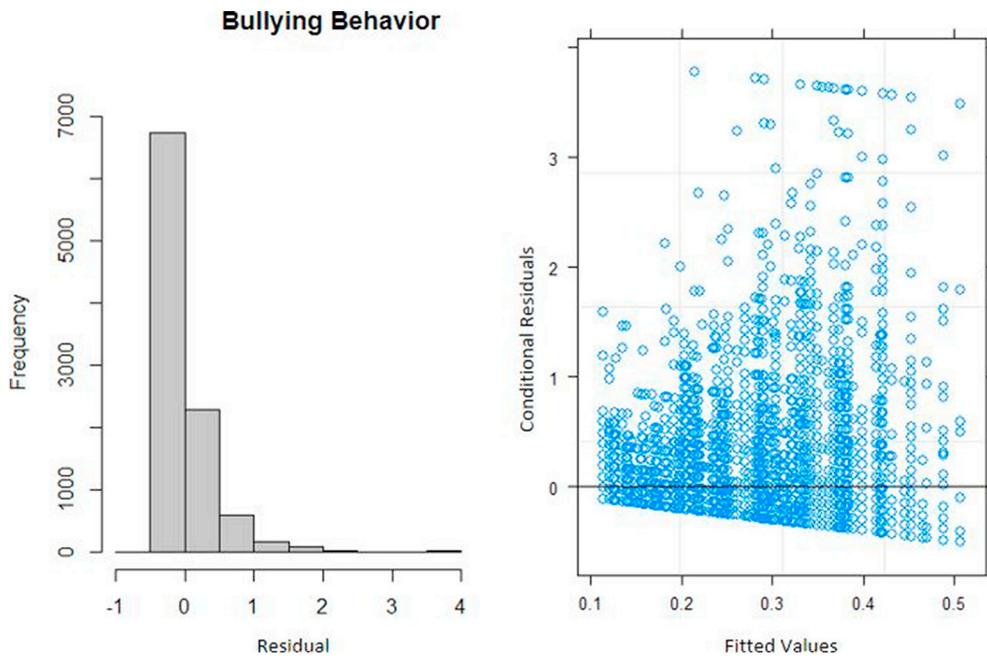


Fig. 2. The distribution of conditional Level-1 residuals and scatterplot of the conditional residuals on the fitted values of the regression model predicting Bullying Behavior BPBQ subscale scores from grade level, gender, free or reduced lunch status, and disability status.

in these models. Specifically, compared to children in elementary school, children in middle school and high school showed significantly higher levels of bullying, assisting, and outsider behavior, and significantly lower levels of defending behavior. Compared to males, female students showed significantly lower levels of bullying, assisting, and outsider behavior. Compared to their peers without free or reduced lunch status, those students with free or reduced lunch status showed significantly higher levels of bullying, assisting, victimization, and defending.

Table 5

Fixed effects for generalized multilevel linear models predicting BPBQ subscale scores from grade level, gender, free or reduced lunch status, and disability status.

Outcome	Effect	<i>b</i>	Std. error	<i>z</i>
Bullying Behavior	Grade level (middle school)	0.96	0.22	4.42***
	Grade level (high school)	1.41	0.27	5.19***
	Gender (female)	−0.56	0.09	−6.23***
	Free/reduced lunch status (yes)	0.35	0.10	3.43***
	Disability Status (has IEP)	0.14	0.13	1.10
Assisting Behavior	Grade level (middle school)	0.72	0.25	2.81**
	Grade level (high school)	0.93	0.28	3.25**
	Gender (female)	−1.35	0.18	−7.56***
	Free/reduced lunch status (yes)	0.56	0.16	3.56***
	Disability Status (has IEP)	0.71	0.17	4.09***
Victimization	Grade level (middle school)	0.02	0.14	0.16
	Grade level (high school)	−0.13	0.19	−0.68
	Gender (female)	0.04	0.05	0.78
	Free/reduced lunch status (yes)	0.15	0.06	2.40*
	Disability Status (has IEP)	0.28	0.08	3.68***
Defending Behavior	Grade level (middle school)	−0.23	0.09	−2.53*
	Grade level (high school)	−0.82	0.12	−6.85***
	Gender (female)	0.24	0.04	5.79***
	Free/reduced lunch status (yes)	0.23	0.05	4.45***
	Disability Status (has IEP)	0.14	0.07	2.04*
Outsider Behavior	Grade level (middle school)	0.94	0.14	6.84***
	Grade level (high school)	0.70	0.17	4.23***
	Gender (female)	−0.53	0.08	−7.01***
	Free/reduced lunch status (yes)	0.15	0.09	1.67
	Disability Status (has IEP)	0.08	0.11	0.74

Reference group for grade level is elementary school, reference group for female is male, reference groups for free or reduced lunch and disability status are those without these statuses.

* $p < .05$.

** $p < .01$.

*** $p < .001$.

5.2. Research Question 2

We next considered a set of generalized multilevel models that employed the same set of predictors, but additionally included moderating effects of grade level, gender, and free or reduced lunch status on the association between disability status and each ordinal BPBQ outcome (see Table 6). Results showed statistically significant, negative moderating effects of high school grade level on the relationship between disability status and bullying behavior and assisting behavior. Here, the slight positive association between disability status and bullying or assisting behavior in elementary school changed into a negative association in high school (i.e., high school children with a disability showed lower levels of these behaviors than their peers without a disability). In contrast, high school grade level showed a significant positive moderating effect on the association between disability status and Defending Behavior. That is, when compared to elementary school, where those with a disability showed lower levels of defending than their peers without a disability, high school children with a disability showed higher levels of this behavior than their peers. Free or reduced lunch status had a significant positive moderating effect on the association between disability status and bullying behavior and outsider behavior. Although children with a disability showed higher levels of these behaviors than their peers without a disability, this difference was exacerbated when the child had free or reduced lunch status. Lastly, gender showed a statistically significant and positive moderating effect on the association between disability status and victimization and outsider behavior. Although male students with a disability showed similar levels of victimization to males without a disability, females with a disability showed higher levels of victimization than females without a disability. Similarly, male students with and without a disability showed similar levels of outsider behavior, but female students with a disability showed higher levels of outsider behavior than females without a disability.

Additionally, as an exploratory analysis, we examined the two disability categories that had adequate cell sample sizes: specific learning disability (SLD; $n = 576$) and other health impairment (OHI; $n = 270$) to assess how grade level, gender, and free or reduced lunch status moderated the relationship between the presence of these disabilities and each bullying outcome. Results showed grade level significantly moderated the effects of both SLD ($b = -2.57, p < .001$) and OHI ($b = -2.11, p < .05$) on assisting behavior, with the positive effects of these disabilities in elementary school reversing to become negative effects in high school. Specifically, elementary school students with SLD or OHI showed higher levels of assisting than their peers without disabilities, but high school students with SLD or OHI showed lower levels of bullying than their peers without disabilities. High school grade status had a similar negative moderating effect on the relationship between OHI status and bullying behavior ($b = -1.48, p < .05$). That is, elementary school students with OHI showed higher levels of bullying than their peers without disabilities, but in high school, students with OHI showed lower levels of bullying than their peers without disabilities. Interestingly, high school grade status had a positive moderating

Table 6

Fixed effects for generalized multilevel linear models predicting BPBQ subscale scores from grade level, gender, free or reduced lunch status, disability status, and moderators.

Outcome	Effect	<i>b</i>	Std. error	<i>z</i>	
Bullying Behavior	Grade level (middle school)	0.97	0.23	4.24***	
	Grade level (high school)	1.53	0.28	5.48***	
	Gender (female)	−0.59	0.09	−6.25***	
	Free/reduced lunch status (yes)	0.23	0.12	2.00	
	Disability Status (has IEP)	0.14	0.39	0.36	
	Disability Status × Grade level (middle school)	−0.03	0.39	−0.08	
	Disability Status × Grade level (high school)	−0.95	0.41	−2.31*	
	Disability Status × Gender	0.38	0.28	1.36	
	Disability Status × Free/reduced lunch status	0.68	0.27	2.54*	
	Assisting Behavior	Grade level (middle school)	0.86	0.31	2.82**
Assisting Behavior	Grade level (high school)	1.30	0.33	3.99***	
	Gender (female)	−1.50	0.20	−7.35***	
	Free/reduced lunch status (yes)	0.37	0.19	1.96	
	Disability Status (has IEP)	1.04	0.45	2.31*	
	Disability Status × Grade level (middle school)	−0.43	0.46	−0.93	
	Disability Status × Grade level (high school)	−1.71	0.53	−3.20**	
	Disability Status × Gender	0.80	0.42	1.90	
	Disability Status × Free/reduced lunch status	0.66	0.36	1.85	
	Victimization	Grade level (middle school)	−0.02	0.14	−0.13
		Grade level (high school)	−0.12	0.19	−0.65
Gender (female)		−0.01	0.05	−0.25	
Free/reduced lunch status (yes)		0.12	0.07	1.79	
Disability Status (has IEP)		−0.10	0.18	−0.56	
Disability Status × Grade level (middle school)		0.34	0.19	1.80	
Disability Status × Grade level (high school)		−0.04	0.20	−0.19	
Disability Status × Gender		0.47	0.15	3.08**	
Disability Status × Free/reduced lunch status		0.16	0.16	1.01	
Defending Behavior		Grade level (middle school)	−0.27	0.09	−2.84**
	Grade level (high school)	−0.88	0.13	−6.96***	
	Gender (female)	0.22	0.04	4.96***	
	Free/reduced lunch status (yes)	0.25	0.06	4.44***	
	Disability Status (has IEP)	−0.24	0.15	−1.58	
	Disability Status × Grade level (middle school)	0.40	0.16	2.47*	
	Disability Status × Grade level (high school)	0.53	0.18	2.96**	
	Disability Status × Gender	0.22	0.14	1.62	
	Disability Status × Free/reduced lunch status	−0.11	0.14	−0.77	
	Outsider Behavior	Grade level (middle school)	1.01	0.15	6.97***
Grade level (high school)		0.76	0.17	4.39***	
Gender (female)		−0.59	0.08	−7.34***	
Free/reduced lunch status (yes)		0.06	0.10	0.60	
Disability Status (has IEP)		0.09	0.30	0.29	
Disability Status × Grade level (middle school)		−0.50	0.31	−1.61	
Disability Status × Grade level (high school)		−0.39	0.33	−1.20	
Disability Status × Gender		0.55	0.24	2.33*	
Disability Status × Free/reduced lunch status		0.52	0.23	2.24*	

Reference group for grade level is elementary school, reference group for female is male, reference groups for free or reduced lunch and disability status are those without these statuses.

* $p < .05$.

** $p < .01$.

*** $p < .001$.

effect on the relationship between SLD and defending behavior ($b = -0.79, p < .01$). Middle school status had a significant positive moderating effect on the relationship between SLD status and both victimization ($b = 0.73, p < .05$) and defending ($b = 0.77, p < .01$), where the negative effect of SLD on victimization among elementary school children became a positive effect in middle school, and a positive effect in middle and high school for defending. Specifically, middle school students with SLD showed higher levels of victimization and defending than their peers without disabilities, but elementary school students with SLD showed lower levels of victimization and defending than their peers without disabilities, with the same pattern replicating for defending behavior in high school. Lastly, significant moderating effects of gender were observed, where the negative effects of SLD on both victimization ($b = 0.65, p < .01$) and outsider behavior ($b = 0.68, p < .05$) among males became positive effects for females. That is, female students with SLD showed higher levels of victimization and defending than their female peers without disabilities, but male students with SLD showed lower levels of victimization and defending than their male peers without disabilities.

Table 7

Fixed effects for generalized multilevel linear models predicting BPBQ subscale scores from grade level, gender, free or reduced lunch status, and specific disability categories.

Outcome	Effect	<i>b</i>	Std. error	<i>z</i>
Bullying Behavior	Grade level (middle school)	0.95	0.22	4.34**
	Grade level (high school)	1.40	0.27	5.12***
	Gender (female)	-0.56	0.09	-6.27***
	Free/reduced lunch (yes)	0.35	0.10	3.39**
	SLD	0.14	0.18	0.81
	Speech Disability	-1.29	1.01	-1.28
	Emotional Disability	0.49	0.44	1.13
	Other Health Impairment	0.44	0.23	1.88
	Autism	-0.83	0.59	-1.40
	Low Incidence Disability	0.32	0.48	0.68
Assisting Behavior	Grade level (middle school)	0.70	0.26	2.71**
	Grade level (high school)	0.94	0.29	3.18**
	Gender (female)	-1.34	0.18	-7.51***
	Free/reduced lunch (yes)	0.57	0.16	3.63***
	SLD	0.41	0.26	1.56
	Speech Disability	-19.34	121.08	-0.16
	Emotional Disability	1.52	0.44	3.41***
	Other Health Impairment	1.30	0.26	5.03***
	Autism	-0.26	0.72	-0.36
	Low Incidence Disability	0.89	0.61	1.46
Victimization	Grade level (middle school)	0.02	0.14	0.15
	Grade level (high school)	-0.13	0.19	-0.67
	Gender (female)	0.04	0.05	0.88
	Free/reduced lunch (yes)	0.15	0.06	2.49*
	SLD	0.15	0.11	1.41
	Speech Disability	0.04	0.28	0.15
	Emotional Disability	0.75	0.27	2.84**
	Other Health Impairment	0.53	0.14	3.86***
	Autism	0.17	0.24	0.71
	Low Incidence Disability	0.11	0.31	0.35
Defending Behavior	Grade level (middle school)	-0.23	0.09	-2.56*
	Grade level (high school)	-0.83	0.12	-6.80***
	Gender (female)	0.23	0.04	5.61***
	Free/reduced lunch (yes)	0.22	0.05	4.30***
	SLD	0.24	0.09	2.60**
	Speech Disability	-0.20	0.24	-0.84
	Emotional Disability	-0.01	0.28	-0.04
	Other Health Impairment	0.27	0.13	2.15*
	Autism	-0.58	0.26	-2.26*
	Low Incidence Disability	0.16	0.28	0.57
Outsider Behavior	Grade level (middle school)	0.94	0.14	6.77***
	Grade level (high school)	0.70	0.17	4.17***
	Gender (female)	-0.54	0.08	-7.10***
	Free/reduced lunch (yes)	0.14	0.09	1.47
	SLD	0.14	0.15	0.87
	Speech Disability	-0.16	0.47	-0.33
	Emotional Disability	0.77	0.35	2.18*
	Other Health Impairment	0.14	0.22	0.65
	Autism	-1.20	0.59	-2.03*
	Low Incidence Disability	0.12	0.44	0.28

Reference category for disability categories is “No IEP or no disability.” Reference group for grade level is elementary school, reference group for female is male, reference groups for free or reduced lunch and disability status are those without these statuses.

* *p* < .05.

** *p* < .01.

*** *p* < .001.

5.3. Research Question 3

To address Research Question 3, we fitted generalized multilevel linear models, employing a cumulative logit link function, that predicted the ordinal BPBQ subscale outcomes from the same set of variables (i.e., grade level, gender, free or reduced lunch status, and disability status), but considered each of the specific disability categories, coding each as a binary predictor (see Table 7). As these effects indicate, compared to their peers without disabilities, students with Emotional Disability showed greater assisting behavior, victimization, and outsider behavior, whereas children with other health impairments showed significantly greater assisting behavior, victimization, and defending behavior. Students with autism showed significantly less defending behavior and

Table 8

Fixed effects for generalized multilevel linear models predicting BPBQ subscale scores from grade level, gender, percent IEP, percent low-income, and school enrollment.

Outcome	Effect	Level	<i>b</i>	Std. error	<i>z</i>
Bullying Behavior	Grade level (middle school)	1	0.52	0.31	1.69
	Grade level (high school)	1	−0.91	1.42	−0.64
	Gender (female)	1	−0.57	0.09	−6.49***
	Percent IEP	2	0.06	0.08	0.83
	Percent low-income	2	0.00	0.02	−0.06
	Enrollment	2	0.11	0.07	1.57
Assisting Behavior	Grade level (middle school)	1	0.00	0.34	0.00
	Grade level (high school)	1	−3.17	1.29	−2.45*
	Gender (female)	1	−1.37	0.17	−7.92***
	Percent IEP	2	0.08	0.08	1.06
	Percent low-income	2	−0.01	0.02	−0.49
	Enrollment	2	0.19	0.06	3.07**
Victimization	Grade level (middle school)	1	0.10	0.21	0.50
	Grade level (high school)	1	0.19	1.10	0.17
	Gender (female)	1	0.02	0.05	0.52
	Percent IEP	2	−0.02	0.05	−0.46
	Percent low-income	2	0.02	0.01	1.98*
	Enrollment	2	−0.01	0.05	−0.25
Defending Behavior	Grade level (middle school)	1	−0.04	0.12	−0.34
	Grade level (high school)	1	0.03	0.61	0.06
	Gender (female)	1	0.23	0.04	5.62***
	Percent IEP	2	−0.03	0.03	−1.09
	Percent low-income	2	0.02	0.01	2.55**
	Enrollment	2	−0.04	0.03	−1.29
Outsider Behavior	Grade level (middle school)	1	0.47	0.16	3.02**
	Grade level (high school)	1	−1.67	0.62	−2.70**
	Gender (female)	1	−0.53	0.08	−7.13***
	Percent IEP	2	0.08	0.04	1.97*
	Percent low-income	2	−0.02	0.01	−2.29*
	Enrollment	2	0.11	0.03	3.68***

Level 1 is student-level, level 2 is school-level. Reference group for grade level is elementary school, reference group for female is male, reference groups for free or reduced lunch and IEP status are those without these statuses.

* $p < .05$.

** $p < .01$.

*** $p < .001$.

outsider behavior than their peers without disabilities, whereas students classified as SLD showed significantly more defending behavior.

5.4. Exploratory analyses

Finally, as a follow-up analysis not directly addressing a stated research question or hypothesis, we examined how specific school-level variables related to each behavior by fitting a series of generalized multilevel intercepts-as-outcomes models, where each of the ordinal BPBQ subscale scores served as a dependent variable; grade level and gender served as the student-level (level-1) control variables; and the percentage of students with a disability, the percentage of students receiving free or reduced lunch prices in the school, and the total school enrollment served as the school-level (level-2) predictors of interest. Level-1 predictors were grand-mean centered. Table 8 shows the level-1 and level-2 fixed effects for the models fit to each outcome. As indicated, school enrollment (noted and analyzed in hundreds of students, e.g. a school population of 1000 = 10 in the analyses) was a statistically significant, positive predictor of both assisting behavior and outsider behavior, whereas the percentage of low-income children in a school was a statistically significant, positive predictor of victimization and defending behavior. The percentage of students receiving free or reduced lunch prices also was a significant negative predictor of outsider behavior.

6. Discussion

Research suggests students with disabilities are vulnerable to peer victimization, being bullied at nearly double the rate of students without disabilities (Bear et al., 2015; Blake et al., 2012; Rose, Stormont, et al., 2015). Social stigmas regarding individuals with disabilities may influence the bullying rates among youth with disabilities (Earnshaw et al., 2018). Poverty, another stigmatizing factor, may also interact with disability in relation to bullying behaviors. Prior research has not investigated the involvement of youth with disabilities in a wider variety of bullying-related behaviors, including bystander behavior. Furthermore, prior research has not investigated how other demographic risk factors, including gender, grade level, and free and reduced lunch status (as an indicator of SES) moderates the association of disability status with bullying-related behaviors. The goals of this study were to use a stigma-

based bullying lens (Earnshaw et al., 2018) to investigate (a) how disability status was related to bullying-related behaviors when controlling for gender, grade level, and free or reduced lunch status; (b) how gender, grade level, and free or reduced lunch status moderated the associations between disability status and bullying-related behaviors; and (c) how classification in specific disability categories was associated with bullying-related behaviors.

6.1. Association of disability and bullying-related behaviors

This study found that—after controlling for the demographic factors of grade level, gender, and free or reduced lunch status—students with a disability experienced more victimization than students without a disability. This finding is consistent with prior research (Eisenberg et al., 2015; Rose & Espelage, 2012; Rose & Gage, 2017) and a stigma-based bullying framework (Earnshaw et al., 2018), which suggests that societal, structural, and interpersonal factors may lead individuals with disabilities to have less social power and be targeted for victimization.

Although prior work also has found that students with disabilities engage in more perpetration of bullying (Carter & Spencer, 2006; Rose & Espelage, 2012), this finding was not replicated in this study. However, this study found that after controlling for other demographic factors, students with disabilities engaged in higher levels of assisting bullying behaviors. Given this study is one of very few that distinguish between bullying and assisting bullying behaviors, it may be that prior studies have conflated the constructs of bullying and assisting behaviors and that, in actuality, students with disabilities play more of an assisting role when others are engaging in bullying perpetration. That is, students with disabilities may not be the “ringleader” bully, but they may join in or laugh when someone else starts the bullying. Future research should try to replicate this finding to determine if youth with disabilities primarily perpetrate bullying behaviors in an assisting role, as this may help guide interventions for students with disabilities.

Students with disabilities in this study also engaged in higher levels of prosocial bystander behaviors as indicated by higher reported levels of defending victims of bullying. This finding has not been reported in prior research. Several hypotheses could explain this finding. It may be that students with disabilities observe more bullying and thus have more opportunities to defend others. Alternatively, students with disabilities may be less worried about the social consequences of defending and take the risk to defend others. Given their enhanced victimization rates, students with disabilities may sympathize with victims and thus be motivated to act in the situation by defending. More research is needed on the association between disability status and defending behaviors.

6.2. Gender, grade level, and SES associations with bullying-related behaviors

Additionally, a number of demographic characteristics were related to bully role behaviors. Regarding gender, this study found that males reported significantly higher levels of bullying and assisting behaviors, a finding that has been documented in prior investigations (Espelage & Holt, 2001; Nansel et al., 2001; Seals & Young, 2003). Males also reported significantly higher levels of outsider behavior. Prior research has not examined gender differences in outsider behavior and more work is needed in this area. Although prior research has found gender differences in defending (Cook et al., 2010; Jenkins & Nickerson, 2017; Ma, 2002; Monks et al., 2002), no differences in defending behavior were found in the current study. Finally, no gender differences were found in victimization scores.

Regarding grade level, when compared to those in elementary school, children in middle school and high school showed significantly higher levels of bullying, assisting, and outsider behavior, and significantly lower levels of defending behavior. Prior research has often found that middle school students are more involved with bullying perpetration than elementary and high school students (Craig et al., 2009; Nansel et al., 2001; Siann et al., 1994; Smith & Gross, 2006; Williams & Guerra, 2007). However, in this study both bullying and assisting with bullying were significantly higher in middle and high school in comparison to elementary school. Prior research has found that younger students are more likely to defend (Caravita et al., 2009; Gini et al., 2007; Pozzoli & Gini, 2010), and similar results were found in this study, with middle and high school students reporting significantly lower levels of defending than elementary school students. The higher level of defending among elementary students was in agreement with the finding of the lower levels of outsider (i.e., ignoring) behavior among elementary students in comparison to students in middle and high school. Overall, elementary students were more likely to defend bullying and less likely to ignore bullying in comparison to both middle and high school students, who were less likely to defend bullying and more likely to ignore bullying.

Also consistent with a stigma-based bullying framework (Earnshaw et al., 2018), compared to their peers without free or reduced lunch, students qualifying for free or reduced lunch showed significantly higher levels of bullying, assisting, victimization, and defending. These findings are consistent with those from Tippet and Wolke's (2014) meta-analysis where it was found that victims and bully-victims were more likely to be from a lower SES home. The fact that youth from lower-SES homes engaged in more defending behavior is interesting and could potentially be due to the fact that these youth observe more bullying and have more opportunities to defend. More research is needed pertaining to this finding.

6.3. Moderating role of gender, grade level, and SES

In a second aim of this study, we examined how the demographic factors (grade level, gender, and free or reduced lunch prices) moderated the effects of disability status on bully role behaviors. Several interesting results emerged. Regarding gender, although male students with a disability did not differ in victimization from their male peers without a disability, female students with a disability showed higher levels of victimization than did females without a disability. Thus, females with special needs are at an

increased risk of victimization, but for males, disability status may not be a risk factor for more victimization. Additionally, males with a disability did not differ in outsider behavior from males without a disability, whereas females with a disability reported higher levels of outsider behavior than females without a disability. This is an interesting finding that suggests, among females, that those with a disability are more likely to report that they ignore bullying (i.e., report higher outsider behavior) than females without a disability. For children without a disability, males are more likely to show outsider behavior than females, but this gender discrepancy disappears for children with a disability. Overall, it is interesting that for males, disability status was less of a risk factor than for females regarding more involvement in bullying behaviors.

Regarding grade level as a moderator, there were several significant findings. First, in elementary school, the association between disability status and bullying or assisting behaviors was either not present (for bullying behavior) or small (for assisting behavior, with more assisting behavior for those with a disability). However, the effect of having a disability became negative in high school, with less bullying or assisting evident among those with a disability compared to their peers without a disability. This is an interesting and optimistic finding, and suggests that although students with disabilities engage in more bullying behavior than students without disabilities in elementary school, they actually are bullying or assisting bullies to a lower extent than students without a disability in high school. Students with special needs or those being served in special education engage in less bullying or assisting as they progress to high school. This is a positive finding and may be a result of educational intervention or child and adolescent development.

Another positive developmental finding was that when compared to elementary school where students with a disability show lower levels of defending than their peers without a disability, high school students with a disability show higher levels of defending than their peers without a disability. It appears that in elementary schools, students with disabilities are struggling more than their peers without a disability with both higher levels of general bullying perpetration (i.e., bullying and assisting) and lower levels of defending, but by high school they report less perpetration and more defending than their peers without a disability.

Finally, SES had a significant positive moderating effect on the association between disability status and bullying and outsider behaviors. Although children with a disability showed higher levels of bullying and outsider behavior than their peers without a disability, this difference was exacerbated when the child came from a low-SES family (i.e., free or reduced lunch). That is, the joint characteristics of having a disability and being from a low SES household are especially problematic for increasing the likelihood of engaging in the perpetration of bullying behaviors or ignoring bullying when the child sees it. Students with a disability who are from families that are struggling financially may have less tangible and social resources from which to draw, which could contribute to more involvement in bullying behavior and less knowledge and skills to intervene when they see bullying.

The results of the moderation analyses highlight that disability status may interact with other demographic variables—such as gender, grade level, and SES—to create cumulative stigmas that may result in higher risk for involvement in bullying behaviors. These results also suggest in some cases, disability status is no longer a risk factor for more bullying involvement when other demographic variables are considered (e.g., for males). Certainly, other characteristics may be considered as significant risk factors for bullying behavior or victimization. The stigma-based bullying framework (Earnshaw et al., 2018) and the related social dominance theory (Ho et al., 2012) provide some understanding for the impact of societal and structural biases that could lead to higher risk for some groups. Research has considered outcomes of bullying based on an individual's weight status (Eisenberg et al., 2015; Janssen et al., 2004; Puhl, Peterson, & Luedicke, 2013) and LGBT identification (Birkett, Espelage, & Koenig, 2009; Espelage & Swearer, 2008; Kosciw, Greytak, & Diaz, 2009; Robinson & Espelage, 2012; Robinson, Espelage, & Rivers, 2013), with specific risks of PTSD, suicidal ideation, cybervictimization, and being threatened or injured with a weapon on school property being reported by LGBT youth (Beckerman & Auerbach, 2014; Human Rights Campaign, 2013; Human Rights Watch, 2016; Kann et al., 2016; Robinson & Espelage, 2011; Russell, Ryan, Toomey, Diaz, & Sanchez, 2011). Although the impact of these risk factors within and outside of the schools is recognized, future research should include these risk factors with other demographic variables to aid in determining how risk factors interact to influence potential for bullying involvement.

6.4. Specific disability categories and associations with bullying-related behaviors

Lastly, we considered specific disability categories in their association with bully participant behaviors. Youth in this study were categorized as having learning disabilities, speech/language disabilities, emotional disabilities, other health impairment, autism, and low incidence disabilities. We found no differences in bully role behaviors for youth with speech/language or low incidence disabilities compared to students without disabilities. It was found that when compared to their peers without disabilities, students with an emotional disability reported greater assisting behavior, experienced more victimization, and demonstrated more outsider behavior. This finding supports prior research, which has found that students with emotional disabilities engage in more bullying and also experience more victimization (Bear et al., 2015; Carter & Spencer, 2006; Rose & Espelage, 2012). Given the nature of their difficulties, it is not surprising that youth with emotional disabilities may be more involved in perpetration via assisting in bullying and experiencing victimization.

Compared to their peers without disabilities, youth in this study with other health impairment showed significantly greater assisting behavior, experienced more victimization, and engaged in more defending behavior. The category of other health impairment is broad, however, and many youths with this label likely have ADHD. Research has found that youth with ADHD engage in more bullying (Carter & Spencer, 2006; Rose & Espelage, 2012), which is consistent with results from this study, in which these youth engaged in more assisting. Prior research also has found that youth with ADHD experience victimization at higher rates (Wiener & Mak, 2009).

Students with autism, compared to their peers without disabilities, showed significantly less defending and outsider behavior.

Although this study did not find differences between youth with autism and those without disabilities in rates of victimization, prior research has found conflicting information about rates of victimization for youth with autism. Some research has found higher rates, whereas other research has found lower rates of victimization among students with disabilities when compared to students without disabilities (Baumeister et al., 2008; Humphrey & Hebron, 2015; Rose, Stormont, et al., 2015). However, prior research has not investigated the bystander roles of youth with autism. More research is needed on how youth with autism engage in defending and outsider behaviors.

Additionally, youth with learning disabilities showed significantly more defending behavior than youth without disabilities. Again, this finding previously has not been reported in the literature. Research has reported higher rates of victimization among youth with learning disabilities (Baumeister et al., 2008; Rose, Stormont, et al., 2015), but has not investigated defending behavior in this population. This is an optimistic finding that needs more examination.

6.5. School-level variables associated with bullying-related behaviors

In an exploratory analysis, we examined several school-level variables including the percentage of students with a disability, the percentage of low-income students in the school, and the total school enrollment. School size was significantly and positively associated with both assisting behavior and outsider behavior. In previous research, school size has only been examined as a correlate with bullying and victimization role behaviors (Bowes et al., 2009), so this study expands the literature in finding that the larger the school, the greater extent of students' bullying and ignoring bullying when they see it. Another finding was that the percentage of low-income children in a school was significantly and positively associated with victimization and defending behavior and significantly and negatively associated with outsider behavior. Prior research has found that schools with a high concentration of student poverty are associated with more bullying involvement (Bradshaw et al., 2009; Due et al., 2009). Results from this study suggest that higher concentrations of student poverty are associated with more victimization and defending, but that lower concentrations of poverty are associated with higher outsider (ignoring) behavior. These analyses are exploratory but interesting. Educators are encouraged to consider school-level demographic factors and how these factors may relate to school climate and overall likelihood of bullying involvement among their students.

6.6. Strengths, limitations, and future research

The large and diverse sample was a strength for the current study, allowing an examination of individual disability categories in relation to bullying behaviors. The sample also allowed for an investigation of a large span of elementary through high school-aged students, male and female students, students with varied socioeconomic backgrounds, and how these factors moderated the association of disability status with bullying behaviors. The analytical technique used was also a strength, allowing for a robust and unique approach to analyzing bully role behavior across multiple schools.

The most notable limitation of the study is that, despite having over 10,000 participants, we were only able to examine interaction effects of two specific disability categories (i.e., SLD and OHI) with other demographic variables. Given the interesting observed moderation findings between disability status (students with and without a disability) and these demographic variables, it is important to seek an even larger sample so that analyses involving interaction effects with additional specific disability categories would be possible. It would also be important for further research to assess the measurement invariance of the BPBQ across specific disability categories – this large task goes beyond the scope of the current study and would need a larger sample of youth within each disability category. A final limitation involves having students with disabilities from fourth grade through twelfth grade completing self-report measures of peer interactions. Although school staff ensured that any youth completing the measure was able to do so, the downside was that students with more significant disabilities may have been unable to complete the measures and thus be part of the sample. A schoolwide, multi-informant approach to collecting data about bullying behavior could be utilized to ensure the reliability of student self-report data. However, it may be difficult to match responses for incidents of bullying, as not all students and staff may witness this behavior.

6.7. Implications

The study results provide some initial guidance for prevention and intervention efforts for schools. First, disability status was a statistically significant, positive predictor of assisting, victimization, and defending behavior. Given that students with disabilities were joining in on, but not necessarily leading bullying behavior, strategies to help students with disabilities resist joining in bullying may be useful and appropriate. Thus, it may be helpful for schools to focus on building skills with youth with disabilities to (a) not join in and assist with bullying they may see, (b) cope with victimization, and (c) make sure they are appropriately defending and that their defending strategies are not increasing their victimization.

Regarding grade level, prevention and intervention efforts should continue with middle and high school age youth, as rates of bullying, assisting, defending, and outsider behavior were all higher as compared to later elementary age youth. The focus on prevention and intervention efforts should be on creating climates that reduce bullying behavior in general and shaping defending behavior to be most helpful. Bystander interventions at the older grade levels show promise, with meta-analytic research demonstrating that bystander interventions are more effective at the high school level than middle school or elementary school (Polanin, Espelage, & Pigott, 2012).

Results from the current study suggest that elementary intervention should focus on youth with disabilities as these individuals

engage in more bullying and assisting than same-aged peers without disabilities. Additionally, elementary youth with disabilities engaged in less defending than their peers without disabilities. Prevention and intervention efforts targeting elementary youth with disabilities may reduce overall involvement in bullying related behaviors among this subgroup.

Additionally, males may be a group in need of intervention, given they reported higher levels of bullying, assisting, and outsider behavior than females. It is particularly notable that disability status did not serve as an additional risk factor for more bullying involvement for males. Little work has been done on specialized interventions for males, but at least one study (e.g., Berry & Hunt, 2009) has indicated that adolescent boys who have anxiety symptoms may benefit from individual cognitive-behavioral focused intervention. However, for females with a disability, there were higher reports of victimization and outsider behavior than for females without a disability. Thus, females with disabilities may be an important group to teach strategies for coping with victimization, as well as providing support when victimization occurs.

Lastly, youth from low SES backgrounds reported significantly higher levels of bullying, assisting, victimization, and defending than youth from higher SES backgrounds and having a disability exacerbated this association for bullying and outsider behaviors. Thus, youth who have both a disability and are eligible for free or reduced lunch may be a high-risk group where intervention efforts may be focused.

Overall, the data suggest that having multiple stigma-associated factors put students at higher risk for bullying involvement and more in need of protection and intervention. However, more work is needed to direct targeted intervention efforts. There is very little research on school-based bullying intervention efforts specifically focused on youth with disabilities. In fact, the National Academies of Sciences, Engineering, and Medicine (NASEM, 2016) reported that most bullying programs lack specific intervention components for youth with disabilities. Several federal agencies have suggested that a priority be placed on program evaluations of interventions targeting stigma and bias-based bullying, including bullying of individuals with disabilities, those living in poverty, and LGBT youth (NASEM, 2016).

Finally, future research should explore methods to allow the fullest participation of individuals with disabilities in self-report research. In addition, future work could explore the potential moderating effects of other known groups that are at risk for stigma and bias-based bullying such as LGBT or students racial or ethnic minority status within a school population. Future research may want to better understand defending behavior by clarifying if the behavior was viewed by peers as positive or negative, thus better understanding the ramifications of defending behavior. For example, if youth are engaging in defending behavior, is this primarily viewed positively, or is it actually hurting their social status or making them a target for victimization? Data collected for the current study did not allow us to contextualize defending behavior in this manner. Additionally, future research could expand upon the investigation of school-level characteristics as potential factors that may relate to bullying-related behaviors and also how such school characteristics might interact with a student's disability status to explain variability in these behaviors.

6.8. Conclusions

This study offers a new and unique perspective in that it (a) investigated how bullying-related behaviors were associated with disability status when controlling for and interacting with gender, grade level, and free or reduced lunch status, and (b) investigated how classification in specific disability categories was associated with bullying-related behaviors. Findings indicated that disability status was a risk factor for some, but not all, bully role behaviors, and that gender, grade level, and SES interacted with disability status in meaningful ways that sometimes exacerbated involvement in negative (or positive) bully role behaviors. School psychologists and educational personnel should continue screening for and finding methods to prevent and address bullying involvement for students with disabilities, but with an eye toward groups who may have exacerbated risk due to societal, structural, and interpersonal stigma and biases.

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