

Factors Associated with Peer Aggression and Peer Victimization Among Children with Autism
Spectrum Disorders, Children with Other Disabilities, and Children Without a Disability

Sarah Beth Mallory

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ABSTRACT

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Peer aggression can take the form of physical hostility, adverse peer pressure, teasing, shunning, and social rejection (Little, 2002). Repeated acts of peer aggression are considered peer victimization and affect children with disabilities more often than children with no reported disabilities or psychiatric disorders (Baumeister, Storch, & Geffken, 2008; Pittet, Berchtold, Akre, Michaud & Suris, 2011). Personal characteristics and contextual factors have been linked to higher rates of peer aggression and the presence of peer victimization (Baumeister, et al., 2008; Bejerot & Morthberg, 2009; Boivin, Vitaro, & Bukowski, 1999; Hodges, Boivin, Vitaro, & Bukowski, 1999; Mishna, 2003). Youth who have experienced peer victimization have been found to suffer consequent loneliness, depression, low self-esteem, anxiety and suicidal ideation (Bond, Carlin, Thomas, Rubin, & Patton, 2001; Hawker & Boulton, 2000; Hunter, Boyle & Warden, 2007; Siegal, La Greca, & Harrison, 2009).

The present study used a caregiver survey to investigate experiences of peer aggression and peer victimization, as well as factors linked to such victimization among children with autism spectrum disorders (ASD), with other disabilities (OD), and without disabilities (WD). The main analyses addressed five sets of research questions. The first three research questions pertained to all three groups of participants and (1) compared rates of peer aggression and the proportion of children who experienced peer victimization between the ASD, OD and WD groups, (2) asked which personal factors were associated with peer aggression and peer victimization, and (3) asked which personal factors best predicted peer aggression and peer

victimization. The last two research questions pertained to the ASD and OD groups only (disability group) and asked (1) which personal factors and contextual factors were associated with peer aggression and peer victimization, and (2) which personal factors and contextual factors best predicted peer aggression and peer victimization.

The main analyses indicated that children with ASD and OD experienced significantly greater rates of peer aggression than peers in the WD group. Additionally, the ASD and OD groups of children were more likely to experience peer victimization than the WD group.

Peer aggression was correlated with autistic traits, anxious/depressed, withdrawn/depressed, thought problems, and attention problems. A multiple regression analysis indicated that the variable of anxious/depressed was the only variable that significantly contributed to the model and it accounted for approximately one-third of the variance.

Caregivers whose children experienced peer victimization reported significantly higher scores in autistic characteristics, anxious/depressed, withdrawn/depressed, thought problems, and attention problems. A forward logistic regression analysis indicated that anxious/depressed was the only variable that predicted peer victimization.

The multiple regression and forward logistic regression models produced for the combined ASD and OD group were similar to the models produced during the prior analyses for all three groups. Anxious/depressed was the only variable that significantly contributed to the multiple linear regression and forward logistic regression models. Contextual variables were not correlated with peer aggression or associated with peer victimization and they did not significantly contribute to the regression models.

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Chapter I

Background and Need

It is estimated that one-tenth of US students have experienced frequent peer aggression in school (Nansel, Overpeck, Pilla, Ruan, Simons-Morton, & Scheidt, 2001). One study (Finkelhor, Ormrod, Turner, & Hamby, 2005) found that one-fifth of the students in their sample of 2,030 US school children reported experiencing victimization in the past year. Late childhood and early adolescence is a critical time to investigate such victimization because these students are experiencing physical and psychological changes that place them at risk for other psychological problems (Papafratzeskakou, Kim, Longo, & Riser, 2011). As noted by Parker and Gottman (1989), this period of time is one when youth are greatly concerned about avoiding rejection and maintaining friendships to support their egos and self-worth. It is an important developmental time to consider peer victimization among typically-developing individuals and individuals with disabilities.

There is a great deal of focus on peer victimization and bullying in current literature because of the long-lasting and negative effects they can have on victims. A twenty-year meta-analytic review of the literature (Hawker & Boulton, 2000) on the effects of peer victimization on typically-developing children indicated depression as the most common form of psychological maladjustment associated with victimization followed by loneliness, low self-esteem and anxiety. Studies have linked peer victimization and bullying to depression (Baumeister, Storch, & Geffken, 2008; Hunter, Boyle & Warden, 2007) and anxiety (Baumeister et al., 2008; Siegal, La Greca, & Harrison, 2009) for individuals with and without disabilities.

Given that these data are based on correlations, it is not clear whether depression and anxiety predict peer victimization or are the result of peer victimization. However, longitudinal

studies (Bond, Carlin, Thomas, Rubin, & Patton, 2001; Kumpulianen & Räsänen, 2000) have shown that early peer victimization predicts depression in late childhood and adolescence. Furthermore, Siegal et al. (2009) asserted that the relationship between depression and anxiety with peer victimization is likely reciprocal.

Peer victimization has been reported at greater rates among children with disabilities and chronic conditions than in children with typical development (Estell, Farmer, Irvin, Crowther, Akos, & Boudah, 2009; Nabuzoka, 2003; Pittet, Berchtold, Akre, Michaud & Suris, 2011; Rose, Espelage, & Monda-Amaya, 2009; Saylor & Leach, 2009). This group is also more likely to receive less social support from their peers (Collins, Kersh, & Siperstein, 2011; Jones & Frederickson, 2010) and suffer consequent victimization (Estell, et al., 2009; Humphrey & Symes, 2010; Symes & Humphrey, 2010).

Individuals with disabilities characterized by visible deficits, such as behavior problems (Monchy, Pijl & Zandberg, 2004) or language impairments, (Conti-Ramsden & Botting, 2004; Knox & Conti-Ramsden, 2003) suffer greater rates of victimization than their typically-developing peers. Since individuals with Autism Spectrum Disorders are categorized as having visible deficits, such as poor communication and restricted behaviors, it is not surprising to learn that youth with autism spectrum disorders and autistic characteristics appear to be at increased risk for peer victimization than typically-developing peers (Cappadocia, Weiss, & Pepler, 2011; Little, 2002), and peers with other disorders (Bejerot & Mortberg, 2007).

Definitions of Relevant Constructs

In reviewing relevant literature, many terms associated with autism spectrum disorders are used interchangeably and inconsistently. The same is true when investigating various forms of peer victimization, peer aggression and bullying. The following section defines autism

spectrum disorders, autism and Asperger syndrome as well as peer aggression, peer victimization and bullying as they have been used in this review and study.

Definitions of autism spectrum disorders, autism and Asperger syndrome. For the purposes of this paper, autism spectrum disorders (ASD) refers to diagnoses of autism (autistic disorder), Asperger syndrome (AS), Pervasive Developmental Disorders (PDD) and Pervasive Developmental Disorder-Not Otherwise Specified (PDD-NOS). Autism and AS are the most commonly studied ASDs and are often referenced in isolation or together. They each have specific diagnostic criteria as outlined by the Diagnostic and Statistical Manual of Mental Disorders, 3rd edition revised (DSM-III-R; American Psychological Association, 1987) resulting in a clear set of personal characteristics. Individuals with autism have noted deficits in social interactions and communication, as well as restricted, stereotyped or repetitive behaviors. However, individuals with AS have deficits only in their social interactions with the presence of restricted, stereotyped or repetitive behaviors

While the term autism encompasses individuals with ‘high-functioning autism’ (HFASD) and ‘low-functioning autism’ (LFASD), these two categories have not been used in isolation unless a past study specifically recognized these groups of individuals in their analysis. This is done because HFASD and LFASD are not recognized diagnoses, so accurate diagnostic criteria or specific disability characteristics do not exist for these two labels. While autistic disorder (autism) is a recognized diagnostic label, HFASD and LFASD tend to be terms used informally by practitioners. The functional ability of individuals with ASD is also referred to in terms of measurable constructs such as adaptive functioning or communication abilities.

It should be noted that the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5; American Psychological Association, 2013) was released during the data

collection period of this study. The DSM-5 has a modified definition of autistic disorder and removed the diagnosis of Asperger syndrome. However, given the age ranges of participants' children in this study, they were likely diagnosed using the DSM-III-R (1987) 3rd ed., revised. Therefore, the diagnoses described in the DSM-III-R (American Psychological Association, 1987) 3rd ed., revised were used in this study.

Definitions of peer aggression, peer victimization and bullying. The terms peer aggression, peer victimization and bullying are frequently used interchangeably. However, they are three distinct concepts that warrant further definition in order to properly interpret the results of the present study and past research. Hunter, et al. (2007) proposed the most widely accepted definitions of these terms, which they adapted from previous studies' descriptions (Kochenderfer & Ladd, 1996; Naylor, Cowie, Cossin, de Bettencourt, & Lemme, 2006). The term *peer aggression* refers to a single act of victimization toward an individual by a peer (Hunter et al., 2007). Peer aggression ranges from verbal teasing to gang attacks and can take the form of physical hostility, adverse peer pressure, teasing or shunning (Little, 2002). Cardoos and Hinshaw (2011) identified two forms of peer aggression: overt victimization and relational victimization. Overt victimization is when an individual is physically or verbally attacked, while relational victimization is when an individual is intentionally ignored or excluded by his or her peers. Relational victimization is often referred to as ostracism or peer rejection. For the purposes of the present study, the term peer aggression encompasses both overt and relational victimization, unless a previous study specifically recognized these concepts separately. Further, since peer aggression is a single incident, studies that examined the frequency or rate at which an individual was exposed to overt and/or relational victimization were said to be studying the frequency or rate of peer aggression.

Peer victimization is a form of peer abuse in which an individual is the target of repeated acts of peer aggression (Hunter et al., 2007; Kochenderfer & Ladd, 1996). This is the concept most studied in current literature because repeated acts of peer aggression are indicative of a serious problem and are not considered an isolated or ‘fluke’ incident (Hunter et al., 2007) . Studies that examined the presence of repeated peer aggression (not the *rate* of peer aggression), were said to be studying peer victimization.

Many authors use the term bullying when referring to peer victimization. However, *bullying* is a specific form of peer victimization with three distinct features. Bullying is used to describe repeated acts of peer aggression by a peer or group of peers marked by an imbalance of power and the intention to cause distress or harm (Naylor, et al., 2006). Hence, studies that examined the presence of peer victimization with these specific traits, were said to be studying bullying. Measuring the presence of bullying is problematic because it is difficult to determine the motive of the aggressors. Therefore, bullying was not selected as a dependent variable for the present study.

Peer rejection is a confusing term that has often appeared in the literature and that requires further clarification. As noted above, relational victimization is often referred to as peer rejection; this is an active form of peer aggression that involves the *intentional* exclusion of a child from peer groups or activities. However, the term ‘peer rejection’ has also been used to describe a lack of acceptance and a lack of friendship by a child’s peers; this is found in the literature identifying peer rejection risk factor for later victimization.

To avoid confusion, the present review of literature classifies these concepts into two categories: *relational victimization* and *social acceptance*. Studies that used the term peer rejection to describe the intentional exclusion of an individual were identified as studies that

investigated *relational victimization*, which is a form of peer aggression. Studies that described the degree of acceptance and participation of an individual within his or her peer group were classified as studies that investigated *peer acceptance*.

Need for Further Research on Peer Victimization among Youth with ASD

There are a number of personal and contextual risk factors that are linked to peer victimization. A meta-analysis by Cook, Williams, Guerra, Kim, and Sadek (2010) examined 30 years of literature and identified the strongest of these factors. Among personal factors, Cook et al.'s (2010) meta-analysis described a typical victim as one who is likely to engage in externalizing behaviors and have internalizing symptoms. Victims of peer victimization also lack appropriate social skills and have difficulty solving social problems. Peer status, community factors and school climate were the strongest contextual predictors of victimization in Cook et al.'s (2010) meta-analysis.

Similarly, victims of peer victimization with disabilities tend to be insecure, submissive, and withdrawn (Baumeister et al., 2008; Mishna, 2003). They are less accepted by their peers (Mishna, 2003) and solitary at school (Hodges, Boivin, Vitaro & Bukowski, 1999). They are more likely to worry (Hodges et al., 1999), become easily upset (Mishna, 2003) and be classified as perfectionists by their teachers (Baumeister et al., 2008). Finally, victims of peer victimization are often classified as bullies (Hodges et al., 1999; Mishna, 2003) and may display destructive, aggressive and delinquent behaviors (Baumeister et al., 2008; Hodges et al., 1999; Mishna, 2003).

There is limited research investigating an integrated model that considers both personal and contextual risk factors for peer victimization among children with ASD and other disabilities. Cappadocia, et al. (2012), considered such a comprehensive model to describe peer

victimization among children with autism spectrum disorders; however their study did not include children with typical development or children with other disabilities. Most studies that consider victimization of children with ASD report rates of prevalence (Little, 2002; Kowalski & Fedina, 2011) and common correlates (Kowalski & Fedina, 2011; Shtayermann, 2007). A model that considers how personal risk factors and contextual risk factors interact to predict victimization is needed to guide the development of future interventions.

Such a model also has implications for future policy. There is a strong focus on identifying and preventing bullying in schools; however, very few policies or school-wide practices consider individuals with disabilities. This is concerning because this group of individuals experiences greater rates of peer aggression than their peers (Little, 2002).

Statement of the Problem

Given the critical age of early adolescence (Parker & Gottman, 1989) and the increased susceptibility to victimization of individuals with disabilities (Estell et al, 2009, Nabuzoka, 2003; Pittet, et al., 2011; Rose et al., 2009; Saylor & Leach, 2009) and ASD (Little, 2002), it is important to understand why these individuals are victimized at greater rates than their peers. Specifically, it is important to explore which personal and contextual characteristics place a child with ASD at risk for peer victimization.

The present study investigates experiences of peer aggression and peer victimization among children with ASD, children with other disabilities, and children without a disability. It also investigates which previously identified personal factors and contextual factors are associated with victimization, and how these factors interact to predict peer aggression and peer victimization.

First, this study examines which personal factors are correlated with and predict peer aggression and peer victimization among children ASD, children with other disabilities, and children without a disability. Next, the study examines how personal factors and contextual factors that are specific to children with disabilities are correlated with peer aggression and peer victimization. Significant correlates are assessed in a model to determine how they interact to predict peer aggression and peer victimization among children with disabilities.

Chapter II

Review of Relevant Literature

This review of literature discusses current theoretical frameworks used to describe risk factors associated with peer aggression and peer victimization among young adolescents. It presents current literature describing the prevalence and impact of peer victimization. Next, specific risk factors associated with increased peer victimization are discussed. Finally, a summary and rationale for the current study are presented and research questions are stated.

Current Theoretical Frameworks

There is limited research investigating how specific personal and contextual risk factors interact to predict peer victimization among different groups of children. In a study by Hodges, Malone, & Perry (1997), 110 girls and 119 boys in third through seventh grade completed two measurements. The first measurement was Wiggins and Winder's Peer Nomination Inventory (1961). Participants nominated same-sex peers that met the characteristics described in 53 items. The 53 items were grouped into 10 different categories: victimization, aggression, argumentativeness, dishonesty, pushy peer entry style, disruptiveness, immaturity, withdrawal, anxiety/depression, hovering peer entry style, pro-social behavior and physical strength. The second measure asked participants to nominate three same-sex peers that they enjoyed playing or working with the most and three peers that they liked to play or work with the least.

A factor analysis was completed to reduce the number of variables. It resulted in two factors: (1) externalizing behaviors, which was comprised of aggression, argumentativeness, dishonesty, pushy peer entry style, and disruptiveness; and (2) internalizing problems, which was comprised of withdrawal, anxiety/depression, and hovering peer style. Physical strength was considered independently. Each of the factors was correlated with victimization.

Next, Hodges et al. (1997) sought to determine if the number of friends and quality of friendships moderated the relationship between behavioral risk factors and victimization. As expected, the number of friends was negatively correlated with victimization and of the 229 participants, only 163 had at least one reciprocated friendship. Multiple regression analyses indicated that the relationships between peer victimization and internalizing behaviors, externalizing behaviors and physical weakness were moderated by the presence of friends. More friends were associated with fewer experiences of peer aggression. However, friends that were at behavioral risk themselves, offered less protection against victimization in the presence of internalizing behaviors, externalizing behaviors and physical weakness. The authors also reported that social rejection placed behaviorally-vulnerable participants at a greater risk for peer victimization.

Hodges et al. (1997) concluded that both individual and social factors place individuals at risk for peer victimization and set the stage for future studies to consider such factors when determining risk for peer victimization. Based on Hodges et al's (1997) findings that social and personal factors interact to predict victimization, Crawford and Manassis (2011) set out to test a path model that could be applied to individuals with social anxiety. A sample of 140 children between the ages of 8 and 14 years participated in the study. Fifty-five were recruited from an Anxiety Disorder Clinic where they were diagnosed with an anxiety disorder by a licensed psychiatrist; and 85 "normal" children were recruited from a Catholic School.

Data were collected over a three-year period. Participants were administered a variety of self-report measures meant to assess their social skills, friendship quality, anxiety, and victimization. Crawford and Manassis (2011) used structural equation modeling (SEM) to test the hypothesized model for both the anxiety group and the control group. Results for the anxiety

group indicated that anxiety was directly related to victimization. Social skills predicted friendship quality, which predicted victimization. Friendship quality mediated the relationship between social skills and peer victimization. This model accounted for 33 percent of the total variance; the indirect effect of social skills on victimization was -.13.

The model for the control group also indicated that anxiety was directly related to peer victimization and that social skills predicted friendship quality, which predicted peer victimization. Friendship quality also mediated the relationship between social skills and peer victimization; however, unlike in the anxiety group, there was a direct relationship between social skills and peer victimization. Therefore, the direct effect of social skills on peer victimization was -.22 while the indirect effect (as mediated by Friendship Quality) was -.08. This model accounted for 20 percent of the total variance.

The authors also created an alternative model to determine if social skills, friendship quality and peer victimization predicted anxiety. As expected, the model was significant for participants in the anxiety group but not the control group. Additionally, the association between anxiety and peer victimization was strongest in the anxiety group, while anxiety, social skills and friendship quality were all equally strong in the control group. These results suggest that a reciprocal relationship exists between anxiety and peer victimization among socially-anxious children. This relationship does not exist among non-anxious children, suggesting that social factors are just as important as personal factors in predicting peer victimization.

Social skills were not directly related to peer victimization in the anxiety group. This could be the result of more obvious social deficits in the control group (externalizing behaviors; ADHD, and so on) or the result of anxious children's shyness and unassertiveness preventing them from making close friends.

Despite having a small number of participants for a SEM model, Crawford and Manassis (2011) provided strong evidence for the need to consider personal and contextual risk factors for different groups of children. Future lines of research would benefit from using a more diverse control sample and a longitudinal design so causal inferences could be made.

To date, this author is aware of only one study that considered both personal and contextual risk factors when examining rates of peer aggression among children with ASD. Cappadocia et al. (2012) surveyed 192 parents of children diagnosed with ASD aged 5 to 21 years old. Participants' children had diagnoses of Asperger syndrome, HFASD, PDD-NOS, and autism and were placed in both general education and special education settings. Using several measures, the authors assessed parents' psychological well-being, children's experiences of peer aggression, and children's internalizing behaviors, externalizing behaviors, social skills, communication skills, and number of friends at school.

Seventy-seven percent of parents surveyed indicated that their children had been victimized in school within the past month. A total of 11% reported a single act of peer aggression in the past month, while 23% reported two to three acts of peer aggression. Thirteen percent reported an act of peer aggression occurred once a week and 30% reported a rate of two to three acts of peer aggression a week. A binomial regression analysis was conducted to examine which variables predicted the presence of peer aggression. Children were categorized into two groups: any victimization and no victimization. Child age, communication difficulties, internalizing behaviors, parental mental health problems, and fewer numbers of friends at school predicted the presence of peer aggression among children with ASD.

Cappadocia et al. (2012) established that both personal and contextual risk factors predicted peer aggression among their sample of children with ASD. However, because this

study lacked a comparison group, it is difficult to determine if this model differed from one that would be applicable to individuals without ASD.

Hodges et al. (1997), Crawford and Manassis (2011), and Cappadocia et al. (2012) each demonstrated the need to consider personal and contextual risk factors when developing a model to predict peer victimization. Furthermore, Crawford and Manassis (2011) demonstrated the importance of applying different models when explaining victimization among different groups of individuals. While Cappadocia et al. (2012) initiated the process of examining an integrated model that is specific to children with ASD; future studies should consider how such a model differs from one that is used with typically-developing children.

Prevalence and Impact of Peer Victimization

As noted earlier, Crawford and Manassis' (2011) findings suggest the need to investigate peer victimization among different groups of children, as diagnosis alone does not predict victimization. The following section discusses the prevalence and impact of peer victimization among typically-developing individuals; the prevalence and impact of peer victimization among individuals with disabilities; and the prevalence and impact of peer victimization among individuals with ASD.

Prevalence and impact of peer victimization among typically-developing individuals.

Hunter, et al. (2007) examined peer aggression, peer victimization and bullying among Scottish school children. The authors recruited 1,429 pupils between the ages of 8 and 13 years enrolled in mainstream schools in Scotland. Participants were administered a series of measurements meant to evaluate rates and types of peer aggression, perceived control, coping strategies, and co-morbid depression.

The primary assessment was a tool developed by the authors of a previous study (Hunter et al., 2007). It described various situations of peer aggression and asked students to report if they had experienced a similar situation in the past two weeks. Students were also asked to note the frequency and intention of the aggressor by documenting how often they had experienced each event and answering the question, “Do you think the kids were trying to upset you?” The questionnaire included questions meant to measure students’ threat appraisal of situations and questions concerning students’ control and ability to stop situations of peer aggression.

This series of questions helped to distinguish if the acts were peer aggression, peer victimization or bullying. Hunter and colleague’s (2007) definitions of peer aggression, peer victimization and bullying were noted earlier and used for the purposes of this study. The measurements included in the Hunter et al. 2007 survey were a shortened version of Hunter’s (2000) Coping Strategy Assessment and Birlerson’s (1981) Depression Self-Rating Scale.

The results indicated 35.6 percent of students had experienced peer aggression (aggression that was not re-occurring) and 30.7 percent had experienced peer victimization (aggression that was repeated in nature). Of the 30.7 percent that experienced peer victimization, 38.1 percent (11.7% of the total sample) of the students were the victims of bullying as classified by experiencing repeated, intentional incidents of peer-aggression marked by an imbalance in power. Additionally, students who experienced peer victimization and bullying reported higher levels of depressive symptoms, with bullying associated with the greatest number of reported symptoms.

Hunter and colleague’s (2007) study is valuable because it provides a clear distinction between peer aggression, peer victimization and bullying. It also reports alarming rates of peer aggression and concerning potential outcomes for victimized children in general education

schools. However, it is not possible to determine the direction of the relationship between potential outcomes such as depression because the correlations cannot indicate if peer victimization caused depression or if depression led to greater rates of peer victimization.

Longitudinal research has addressed this problem by providing insight on the long-term effects and outcomes of peer victimization in late childhood. Boiven, Petitcherc, Feng, and Barker (2010) examined the developmental trajectories of peer victimization as children progressed from third to sixth grade. Using peer nomination strategies and structural equation modeling, the authors assessed the characteristics and rates of peer aggression among 1,035 participants across 29 Quebec schools. Z-scores were assigned to each participant based on their peer-reported rates of victimization.

Three developmental trajectories of victimization from middle to late primary school were identified: low-stable, high-increasing and extreme-decreasing. The low-stable trajectory made up the majority of the sample (85.5%) and consisted of children who rarely experienced peer aggression. This group experienced low rates of peer aggression (z-score less than 0), and their trajectory remained relatively stable across the three years of the study. The high-increasing group made up 10 percent of the sample; this group experienced high rates of peer aggression that slightly increased (positive slope of .2) over time. Finally, extreme-decreasing group represented 4.5 percent of the sample. This group of participants experienced the highest level of peer aggression (z-score over 3.0), which only slightly decreased over time.

While this report (Boiven et al, 2010) relied on peer reports, not teacher or self-reports, it provides specific information about the long-term nature of peer victimization. As evidenced by this study, victimization does not occur as isolated pockets of peer aggression in a child's development. For the 14.5 percent of the sample that experienced 'high' or 'extreme' levels of

victimization, it was a long-term problem that followed the victims through their educational career.

Prevalence and impact of peer victimization among individuals with disabilities.

Peer victimization is not limited to typically-developing individuals; peer aggression occurs at higher rates among samples of individuals with chronic conditions and disabilities. In a systematic review of literature examining peer victimization among children and adolescents with chronic conditions, such as psychiatric diagnoses, learning difficulties, physical disabilities and chronic diseases, Sentenac et al. (2012) identified 59 studies that indicated a higher level of victimization among individuals with such conditions. Additionally, these authors noted that a psychiatric diagnosis or learning disability was significantly correlated with peer victimization more often than motor impairments or chronic diseases.

In one such study conducted in Switzerland (Pittet, et al., 2011), data were drawn from the Swiss Multicenter Adolescent Survey on Health 2002. A group of 728 adolescents identified as having a chronic condition (chronic disease, physical disability or both) was compared to 6277 adolescents without a chronic condition. Three types of peer aggression were assessed: teasing, physical aggression, and social exclusion (identified as relational victimization in this review). Results indicated that adolescents with chronic conditions were significantly more likely to experience one or more forms of peer aggression.

As noted by Sentenac et al. (2012), limited research has been conducted examining rates of peer victimization among children with intellectual (ID) and developmental disabilities. In a study examining peer victimization among young adolescents with ID, Christensen, Fraynt, Neece and Baker (2012) interviewed parents and 13-year-old adolescents to report rates and risk factors of victimization. Adolescent participants were administered the Wechsler Intelligence

Scale for Children (WISC-IV; Weschler, 2003) and their mothers responded to the Vineland Scales of Adaptive Behavior-II (VABS; Sparrow, Cicchetti & Balla, 2005), to identify adolescent participants as ID or typically-developing. Additionally, mothers completed the Child Behavior Checklist (CBCL; Achenbach & Rescorla, 2001) to assess specific behavioral and emotional problems. Finally, both the mothers and adolescent participants completed semi-structured interviews to assess the nature of the peer aggression that the adolescents were experiencing.

Results indicated that a greater proportion of individuals with ID experienced peer victimization than individuals in the typically-developing group. Between 52 and 62 percent of individuals with ID experienced peer victimization as reported by adolescents and mothers, respectively. Between 41 and 42 percent of individuals with typical development experienced peer victimization. The chronicity and severity of the peer victimization did not differ between the two groups; however, mothers generally reported greater severity than their adolescents. Cases of victimization were reported as chronic by adolescents 66 percent of the time and by mothers 82 percent of the time, suggesting that the majority of victimization that was experienced met the criteria for peer victimization and possibly bullying. While this study included both parent and adolescent reports, it lacked a concrete definition of peer victimization and bullying. Since these terms were used interchangeably and the three criteria that define bullying were not discussed, it is likely that the study addressed peer victimization

Saylor and Leach (2009) examined a wider range of disabilities in their study that compared 24 typically-developing adolescents in middle and high school with 24 similarly-aged peers with disabilities in a self-contained environment. Participants' disabilities included developmental delays, ASD, mental retardation (intellectual disabilities), cerebral palsy,

ADD/ADHD, severe allergies, chronic health conditions, learning disabilities, emotional/behavioral diagnoses, hearing and visual impairments, and speech and language disorders.

Participants were administered a battery of assessments that included *The Bully Victimization Scale* (BVS) and *School Violence Anxiety Scale* (SVAS) (Reynolds, 2003), which asked participants to self-report victimization and anxiety surrounding the possibility of school violence. Results indicated that students with disabilities in a self-contained setting were more likely to report experiencing peer aggression than their typically-developing peers. This group also felt more anxious about school violence than typically-developing peers.

Saylor and Leach (2009) established that children with disabilities are victimized at elevated rates, however, the nature of the results makes it difficult to discern if it was the self-contained setting or the categorization of having a disability that made this group of participants more susceptible to peer victimization.

Prevalence and impact of peer victimization among individuals with ASD. There is also a great deal of literature describing increased rates of peer aggression against children with ASD and ASD characteristics in comparison to peers without ASD. Parents of children with ASD have reported higher levels of concern about peer victimization in comparison to parents of typically-developing children or children with Attention Deficit Disorder/Attention Deficit Hyperactivity Disorder (Lee, Harrington, Louie & Newschaffer, 2008). In a study (Green, Gilchrist, Burton, & Cox, 2000) comparing the psychiatric functioning of adolescents with ASD to that of adolescents with conduct disorder, a greater proportion of participants with HFASD and AS experienced peer victimization than individuals with conduct disorder. Further, Bejerot and Mortberg (2009) considered the role of ASD traits when investigating the rates of peer

victimization among individuals with Obsessive-Compulsive Disorder (OCD) and Social Anxiety. Participants with OCD and Social Anxiety who also displayed traits of ASD were more likely to report previous experiences of peer victimization than those individuals with only a psychiatric diagnosis, suggesting that traits associated with ASD may place individuals at greater risk for victimization than those with other psychiatric or disability labels.

One of the most well-known studies about peer victimization among children with ASD was conducted by Little (2002). Little (2002) examined experiences of peer aggression among children and adolescents with AS. Mothers of 411 identified participants between the ages of 4 and 17 (mean age of 10.48) were surveyed using a portion of the Juvenile Victimization Questionnaire (JVQ; Hamby & Finkelhor, 1999), which asked parents to report how many times their child experienced specific acts of peer aggression in the past year. Parental reports of peer aggression were measured with questions about rates of physical aggression, negative peer pressure, bullying, and hurtful language experienced by their children. Shunning (relational victimization) was also measured using three author-created questions about children's participation in social activities such as birthday parties, team selection, and lunch table seating.

A control group of non-disabled peers was not used in Little's (2002) study; however, the results were compared to those of two national studies (Finkelhor, Mitchell & Wolak, 2000; Finkelhor & Wolak, 1995), which reported the prevalence of peer victimization of children from the 'general population.' Ninety-four percent of parents surveyed in Little's (2002) study reported that their children had experienced an act of peer aggression in the past year. Additionally, 75 percent of parents reported their children were bullied and 73 percent reported their children were assaulted. Most alarming was that 10 percent of parents reported gang attacks, where groups of children victimized their children. Each of these rates was higher than

national averages (Finklehor et al., 2000; Finkelhor & Wolak, 1995). The frequency of bullying (overt victimization) peaked at multiple ages (6, 9, 12 and 15-years) while emotional bullying (relational victimization), such as name-calling and harassment, steadily increased with age until 13. Shunning was reported at rates of 33 percent to 50 percent, depending on the situation.

Little (2002) presented an alarming prevalence of peer victimization; however, it is important to note these rates should be interpreted carefully. Using the definitions of peer aggression (single event), peer victimization (repeated events) and bullying (repeated events marked by intentionality and power imbalance) described earlier, it seems as if Little (2002) reported rates of peer aggression.

Peer victimization of children with ASD is not limited to traditional acts of victimization that occur face-to-face. A recent study (Kowalski & Fedina, 2011) compared traditional forms of bullying and cyber-bullying among AS and ADHD populations. Twenty-four males and 18 females between the ages of 10 and 20 participated in the study. Participants attended a summer camp for children with disabilities. While participants' diagnoses were not established by the researchers, campers were not allowed to attend the camp without a confirmed diagnosis. Participants completed a paper and pencil questionnaire that asked basic demographic questions about their online habits. Next, participants were given a definition of bullying (traditional) and cyber-bullying and asked to report on how frequently they had been bullied online or in traditional settings by completing the author-made Electronic Bullying Questionnaire. The questionnaire also included questions meant to measure the physical and psychological effects of bullying by asking participants to report on conditions such as anxiety and skin problems. Finally, parents completed a survey about their Internet habits, their children's online habits, and their knowledge of cyber-bullying.

Participants with ADHD and AS reported age-appropriate online habits. A large percent of campers reported they had been ‘traditionally’ bullied (57%) and cyber-bullied (21.4%) in the preceding two months. Of these participants, 14.3 percent reported they were cyber-bullied *and* traditionally bullied.

Parental reports of cyber-bullying were grossly different than their children’s reports. A large number of parents (12%) did not know if their child was being cyber-bullied or thought that their child was not cyber-bullied (73%) at all. However, parental reports of traditional bullying were closer to their children’s accounts with 52 percent of parents stating that their child was ‘sometimes’ bullied and 18 percent reporting their child was ‘often’ bullied. Furthermore, 31 percent of individuals who reported being traditionally bullied also reported engaging in bullying behaviors. Because of the small number of participants in this study, the researchers were unable to disaggregate the data for the two disabilities (AS and ADHD); therefore, it is difficult to determine how each of the disability categories were engaging in and being affected by cyber-bullying.

These studies (Green et al., 2000; Kowalski & Fedina, 2011; Little, 2002) demonstrate there is a wide-range of possible rates of victimization of individuals with ASD by their peers. The differences are likely impacted by authors’ definitions of peer aggression, peer victimization, and bullying; and the samples of students being surveyed. Furthermore, environmental factors such as current school bullying policies and classroom environment may impact victimization rates in schools.

Awareness of peer rejection and victimization among individuals with ASD. Given that children with ASD are characterized as having severe deficits in their social competence (Vickerstaff, Heriot, Wong, Lopes, & Dossetor, 2007), one may question whether this population

is able to perceive and be affected by such victimization. Current literature indicates that children with ASD are able to recognize peer victimization (Van Roekel, Scholte, & Didden, 2010) and are significantly impacted by such victimization (Masten, et al., 2011; McPartland et al., 2011). However, children with ASD may be impacted by such victimization in a slightly different manner than their peers (Masten, et al., 2011; McPartland et al., 2011; Rotheram-Fuller, Kasari, Chamberlain, & Locke, 2010; van Roekel et al., 2010).

Masten et al. (2011) used functional Magnetic Resonance Imaging (fMRI) to measure participants' responses to simulated situations of peer rejection. Nineteen adolescents with ASD and 17 typically-developing matched peers underwent an fMRI while participating in an online game called Cyberball. Participants were told that they were playing Cyberball with two other adolescents; the goal of the game was to toss the ball back and forth with the other online players. Unbeknownst to the participants, the other players were characters of a computer game and did not actually exist. After several rounds of each of the members equally receiving and throwing the ball, the two computer characters stopped tossing the ball to the participant.

Both typically-developing adolescents and adolescents with ASD reported moderate levels of social distress following the Cyberball activity. The fMRI revealed that both groups of adolescents reacted to the rejection; however, adolescents with ASD processed the rejection differently than their typically-developing counterparts. Adolescents with ASD showed reduced neural engagement in the part of the brain typically associated with distress, and increased levels of activity in areas of the brain that are typically inactive or minimally-active during social distress. The authors hypothesized that the reduced neural engagement could be the result of the expectation of rejection or repeated exposure to situations of peer rejection. The increased neural engagement in the typically-inactive portions of the brain could be the result of failed

attempts to manage the distress; this is supported by a significant correlation between self-reported distress and increased activity.

A similar study by McPartland et al. (2011) used the Cyberball activity during an Electroencephalography (EEG). Following the EEG, participants were administered the Need Threat Scale (Van Beest & Williams, 2006) measuring belonging, self-esteem, meaningful existence, control and mood, and ostracism. Typically-developing participants and participants with ASD did not have significantly different responses to the scales and displayed similar levels of distress following the Cyberball activity.

However, as with Masten et al. (2011), McPartland et al. (2011) reported different EEG responses between the two groups. The authors compared participants' responses during 'not my turn' time and during the time of rejection. Typically-developing children's EEGs showed different reactions to 'not my turn' and rejection. Their responses to rejection correlated with their self-reported mood and feelings of ostracism. However, participants with ASD did not differ in their reaction to 'not my turn' and rejection; nor was there a correlation between their self-reported feelings and the EEG.

Both these studies show that while children with ASD process ostracism differently, they still react and experience negative feelings toward the rejection. Van Roekel et al. (2010) took a different approach to measuring whether adolescents with ASD could perceive peer victimization or bullying. A total of 25 students with ASD, 123 students with PDD-NOS, and 29 students with AS attending a special education secondary school in the Netherlands participated in this study. An additional 31 students with a dual diagnosis of ADHD were also included for a total of 208 participants. The control group consisted of 24 adolescents without ASD attending a general education secondary school in the Netherlands.

Participants completed several evaluations. The first tool measured peer-reported levels of bullying and victimization by asking participants to rate if a peer ‘bullies other children’ and ‘is victimized’ on 5-point Likert scales. Student ratings were averaged and given a standard score. Participants were provided with a description of bullying consistent with descriptions (Naylor et al., 2006; Hunter et al., 2007) provided earlier and asked to include themselves in the bullying and victimization rating scales. Participants also completed a series of Theory of Mind (ToM) tasks.

The second measure assessed participants’ ability to recognize situations that involve peer victimization. Students were shown 14 clips of Dutch television shows and asked to identify the situations as interactions that involved bullying or positive social exchanges. The authors created this measure for use in this study and reported that four independent researchers completed the video task with 95 percent agreement. Finally, teachers rated students as victims and bullies.

The results allowed the authors to classify students as *moderate* or *extreme* bullies and/or victims based on the standard scores received on the student nominated victim/bully index. As with research in general education environments, teachers reported significantly higher rates of victimization and bullying than adolescents.

Teachers reported 30 percent of ASD students as victims of moderate victimization and 18% of extreme abuse. Seven percent of students were rated as victims of moderate bullying by their peers, while 4% were rated as victims of extreme victimization. A total of 17 percent of students self-reported themselves as victims of moderate bullying and 10 percent as extreme bullying.

The main purpose of this study was to investigate how students with ASD perceive bullying and peer victimization. Students' mean scores on the video task were not significantly different than those of the control group of typically-developing peers. However, further analysis revealed that students who experienced higher rates of victimization or demonstrated inflated levels of bullying were more likely to make mistakes in the video task. Specifically, teacher-reported and self-reported victimization was significantly related to the number of false-positive mistakes as defined by misinterpreting bullying as socially appropriate interactions. This misinterpretation may explain why participants with ASD had different fMRI and EEG results in studies such as Masten et al. (2011) and McPartland et al. (2011). Similarly, ToM and teacher-reported bullying were significant predictors of students' false-negative mistakes. Therefore, groups of students identified as having both poor Theory of Mind skills and higher rates of teacher-reported bullying were more likely to misinterpret bullying situations as acceptable social interactions.

Masten et al. (2011), McPartland et al. (2011) and Van Roekel et al. (2010) each demonstrated that individuals with ASD process and respond negatively to peer rejection and victimization. However, these studies also indicated that individuals with ASD process peer rejection and victimization differently. In the case of Masten and colleague's (2011) and McPartland and colleague's (2011) studies, participants employed different parts of their brain during situations of distress. Van Rockel et al. (2010) and McPartland et al. (2011) demonstrated that individuals with ASD over-generalized their reactions to peer rejection and victimization. Victims were more likely to misinterpret socially-acceptable behaviors as bullying and situations of non-engagement as rejection.

These results are supported by previous studies, which have shown children with ASD frequently misinterpret their peers' intentions and friendships. In a study by Rotheram-Fuller et al. (2010), a friendship nomination procedure was used to investigate the social inclusion and exclusion of children with ASD in early, middle and late elementary school. A total of 65 children with ASD and 79 typically-developing peers participated in this study. The ASD group included students with autism and AS with confirmed diagnoses made by outside evaluators.

Participants were administered the Friendship Survey (Cairns & Cairns, 1994), which asked students to nominate their top three friends and bottom three friends; and to list groupings of friends in their schools. The authors used these data to identify reciprocal friendship nominations. Standard scores of acceptance and rejection were calculated for each student based on these nominations. Additionally, participants' network centrality was calculated to represent students' 'prominence' in a classroom.

Aggregately, 48.1 percent of children with ASD were socially involved in their classroom setting. However, they had significantly lower rates of reciprocal nominations than typically-developing children and were infrequently centrally located in their social network. Results suggest that students with ASD were frequently misinterpreting relationships by nominating peers who did not reciprocate their friendship.

The propensity of children with ASD to misinterpret social situations, and situations of peer victimization does not indicate that they are unaware of their victimization. Children with ASD are not only capable of recognizing rejection and victimization, but also report negative long-term effects. Children with ASD who experienced peer victimization are reported to have increased rates of internalizing behaviors, such as depression and anxiety, and suicidal ideation (Cappadocia et al., 2012; Schtayerrman, 2007). These results are similar to the expected

outcomes of typically-developing victims who experience increased rates of anxiety, depression, loneliness and fear of rejection in adulthood (Storch et al., 2004).

Risk Factors of Peer Victimization

As demonstrated by Hodges et al. (1997), Crawford and Manassis (2011) and Cappadocia et al. (2012), both personal factors and contextual factors should be considered in models predicting rates of peer aggression or presence of peer victimization. The following section examines different groups of personal factors and contextual factors and how they relate to individuals with ASD.

Personal factors. Personal factors are those factors that are specific to the individual; in this case, they are characteristics of the victim. Peer victimization has been linked to anxiety and depression, poor social and communication skills, and atypical and aggressive behaviors. The first portion of this section reviews studies that have examined these risk factors in isolation. Next, this section concludes by discussing studies that have taken a comprehensive approach to understanding how personal factors impact peer victimization by considering multiple personal risk factors at a time.

Personal factors studied in isolation. A number of studies of have investigated how personal factors relate to peer victimization in isolation. These articles provide a foundation for understanding how these behaviors may contribute to a more comprehensive model.

Internalizing behaviors: anxiety and depression. Internalizing behaviors such as anxiety and depression were not considered in Crawford and Manassis' (2011) model of victimization; however, they were considered in models developed by Cappadocia et al. (2012) and Hodges et al. (1997) and have a great deal of literature supporting their relationship with peer victimization. According to Rutter (1967), internalizing behaviors are behaviors that are internal and include

excessive worrying; solitary behavior; sadness or general melancholy, and increased levels of anxiety. Depression and anxiety are the most common internalizing behaviors linked to peer victimization.

High rates of depression and anxiety are not uncommon in ASD populations. Multiple authors (Barnhill & Smith-Myles, 2001; Bellini, 2004; Kim, Szatmari, Bryson, Streiner, & Wilson, 2000; Shtayermman, 2007) have reported elevated levels of depression and anxiety in individuals with HFASD and AS. Additionally, anxiety and depression are related to previous and current victimization by peers (Baumeister et al. 2008; Hunter et al., 2007; Shtayermman, 2007; Storch et al., 2004; Vickerstaff et al., 2007). While the nature of these data makes it difficult to conclude if depression and anxiety are caused by peer victimization or if this population is at a higher risk of peer victimization because of their depressive and anxious symptomatology, it supports the need to consider the relationship between these characteristics and peer victimization among high-risk populations such as those with disabilities and ASD.

Social anxiety has been studied in isolation as a personal predictor of peer victimization. Boiven and colleague's (2010) study examined the developmental course of peer victimization between grades 3 and 6. There was a strong association between peer victimization and aggression among younger children; however this association faded over time. Peer victimization became increasingly associated with social withdrawal and steadily associated with emotional vulnerability. Siegal et al. (2009) studied the role of social anxiety in predicting peer victimization. Using multiple regression analyses, Siegal et al. (2009) reported a reciprocal relationship between social anxiety and peer victimization among typically-developing adolescents. Adolescents who reported greater rates of victimization also reported higher levels of social anxiety. Relational victimization, defined as a 'malicious manipulation' of a

relationship, was the most damaging type of peer victimization and predicted increases in social anxiety among girls. Notably, social anxiety predicted increases in relational victimization over time for both boys and girls. The authors asserted that these results suggest that socially anxious adolescents may be considered easy targets and victimized at higher rates because of poor social skills and less supportive and intimate friendships.

Externalizing behaviors: behavior atypicality and aggression. Externalizing behaviors include aggressive or destructive acts toward others' belongings; engaging in physical fights or verbal arguments; lying; stealing; and bullying. In a review conducted by Mishna (2003), the author noted that approximately 10% of victims of peer victimization could be categorized as bullies themselves (bully-victim). This category of victims was described as exhibiting aggressive, provocative, or impulsive behaviors. They may have difficulty concentrating and can be regarded as hyperactive or irritating by peers and adults.

DeRosier and Mercer (2009) described the relationship between behavior atypicality and peer aggression. According to the authors, behavior atypicality is 'the degree to which children's behavior is viewed by peers as different relative to the larger peer group.' Adolescents viewed as socially or behaviorally different are frequently targeted by bullies. DeRosier and Mercer (2009) used peer, self and teacher reports to study behavior atypicality as a predictor of social rejection, peer victimization and later academic difficulties. There were a total of 1,193 participants. For each of three categories, participants were asked to nominate peers that they liked the least, say or do weird things, and get called names or picked on a lot. Additional measurements were used to assess students' self-reported loneliness, depression and social anxiety. Finally, a teacher assessment tool gathered information about participants' academic performance. The authors reported that participants most frequently nominated a peer as atypical

for inappropriate recess/playground behavior and improper or failed use of humor. Other reasons that peers were often identified as atypical included visual differences; verbal differences; and behaviors such as aggression, disruption, or solitary tendencies.

Using structural equation modeling, the authors constructed a model that indicated atypicality was directly and indirectly related to emotional and academic difficulties as mediated by peer rejection and peer victimization. Atypicality was directly associated with higher levels of overt and relational peer victimization.

Social and communication skills. The DSM-III-R (American Psychological Association, 1987) identifies deficits in social skills and communication skills as two components of the diagnostic criteria for children with autistic disorder. According to the DSM-III-R (American Psychological Association, 1987), children with AS display deficits only in their social skills. While deficits in social skills and communication skills often co-exist and are studied together, it is important to understand how they each contribute to experiences of peer victimization.

Social deficits are commonly reported among individuals with ASD. Vickerstaff et al. (2007) examined social competence and depression in children with HFASD. Twenty-two children with HFASD between the ages of 7.92 and 13.92 were administered a series of self-report measures of social competence, including the Social Skills Rating System (SSRS; Gresham & Elliot, 1990) and Self-perception Profile for Children. Participants' depressive symptomatology was measured by the BASC (Reynolds & Kamphaus 1992) and CDI (Kovacs, 1992). Teachers and parents completed sections of the BASC and SSRS to corroborate students' self-reports.

Students, teachers and parents consistently rated the ASD participants as having low social competence; teachers provided the lowest ratings and students the highest. Older students

and students with higher IQs had lower self-reported social difficulties. Furthermore, students who rated themselves as having lower social competence also reported higher rates of depression, which is another factor associated with peer victimization.

Numerous studies have noted that poor social skills correlate with peer victimization. Social skills were a prominent variable in Crawford and Manassis' (2011) model of victimization. In their assessment of rates of peer rejection among campers with disabilities, Collins et al. (2011) noted that campers who received 'don't like' nominations by their peers were more likely to have weak interpersonal skills. Jones and Frederickson (2010) reported that peers rated their classmates with ASD as being less pro-social and Rotheram-Fuller et al. (2010) found that children with ASD frequently misinterpreted peer relationships by nominating peers as close friends who did not reciprocate such nominations. Baumeister et al. (2008) found a strong correlation between peer victimization and social problems among adolescents with learning disabilities.

Fox and Boulton (2005) identified specific social skill deficits that were associated with peer victimization among late elementary students. Three-hundred-thirty participants between the ages of 9 and 11 were asked to rate themselves, a peer that 'gets bullied a lot' and a peer that 'never gets bullied' on 20 different social skill items. The social skill items included statements such as, 'Talks very quietly' and 'Annoys other kids or gets on other kids' nerves.' Teachers were then asked to rate two researcher-selected students on the same 20 social skills. One of the students selected for the teacher rating was highest peer-nominated student for 'gets bullied a lot,' while the second student was the highest peer-nominated student for 'never gets bullied.'

Using these data, the authors classified the participants as victims or non-victims. Teacher, peer and self-reports indicated that victims typically looked scared and weak, and acted

like an unhappy person. Furthermore, peer and self-reports specified that victims also gave into the bully easily, cried when picked on and talked very quietly. Teacher reports added that victims often acted in a provocative way by annoying other children or making statements that encouraged further bullying.

By gathering self, peer and teacher reports, Fox and Boulton (2005) were able to gain an in-depth understanding of the types of socially inappropriate behaviors that elicit negative responses from peers. However, given the lack of a definition of bullying, it is best to assume that this study was investigating peer victimization as intentionality and an imbalance of power were not measured.

There is less research studying the role of communication deficits in predicting peer victimization among children with ASD. However, Cappadocia et al. (2012), incorporated communication skills as a separate predictor of victimization in their study of personal factors and contextual factors that predict victimization. Their results indicated that victimized children with ASD were five times more likely to have higher levels of communication difficulties than children who were not victimized.

One reason that there may be less research investigating the role of communication skills in predicting peer victimization among groups of children with ASD, is that most studies investigate children with HFASD or AS. As defined by the DSM-III-R (American Psychological Association, 1987), children with AS do not display the same deficits in communication as children with autistic disorder. Therefore it is important to understand how communication skills contribute to experiences of peer victimization separately from social skills.

Comprehensive interpretations of personal factors. Many of the personal factors linked to peer victimization are common among children with disabilities (Mishna, 2003), and

individuals with ASD (Humphrey & Symes, 2011; Mazurek & Kanne, 2010). Since these factors rarely occur in isolation it is helpful to measure how they relate to peer victimization when they coexist.

Hodges et al. (1999) considered the relationship between victim characteristics and peer victimization when surveying 4th and 5th grade French-Canadian children and teachers. A total of 533 students were surveyed in the beginning of the study (Time 1); a follow-up survey was conducted with 393 of these students several months later (Time 2). Students were administered the Peer Victimization Scale (Perry, Kusel, & Perry, 1988) and Friendship Qualities Scale (Bukowski, Hoza, & Boivin, 1994); while teachers completed the Children's Behavioral Questionnaire (Rutter, 1967). The Peer Victimization Scale (Perry et al., 1988) asked students to nominate two students for each item on a list of victimization characteristics. Characteristics included statements such as *gets hit*, or *called names*. The scores were summed and standardized for each nominated student in a class.

The Friendship Qualities Scale (Bukowski et al., 1994) required students to nominate three best friends and answer questions about protection, companionship, security and conflict. Finally the Children's Behavioral Questionnaire (Rutter, 1967) asked teachers to rate students' internalizing behaviors and externalizing behaviors on a three-point Likert scale.

Inappropriate behaviors predicted increases in peer aggression suggesting that such characteristics make these students more vulnerable to peer victimization. The authors hypothesized that externalizing behaviors provoked the aggressors while internalizing behaviors reinforced their aggression. Victimization was predicted by negative behaviors over and above control variables such as age, sex, and initial levels of negative behaviors. Hodges et al's (1999) findings are supported by recent studies which have shown that relational victimization of

children with disabilities was predicted by characteristics such as problem behaviors (Collins et al., 2011; Jones & Frederickson, 2010), hyperactivity, shyness and emotional problems (Jones & Frederickson, 2010).

In a similar study, Baumeister et al. (2008) surveyed 77 children and adolescents with learning disabilities. Participants were administered the Child Behavior Checklist (CBCL; Achenbach, 1991), Children's Depression Inventory (CDI; Kovacs, 1992) and Revised Children's Manifest Anxiety Scale (RCMAS; Reynolds & Richmond, 1978). The CBCL (Achenbach, 1991) is a 113 item questionnaire designed to assess behavior problems and social competencies by measuring eight clinical subscales: withdrawn, somatic complaints, anxious/depressed, social problems, thought problems, attention problems, delinquent behavior and aggressive behavior. The RCMAS (Reynolds & Richmond, 1978) and CDI (Kovacs, 1992) was also administered and measured participants' internalizing behaviors (anxiety and depression) by asking students to rate the occurrence of specific symptoms.

Parents were also given several measures. The CBCL Peer Victimization Scale (McCloskey & Stuewig, 2001) is a series of questions embedded in the CBCL and has been used to assesses parents' views of their child's peer problems. Parents also completed the Conners Parent Rating Scale-Revised (Goyette, Conners, & Ulrich, 1978) designed to summarize their children's symptoms of externalizing behaviors such as hyperactivity, oppositional behavior, and cognitive problems.

The authors used Pearson product moment correlations to relate the subscales of the CBCL, CBCL Peer Victimization Scale, RCMAS, CDI and Conners assessments. They reported correlations with large effect sizes (defined as .5 or greater) between peer victimization and seven of the eight subscales of the CBCL: withdrawal, anxiety, depressive symptoms, social

problems, thought problems, attention problems, and disruptive behavior. Peer victimization was also correlated with somatic complaints, anxiety or shyness and reports of depression with medium (.3 or greater) effect sizes. A correlation with a small effect size (below .1) was found between peer victimization and cognitive problems, inattention, perfectionism, and psychosomatic behaviors. Children with comorbid psychiatric diagnoses reported the greatest rates of peer victimization.

It is important to note that many of the preceding studies supporting a correlation between internalizing and externalizing behaviors with peer victimization were unable to determine the direction of the relationship. It is likely that the presence of risk factors such as depression, can also be an outcome of previous experiences of peer victimization. Therefore, results should be interpreted with this understanding and future studies should take steps to better understand the direction and nature of these relationships.

Contextual factors. As discussed in the previously presented theoretical frameworks (Crawford and Manassis, 2011; Hodges et al., 1997), personal factors alone do not fully predict peer victimization. Contextual risk factors can also contribute to rates of victimization. Contextual risk factors linked to peer victimization include: social acceptance and restrictiveness of classroom setting.

Social acceptance. As noted earlier, *social acceptance* will be used to describe the degree of acceptance and participation of an individual with his or her peers. Children with ASD are less accepted by their peers (Jones & Frederickson, 2010; Rotheram-Fuller et al, 2010; Symes & Humphrey, 2010) and less centrally located in their social groups (Kasari, Locke, Gulsrud, & Rotheram-Fuller, 2011). Therefore, they likely have less protection from peers to ward off acts of peer aggression. As noted in a study (Estell et al., 2009) using a variety of peer,

teacher and self-rating scales to map participants' peer relationships, peer victimization was associated with low social preference and isolation. Isolated students were victimized at higher rates than students in popular and unpopular groups. This is supported by previous research (Hodges et al., 1999), which reported that frequently-victimized students are isolated in school.

Symes and Humphrey (2010) examined social inclusion of students with ASD in a mainstream setting. Typically-developing students (n = 40), students with ASD (n = 40) and students with Dyslexia (n = 40) attending a secondary mainstream school in the United Kingdom participated in this study. Participants completed the Social Inclusion Survey (SIS; Frederickson & Graham, 1999); My Life in School Checklist (MLSC; Arora & Thompson, 1987); and the Social Support Scale for Children (SSSC; Harter, 1985).

Participants were asked to nominate peers with whom they liked to work with and play by using the SIS (Frederickson & Graham, 1999). The MLSC (Arora & Thompson, 1987) was used to measure the frequency of different types of peer aggression. Participants reported the number of occurrences of specific acts of peer aggression such as kicking or name-calling over the course of the previous week. Finally, the SSSC (Harter, 1985) measured participants' perceived social support from teachers, classmates, parents and friends by asking participants to rate their agreement with statements on a 4-point Likert scale.

Symes and Humphrey (2010) used the SIS (Frederickson & Graham, 1999) to find that participants with ASD were more likely to be rejected and less likely to be accepted by peers. The ASD group was less accepted than both typically-developing peers and peers with Dyslexia. Furthermore, this sample of students experienced increased rates of peer aggression and lower levels of social support from their classmates and friends. These results are especially important because the participants with ASD were compared to students with Dyslexia, supporting the

notion that this population of students experiences greater rates of peer aggression than other disability categories.

In a study published the same year, Humphrey and Symes (2010) used a quasi-experimental design to measure experiences of bullying and social support. Using the same 120 typically-developing students, students with ASD and students with dyslexia, researchers asked participants to complete self-report measures about their experiences of bullying and feelings of social support in an inclusive school setting. High levels of social support were associated with lower rates of peer aggression with classmate support predicting the lowest rates of peer aggression. Unfortunately, participants with ASD reported the highest rates of peer aggression and lowest levels of social support from parents, classmates and friends.

Humphrey and Symes' (2010) study calls into question the role of social support and friendship in protecting individuals against peer victimization. Papafratzeskakou et al. (2011) determined that the relationship between depression and victimization was moderated by parental and peer support. Two types of peer aggression were considered: physical and emotional victimization. Two-hundred-sixty-one children between the ages of 10 and 14 participated in the study. Using a series of self-report measures, authors assessed participants' reported victimization, depressive symptomatology and parental and peer attachment.

Depressive symptoms were linked to both physical and emotional victimization. Structural equation modeling allowed authors to draw a number of conclusions about the moderating effects of physical and emotional victimization. Peer relationships acted both as a protective factor against peer victimization and moderator between peer victimization and depressive symptomatology. Participants who reported having more friends were less likely to be victimized. Furthermore, stronger friendships were associated with increased peer support

and appeared to moderate the effects of physical victimization on depressive symptoms. Parental support acted a protective factor against depression in the presence of multiple types of victimization.

The authors (Papafratzeskakou et al., 2011) acknowledged that the relationship between depressive symptomatology and peer support is unclear. Specifically, it is not known whether high peer support leads to lower depression or whether adolescents who do not exhibit depressive symptoms are better able to develop strong relationships. Similarly, there can be a reciprocal relationship between depression and peer support in that low peer support leads to increased rates of depressive symptoms, which further reduces peers support.

The power of friendship was studied among adolescents with disabilities. In a study examining the protective nature of friendship among girls with ADHD, Cardoos and Hinshaw (2011) collected data during a 5-week all-girls summer camp during the summers of 1997, 1998 and 1999. A sample of 228 girls with ($n = 140$) and without ($n = 88$) ADHD participated in this study. The girls ranged in age from 6 to 12 and were from ethnically diverse backgrounds. Prescreening measures asked parents to complete the Swanson, Nolan and Pelham Checklist (SNAP-IV; Swanson, 1992) and Child Behavior Checklist (CBCL; Achenbach, 1991). Additionally, teachers completed the SNAP-IV (Swanson, 1992) and Teacher Report Form (TRF; Achenbach, 1991) of the CBCL.

Once camp started, socio-metric interviews were completed at the end of weeks 1, 3 and 5. The measures included a peer nomination task that asked participants to nominate up to three girls that the participant considered best friends; reciprocal nominations were considered a valid friendship. A second peer nomination task asked participants to nominate up to three girls that they thought were victimized. The authors provided the girls with two definitions: relational

victimization and overt victimization. These were the same definitions adapted earlier for this study. The total number of nominations divided by the total number of possible nominations that could be received provided each participant with victimization ratio.

Results indicated that internalizing behaviors, externalizing behavior and social competence were highly correlated with peer victimization. When compared to the comparison group, girls with ADHD had lower social competence, fewer reciprocal friendship nominations and higher scores of internalizing and externalizing behaviors. Finally, girls with ADHD had significantly higher scores of victimization than the comparison group.

A series of regression analyses indicated that the interaction of the target behavioral predictors for each regression (internalizing behaviors, externalizing behaviors or social competence) and the presence of a friend significantly predicted victimization. When diagnosis was accounted for, the interaction was not significant suggesting that girls with a comparison group friend (non-ADHD) were not more protected than girls with a friend with ADHD. Post-hoc analyses indicated that for participants with no friends, there was a stronger association between internalizing behaviors, externalizing behaviors and social competence with victimization than for participants with at least one friend. The results support the importance of friendships for girls with ADHD.

This series of findings (Cardoos & Hinshaw, 2011; Hodges & Symes, 2010; Papafratzeskakou et al., 2011; and Symes & Hodges, 2010) supports the models outlined by Hodges et al. (1999) and Crawford & Manassis (2011), which found that quality friendships were linked to reductions in peer victimization in the presence of personal risk factors.

Restrictiveness of classroom setting. Given the nature of peer relationships, it is important to investigate how class setting can impact rates of peer aggression. As part of a larger

project investigating the effectiveness of the KiVa anti-bullying program, Kärnä, Voeten, Poskiparta and Samivalli (2010) examined how bystanders' actions moderated the effects of peer victimization among 8,248 Finnish students in late elementary school. Using self reports and a peer nomination strategy, authors measured bystander behavior, victimization, social anxiety, and peer rejection.

Similar to previous studies (Estell et al, 2009; Humphrey & Symes, 2010; Papafratzeskakou et al, 2011; Symes & Humphrey, 2010) students who were rejected by their peers and/or socially anxious were more likely to experience peer victimization. When gender and age were controlled, social anxiety and lack of peer acceptance predicted peer victimization.

In addition to these personal risk factors, classroom-based trends were also identified. Vulnerable students experienced greater rates of peer aggression in classrooms where bullying was reinforced by classmates. Reinforcing behaviors included gathering to watch the abuse, verbally inciting the bully and laughing at the victim. However, students in classrooms where victims were defended by onlookers experienced less peer aggression. The authors measured 'defending' by how often children reported that they stopped bullying behaviors or comforted the victim. This type of classroom environment supports the notion that a lack of social acceptance can increase victimization. A classroom environment that encourages supportive peers is less likely to foster increased rates of peer aggression.

The moderating effects of reinforcing and defending on social anxiety and peer rejection (lack of social acceptance) were also examined. While peer rejection predicted victimization during low levels of reinforcing this relationship was strengthened in environments with high levels of reinforcing. Social anxiety predicted victimization in a similar fashion in the presence of reinforcing. However, only high levels of defending weakened the effects of relational

victimization and social anxiety. In other words, while only a low level of reinforcing was needed to increase the risk of peer rejection and social anxiety, high levels of defending were needed to act as a protective factor. While the design of the study prevented the authors from drawing conclusions about directionality or causality of the relationships, its large sample size and large effect sizes make this study valuable.

The impact of classmates' defending and reinforcing on peer victimization calls into question how self-contained classes impact rates of peer aggression. In a self-contained environment, children may not develop relationships with peers who can adequately defend them in situations of peer victimization. Rose et al. (2011) accounted for educational setting when comparing rates of physical aggression and bullying behaviors among three groups of middle and high school-aged students: special education students in an inclusive setting, special education students in a self-contained setting and typically-developing students attending general education.

Special education students reported greater rates of peer aggression and bullying perpetration when compared to their typically-developing peers. Furthermore, students in a self-contained setting reported the greatest rates peer aggression, perpetration and fighting. Interestingly, middle school students in a self-contained environment experienced greater rates of peer aggression when compared to their peers in an inclusive environment. However, in high school, self-contained and inclusive students experienced similar rates of peer aggression. The author proposed several possible reasons for this discrepancy. These results may be the result of the positive effects of inclusive practices. Conversely, students in a self-contained setting may display more significant behavioral difficulties or cognitive delays making them more susceptible to victimization.

Unfortunately, these results do little to clarify the role of inclusion and self-contained classrooms on peer victimization. Saylor and Leach (2009) assert that self-contained students' social isolation paired with these students' weak social skills make them more susceptible to victimization. While enhancing a child's social network may serve as a protective factor; educating children with disabilities in an inclusive setting may also provide an environment where students with disabilities are more susceptible to victimization because their personal risk factors become more evident.

Summary and Rationale

Bullying and other forms of peer victimization have received increased attention in current literature because of the negative effects they can have on victims. Consequent loneliness, depression, low self-esteem, anxiety and suicidal ideation have been linked to prior peer victimization for individuals both with and without disabilities (Baumeister et al., 2008; Bond et al, 2001; Hawker & Boulton, 2000; Hunter et al., 2007; Siegal et al., 2009). Children with ASD are able to perceive peer victimization (van Roekel et al., 2010) and are negatively affected by experiences of such victimization (Masten, et al., 2011; McPartland et al., 2011; Shtayermman, 2007), albeit in a different manner than their peers (Masten, et al., 2011; McPartland et al., 2011; van Roekel et al., 2010).

Current research indicates that individuals with disabilities and chronic conditions experience increased rates of peer aggression in comparison to peers with typical development (Estell et al, 2009; Nabuzoka, 2003; Pittet, et al., 2011; Rose et al., 2009; Saylor & Leach, 2009). Youth with ASD and autistic traits appear to be at particular risk for peer victimization when compared to typically-developing peers (Cappadocia, et al., 2011; Little, 2002), and peers with

other disorders (Bejerot & Mortberg, 2009). However, it is unclear if autism or autistic traits specifically make a child more vulnerable to peer victimization than peers with other disabilities.

A number of personal and contextual factors have been linked to peer victimization. Personal factors that are commonly associated with increased peer aggression include internalizing behaviors such as depression and anxiety, externalizing behaviors such as inattentiveness and atypical behaviors, and weak social and communication skills, while contextual factors that are commonly associated with increased peer aggression include low social acceptance, and restrictive classroom setting (Baumeister et al., 2008; DeRosier & Mercer, 2009; Estell et al., 2009; Fox & Boulton, 2005; Hodges et al., 1999; Mahjouri & Kasari, 2011; Symes & Humphrey, 2010; Rose, Monda-Amaya, & Espelage, 2011). Many of the factors associated with victimization are common traits of children with ASD and other disabilities. For example, the DSM-III-R (American Psychological Association, 1987) diagnostic criteria for autistic disorder includes deficits in social and communication skills.

Previous studies have proposed models that consider how personal and contextual factors interact to predict victimization (Hodges & Perry, 1999; Hodges et al., 1997), while others have investigated how these factors interact in specific populations, such as children with anxiety disorders (Crawford & Manassis, 2011) or ASD (Cappadocia et al., 2012).

The present study used a caregiver survey to collect information about personal factors, contextual factors and frequency of peer aggression among children with ASD, children with other disabilities, and children without a disability. Based on factors identified in previous studies, the personal factors that were assessed in this study included anxiety, depression, attention problems, thought problems and autistic characteristics.

Two contextual factors were considered for participants who had children with disabilities. Of the contextual factors that were discussed in previous studies, restrictiveness of classroom setting was measured in the present study. An additional contextual factor, hours of special education services, was also included. These two contextual factors were studied separately from children without disabilities because children with disabilities experience a greater range of school settings (self-contained to fully included) and educational experiences at school (e.g. specialized instruction) that are not relevant to students without disabilities. Previous studies have also identified peer acceptance as a significant contextual factor. However, this study did not include peer acceptance because it would be difficult to accurately measure using a caregiver survey. Studies that examine peer acceptance typically use peer nomination strategies (e.g. Cardoos & Hinshaw, 2011), which would require the participation of peers and teachers.

Using the definitions outlined earlier, the term *peer aggression* refers to a single act of abuse toward a child by a peer (Hunter et al., 2007). Peer aggression was chosen for this study because it offered the most precise picture of what participants' children were experiencing in school. Unlike bullying, peer aggression did not involve speculation about the aggressors' intent. Furthermore, when participants reported multiple incidents of peer aggression in a month, the experiences were classified as peer victimization. The term *peer victimization* refers to repeated acts of peer aggression (Hunter et al., 2007; Kochenderfer & Ladd, 1996).

Bullying is described as repeated acts of peer aggression by a peer or group of peers marked by an imbalance of power and the intention to cause distress or harm (Naylor, Cowie, Cossin, de Bettencourt, & Lemme, 2006). Bullying was not measured in this study because it would be impossible to reliably measure the intentionality of the aggressors.

Research Questions

1. Is there a difference between children with ASD, children with other disabilities (OD), and children without a disability (WD) in parent-reported experiences of peer aggression or peer victimization?

1a. Do children with ASD, OD, and WD differ in the frequency with which they experience peer aggression?

1b. Does the proportion of children who experience peer victimization differ among children with ASD, OD and WD?

2. Which factors are associated with peer aggression and peer victimization among children with ASD, OD, and WD?

2a. Are the personal factors of autistic traits, anxious/depressed, withdrawn/depressed, attention problems, and thought problems correlated with the frequency of peer aggression experienced by children with ASD, OD, and WD?

2b. Are the personal factors of autistic traits, anxious/depressed, withdrawn/depressed, attention problems, and thought problems associated with experiences of peer victimization among children with ASD, OD, and WD?

3. Which factor(s) best predict peer aggression and peer victimization among children with ASD, OD, and WD?

3a. Which set of personal factors best predicts the frequency of peer aggression among children with ASD, OD, and WD?

3b. Which set of personal factors best predicts peer victimization among children with ASD, OD, and WD?

4. Which factors are associated with peer aggression and peer victimization among children with disabilities (ASD and OD groups combined)?

4a. Are personal factors (autistic traits, anxious/depressed, withdrawn/depressed, attention problems, and thought problems) and/or contextual factors (restrictiveness of classroom setting, and hours of special education services) correlated with the frequency of peer aggression experienced by children with disabilities?

4b. Are personal factors (autistic traits, anxious/depressed, withdrawn/depressed, attention problems, and thought problems) and/or contextual factors (restrictiveness of classroom setting, and hours of special education services) associated with experiences of peer victimization among children with disabilities?

5. Which factor(s) best predict peer aggression and peer victimization among children with disabilities?

5a. Which set of personal factors (autistic traits, anxious/depressed, withdrawn/depressed, attention problems, and thought problems) and/or contextual factors (restrictiveness of classroom setting, and hours of special education services) best predicts the frequency of peer aggression among children with disabilities?

5b. Which set of personal factors (autistic traits, anxious/depressed, withdrawn/depressed, attention problems, and thought problems) and/or contextual factors (restrictiveness of classroom setting, and hours of special education services) best predicts peer victimization among children with disabilities?

Chapter III

Method

Participants

The sample of participants consisted of 111 caregivers of children with ASD, children with other disabilities, and children without a disability attending public, private and charter schools. Caregivers of children in home-school or private therapeutic settings were not recruited to participate in this study because their children likely do not have the same exposure to peer experiences as children in a school setting.

Biological parents, step-parents, foster parents, adoptive parents, grandparents, and other caregivers were recruited for participation. Only one caregiver from each household was asked to respond to the survey about a child in their care between the ages of 9 and 15. Participants with more than one child in their household were asked to respond to the survey only once about one of the children in their care.

A total of 170 surveys were returned during the recruitment period, which lasted from April 2013 to November 2013. Since snowball sampling was used, it is impossible to know precisely how many potential participants were given access to information about the study and the survey itself. However, subscription rates for the organizations that distributed the survey exceeded 4000 individuals suggesting a response rate of less than 5%. Of the 170 returned surveys, 36 were unusable because they were not completed in full. Further, an additional seven participants were excluded because their child was too old, too young, and/or the participant completed the survey about himself or herself.

The remaining 127 participants were considered for the ASD, Other Disability (OD), or Without Disability (WD) groups based on parent-reported diagnoses, and scores on the Autism Spectrum Quotient-Adolescent Version (AQ; Baron-Cohen, Hockstra, Knickmeyer, & Wheelwright, 2006). Participants in the ASD group were required to have a parent-reported diagnosis of an autism spectrum disorder and an AQ score of 30 or greater. A score of 30 or greater was selected because in the original study (Baron-Cohen et al, 2006), individuals with ASD consistently scored higher than 30 and individuals without ASD never scored higher than 30. Participants in the OD and WD groups did not have a parent-reported autism spectrum disorder and were required to have an AQ score of 29 or below. Sixteen participants were excluded from this study because their children had a participant-reported autism diagnosis and an AQ score of 29 or lower, or their children did not have a participant-reported autism diagnosis and an AQ score of 30 or above. This resulted in a final sample of a 111 participants.

A total of 47 participants were assigned to the ASD group. Of the remaining 64 participants, 32 did not have any mental health or disability diagnoses and were assigned to the WD group. The final 32 participants had a disability diagnosis other than ASD and were assigned to the OD group. A summary of these diagnoses can be found in Table 4 and included ADD, ID, and LD.

Research Design

A parent survey approach was used to collect data. It consisted of an Investigator-Designed Survey, the Child Behavior Checklist (CBCL; Achenbach & Rescorla, 2001), and the Autism Spectrum Quotient (AQ; Baron-Cohen et al., 2006). The study research design included a group comparison between the ASD, OD, and WD groups. The dependent variables that were measured within each group were (a) the frequency of peer aggression in a four-week period, and

(b) the proportion of children who experienced peer victimization (3 or more experiences of peer aggression in a 4 week period). The research design also included correlation analyses between personal and contextual factors and the frequency of peer aggression, and multiple linear regression analyses to determine the best set of predictors for peer aggression for the sample as a whole. The final component of the research design was a forward logistic regression analysis to determine the best set of predictors for peer victimization.

Materials. Three surveys were used in this study: an Investigator-Designed Survey, subscales of the CBCL (Achenbach & Rescorla, 2001) and the total score of the AQ (Baron-Cohen, Hockstra, Knickmeyer, & Wheelwright, 2006).

Investigator-designed survey. The first section of the Investigator-Designed Survey gathered demographic information about the participant (caregiver). The second section asked the participants to report demographic information about their children. Finally, the third section asked the participants to describe their children's experiences of peer aggression at school. A sample of this survey can be found in Appendix A.

Demographic information about participants and their children. Demographic and background information was gathered about the participants and their children in the first two sections of the survey entitled 'About You' and 'About your Child'. These sections requested information about the age of the participants and their children; gender of their children; and role in their children's life (mother, father, foster parent, adoptive parent or grandparent). Additionally, information was collected about the type of school that their children attended (private, public or charter; special education school and/or general education school). Participants were asked to note if their children's schools implemented an anti-bullying program in the past year.

These sections concluded by asking participants to report their children's disabilities and mental health diagnoses. Their options included autistic disorder or autism, Asperger syndrome, Pervasive Developmental Disorder (PDD), Pervasive Developmental Disorder-Not Otherwise Specified (PDD-NOS), Attention Deficit Disorder/Attention Deficit Hyperactivity Disorder (ADD or ADHD), Intellectual Disability (ID), Obsessive Compulsive Disorder (OCD), Social Anxiety (SA), Generalized Anxiety Disorder, depression, and Conduct Disorder (CD). This section concluded by asking participants to report their children's special education status and restrictiveness of their children's classroom. Participants whose children received special education services indicated the hours of service that their children received in school. Responses to this question were used to measure the contextual variable of Hours of Special Education Services. Finally, participants indicated the setting in which their children were educated. Response choices were scaled from most restrictive ('1' self-contained classroom for all academic and non-academic activities) to least restrictive ('5' independent participation in a general education classroom for all academic and non-academic subjects). Participants' responses to this question were used to measure the contextual variable Restrictiveness of Classroom Setting.

Peer aggression and peer victimization at school. The third section of the survey (Bullying and Peer Aggression at School) asked participants to report their children's experiences of peer aggression during the last four weeks of school. Caregiver reports of peer aggression and peer victimization have been used in previous studies (e.g. Cappadocia, Weiss and Pepler, 2011; Little, 2002) and were chosen for this study because they are more likely to yield an accurate reflection of the difficulties faced by children with disabilities over self-report

measures. Responses from this section were used to measure the two dependent variables: peer aggression and peer victimization.

Participants were provided with a definition of *peer aggression* adapted from Cardoos and Hinshaw's (2011) description of overt and relational victimization:

Peer Aggression is when an individual is physically or verbally attacked or intentionally ignored or excluded by his or her peers. This can include teasing, name-calling, shunning, spreading rumors and physical altercations such as hitting or kicking.

Participants were asked to report how many days their children experienced an act of peer aggression on school grounds in the most recent four weeks of school. Indicating the frequency of peer aggression allowed repeated acts of peer aggression to later be categorized as *peer victimization* during analysis.

Peer victimization is a form of peer abuse in which an individual is the target of repeated acts of peer aggression (Hunter et al., 2007; Kochenderfer & Ladd, 1996). Since previous studies have not defined how many acts of peer aggression constitute peer victimization, this study classified three or more days of peer aggression over a 4 week period as peer victimization. When a participant reported three or more days of peer aggression, it was classified as peer victimization during analysis. When a participant reported two or fewer days of peer aggression, it was not classified as peer aggression.

Child Behavior Checklist. The CBCL (Achenbach & Rescorla, 2001) is a parent-report measure used to assess a child's behavioral and emotional strengths and weaknesses. It can be used with ages 6 through 18 and can be used to produce two different sets of profiles. The CBCL can be scored to produce either Competence and Syndrome scores or DSM-Oriented scores. The Competence Scales (activities, social, and school) and Syndrome Scales

(anxious/depressed, withdrawn/depressed, somatic complaints, thought problems, attention problems, rule-breaking behavior, and aggressive behaviors) are empirically-based and focus on behavior problems and competencies. The DSM-Oriented scales (affective problems, anxiety problems, somatic problems, attention deficit/hyperactivity problems, oppositional defiant problems, and conduct problems) are meant to correspond to DSM categories and were grouped from previously-developed CBCL items based on face validity. The present study will mirror previous studies (e.g. Baumeister et al., 2008), which have used the Syndrome scales instead of the DSM-Oriented scales. However, unlike Baumeister et al. (2008), this study will not use the Peer Victimization Scale. The Peer Victimization scale was devised by McCloskey and Stuewig (2001) and is comprised of four items that are already embedded within the CBCL. The four items are: (1) gets in many fights, (2) doesn't get along with other kids, (3) gets teased a lot, and (4) is not liked by other children. While these items address issues closely related to peer aggression and peer victimization they do not measure peer victimization using the widely-accepted definitions used by this study (e.g. Hunter et al, 2007).

The Syndrome Profile of the CBCL is composed of 113 statements across eight different subscales: anxious/depressed ($\alpha = .82$), withdrawn/depressed ($\alpha = .89$), somatic complaints ($\alpha = .92$), social problems ($\alpha = .90$), thought problems ($\alpha = .86$), attention problems ($\alpha = .92$), rule-breaking behavior ($\alpha = .91$) and aggressive behavior ($\alpha = .90$). Further, the anxious/depressed, withdrawn/depressed, and somatic complaints subscales can be grouped to form the Internalizing Scale ($\alpha = .91$). The rule-breaking behavior and aggressive behavior subscales can be grouped to form the Externalizing Scale ($\alpha = .92$). Five sub-scales were used for this study based on factors identified as significant personal predictors of peer victimization in previous studies: anxious/depressed, withdrawn/depressed, thought problems, and attention problems. A

summary of the internal reliability of the CBCL, as measured by Cronbach Alpha scores, calculated for the participants in this study can be found in Table 1.

Table 1
Reliability: CBCL and AQ for Participants in the Present Study

| | Total Sample (N=111) |
|--|----------------------------|
| CBCL | |
| Anxious/Depressed | 0.81 |
| Withdrawn/Depressed | 0.69 |
| Thought Problems | 0.78 |
| Attention Problems | 0.85 |
| AQ-Total Score (Autistic Traits) | 0.76 |

Autism Spectrum Quotient-Adolescent Version. The Autism Spectrum Quotient-Adolescent Version (AQ; Baron-Cohen, et al, 2006) was developed as a tool to determine the extent of autistic traits displayed by an individual. The authors noted that it is not a diagnostic measure, but instead an assessment that can be used as a screening tool or a way to measure autistic traits in an individual.

Unlike the original AQ (Baron-Cohen, Wheelwright, Skinner, Marting & Clubley, 2001), the adolescent version was developed for children between the ages 9 and 15 and is a parent-report instead of a self-report measure. The AQ (Baron-Cohen et al, 2006) consists of five subscales: Communication, Social, Imagination, Attention to Details, and Attention Switching. Published Cronbach’s Alpha coefficients range from 0.66 to 0.88 for each of these subscales; it is reported as 0.79 for the AQ measure as a whole. The present study used the total AQ score to assess the personal factor of autistic traits, and to confirm an ASD label. The Social, Communication, Imagination, Attention to Detail, and Attention Switching sub-scales were not

used in this study. The reliability calculated for the AQ for the participants in this study was comparable to the reported Cronbach Alpha (0.76) and can be found in Table 1.

Procedure

Participants were recruited from two sources: (1) parental support groups and (2) professionals who work with children in the targeted age range. Parental support groups who agreed to distribute information about the study served parents of children with and without disabilities. Some of the groups were part of larger organizations which distributed information about a certain disability (e.g. Autism Society of Northern Virginia), geographic area (e.g. DC Urban Moms-and Dads!), or topic (e.g. Wrights Law). While others were self-sustained online chat groups or listservs, which were run by a group of parents (e.g. Rivertown Parents). Professional who agreed to distribute the information to their clients and/or coworkers worked with families and children with and without disabilities in educational and non-educational settings.

Professionals, group leaders, directors and moderators were contacted via email in order to request access to their clients, groups' mailing lists, websites, and/or chat rooms. The email included contact information for the principal investigator, university IRB materials, recruitment materials, and a link to the digital survey. A sample of one of these emails can be found in Appendix B. Phone conferences were arranged with interested groups and professionals in order to describe the study in further detail and to answer questions about the study.

Professionals and groups who agreed to distribute information about the study and its survey were re-sent recruitment materials and a link to the survey to distribute to its members. The recruitment flyer and/or study link were distributed via email, group website, social media (e.g. Facebook), and/or during group meetings. Snowball sampling was encouraged and resulted

in participants from 29 different states. In some instances, a parental support website did not have a moderator. In these cases, the group rules were checked to confirm that online recruitment was not forbidden; if acceptable, information about the study (including its IRB number) was posted with a link to the survey. The recruitment flyer can be found in Appendix C and a list of organizations and individuals who distributed study information can be found in Table 2.

Table 2
Professionals and Groups Who Distributed Recruitment Information and Study Link

| Parental Support Groups |
|---|
| Wrights Law |
| DC Urban Moms (and Dads!) |
| Autism Society-Northern Virginia (AS-NV)* |
| National Autism Association-NY Metro Chapter* |
| Parents of Autistic Children-Northern Virginia Chapter* |
| Autism_Maryland* |
| Westchester County, New York Asperger Network* |
| Rivertown Parents |
| Professionals |
| Special Educators* |
| Private Tutors |
| Special Education Advocates* |
| Special Education Pro-Bono Lawyer* |

Note. *Denotes professionals and groups who only served individuals and families with disabilities. All other groups were not disability-specific.

The caregiver survey began with general directions and was followed by the Investigator-Designed Survey (About You, About your Child, and Bullying and Peer Aggression at School), AQ, and CBCL. The survey was available in paper or digital formats; however, all participants opted to complete the digital form of the survey. The digital survey was available through *SurveyMonkey* and began with information about participants' rights and a consent letter;

participants indicated consent by completing and submitting the survey. The participants' rights and consent letter can be seen in Appendix D.

After the survey closed, the responses for each participant were downloaded for scoring. Responses were reported verbatim for each participant. Responses to the investigator-designed survey were assigned numeric codes and are described in detail below. Responses to the CBCL and AQ were transcribed and scored using published guidelines. *T* scores were calculated for subscales of the CBCL based on the age and gender of participants using ASEBA Web-link software.

Scoring and Data Analysis

Investigator-designed survey. Each participant was assigned an identification number. Responses to demographic and background questions were assigned a numeric code for analysis. One independent variable (restrictiveness of classroom setting) and two dependent variables (peer aggression and peer victimization) were measured by the investigator-designed survey. Caregiver's reports of restrictiveness of classroom setting for participants in the ASD and OD groups ranged from 1 to 5. For these items, caregivers were asked to select which statement best described their child's classroom environment. A score of '5' was assigned if they selected "independent participation in a general education classroom for all academic and non-academic subjects. A '4' was assigned if the participant selected "general education classroom with 'pull-out' or 'push-in' services by a special educator and/or paraprofessional." A '3' was assigned if "equal time in both a special education and general education" was selected. Participants who selected "self-contained classroom for academic subjects only" were assigned a '2.' Participants who selected the most restrictive setting, a "self-contained classroom for all academic and non-academic subjects," were assigned a 1.

The main dependent variable, peer aggression, was a continuous variable because participants were asked to record the number of days that their child experienced an act of peer aggression in the past four weeks of schools. Therefore, scores for the dependent variable ranged from 0 to 20, with 20 being the maximum number of school days a child could experience an act of peer aggression in a four-week period.

The second dependent variable, peer victimization, was determined based on the number of reports of peer aggression in the four-week period. Two or fewer days with reported acts of peer aggression were scored as a '0,' indicating the acts did not reach the threshold of peer victimization. Three or more acts of peer aggression over a four-week period were scored as a '1,' indicating the acts met the threshold of peer victimization.

Child Behavior Checklist. Published guidelines were followed when scoring the CBCL (Achenbach & Rescorla, 2001). As per previous studies (e.g. Baumeister, et al, 2008) *T* scores were used for the analysis of the four syndrome scales used in this study (anxious/depressed, withdrawn/depressed, attention problems, and thought problems). Each scale was composed of statements that participants rated on a Likert scale ranging from 0 to 2. *T* scores for the CBCL subscales were calculated for each participant based on the age and gender of their child. All *T* scores are truncated at 50. A syndrome scale *T* score between 50 and 64 is considered normal. A *T* score between 65 and 69 is considered 'borderline' clinical, and *T* score of 70 or greater is considered 'clinical.' A summary of the CBCL and its subscales can be found in Table 3.

Autism Spectrum Quotient. The Autism Spectrum Quotient (Baron-Cohen, 2006) consists of 36 questions that participants respond to on a 4-point Likert scale (Definitely Agree, Slightly Agree, Slightly Disagree, and Definitely Disagree). Depending on the direction of the question, a score of 1 was assigned to abnormal or autistic-like behaviors with participant

selections of either ‘Definitely’ or ‘Slightly.’ A score of 0 was assigned to other responses. A summed score of 30 or greater is associated with a diagnosis of Autism or Asperger’s Syndrome.

A summary of the AQ can be found in Table 3.

Table 3
Summary of Measures and Score Ranges for Dependent and Independent Variables

| Variable | Test Source | Number of Items | Score Range | Variable Type |
|--------------------------------------|--|-----------------|-------------|---------------|
| Peer Aggression | Caregiver Report | 1 | 0 to 20 | DV* |
| Peer Victimization | Caregiver Report | 1 | 0 to 1 | DV* |
| Disability Status | Caregiver Report | 11 | 0 to 1 | IV* |
| Restrictiveness of Classroom Setting | Caregiver Report | 1 | 1 to 5 | IV* |
| Hours of Special Education Services | Caregiver Report | 1 | 2 to 5 | IV* |
| Anxious/Depressed | Child Behavior Checklist (Achenbach & Rescorla, 2001) <i>Anxious/Depressed Subscale</i> | 13 | 3 to 5 | IV* |
| Withdrawn/Depressed | Child Behavior Checklist (Achenbach & Rescorla, 2001) <i>Withdrawn/Depressed Subscale</i> | 8 | 4 to 5 | IV* |
| Thought Problems | Child Behavior Checklist (Achenbach & Rescorla, 2001) <i>Thought Problems Subscale</i> | 15 | 6 to 5 | IV* |
| Attention Problems | Child Behavior Checklist (Achenbach & Rescorla, 2001) <i>Attention Problems Subscale</i> | 10 | 7 to 5 | IV* |
| Autistic Traits | Autism Spectrum Quotient (Baron-Cohen, Hockstra, Knickmeyer, & Wheelwright, 2006) <i>Total Score</i> | 50 | 8 to 5 | IV* |

Note. Restrictiveness of Classroom Setting and Hours of Special Education Services were only measured for those participants in the ASD and OD groups.

*DV - Dependent Variable; IV - Independent Variable

Scoring and analyses. Once survey data were collected and scored, the scores for each of the variables were entered into SPSS 20.0 for analysis. A series of four different analyses were conducted.

Questions 1a and 1b asked if children with ASD, OD and WD differed in experiences of peer aggression (question 1a), and peer victimization (question 1b). A one-way analysis of covariance (ANCOVA) was used to determine if there was a significant difference in the frequency of peer aggression (question 1a) between the ASD, OD, and WD groups. A post-hoc Bonferonni Test was used to determine which groups experienced significantly different rates of peer aggression. Two chi-square tests were used to compare the proportion of children who experienced peer victimization (question 1b) between the ASD, OD, and WD groups for boys and girls.

Questions 2a and 2b asked if personal factors were related to the rate of peer aggression and presence of peer victimization among participants' children. Pearson product-moment correlations between each of the independent variables that measured personal factors and peer aggression were calculated. A series of independent samples t-tests were used to determine if these independent variables differed between participants whose children experienced peer victimization and participants whose children did not experience peer victimization.

Questions 3a and 3b asked which subset of personal factors best predicted the frequency of peer aggression (3a) and likelihood of peer victimization (3b) among participants' children. Independent variables that were significantly correlated with the dependent variable of peer aggression were entered into a stepwise multiple regression analysis to determine which factors best-predicted peer aggression. Independent variables that were significantly different between

children who did and did not experience peer victimization were entered into a forward logistic regression analysis.

Finally, research questions four and five addressed the two disability groups (ASD and OD) in isolation to determine how personal factors (anxious/depressed, withdrawn/depressed, thought problems, attention problems) and contextual factors (restrictiveness of classroom setting and hours of special education services) related to peer aggression and peer victimization among children with disabilities. Questions 4a and 4b asked which personal factors and contextual were related to the rate of peer aggression and presence of peer victimization among children with disabilities. Pearson product-moment correlations between variables that measured personal factors, contextual factors and peer aggression were calculated. Independent samples t-tests were used to determine if personal and contextual variables differed between participants whose children experienced peer victimization and participants whose children did not experience peer victimization.

Questions 5a and 5b asked which subset of personal factors and/or contextual factors best predicted the frequency of peer aggression (5a) and likelihood of peer victimization (5b) among participants' children. Independent variables that were significantly correlated with the dependent variable of peer aggression were entered into a stepwise multiple regression analysis to determine which factors best-predicted peer aggression. Independent variables that were significantly different between children who did and did not experience peer victimization were entered into a forward logistic regression analysis.

Chapter IV

Results

The final sample of 111 caregivers of children with ASD (n = 47), OD (n = 32) and WD (n = 32) was surveyed about their children's experiences of peer aggression and peer victimization in a school setting. The Results chapter is divided into two sections: preliminary analyses and main analyses. First, the preliminary analyses summarize variables that measured demographic information about the participants, their children, and their children's educational environments. The preliminary analyses also include the means, standard deviations (SD) and ranges for relevant dependent and independent variables. Next, the main analyses are presented for each of the five sets of research questions.

Preliminary Analyses

The preliminary analyses begin with a summary of demographic information about the participants and their children. It is followed by a summary of the educational settings and anti-bullying initiatives participants' children experienced in school.

Demographic information: Participants. The final sample of participants consisted of a 111 caregivers from 29 different states. Of the 104 participants, 90.10% reported that they were their children's biological parents; 8.10% reported that they were their children's adoptive parents, and 1.80% of participants reported that they were their children's grandparents. Of these caregivers, 90.10% were female and 9.90% were male. Participants had a mean age of 44.90 years. Caregivers did not differ in age across the three groups of participants (ASD = 44.28, SD = 6.18; OD = 46.88, SD = 5.82; WD = 48.34, SD = 6.92). However, in the case of caregiver gender, the WD group had significantly fewer males than the ASD and OD groups ($\chi^2 = 8.33$, $df = 2$, $p < .05$). The significant difference was likely a reflection of the small number of

male participants across the total sample. A summary of caregivers' gender and role in their children's lives can be found in Table 4.

Table 4
Characteristics of Participants and Their Children: Gender, Caregiver Roles, and Diagnoses

| | ASD | | OD | | WD | | Total | |
|-------------------------------------|-----------|--------------|-----------|--------------|-----------|--------------|------------|------------|
| | n | Percent | n | Percent | n | Percent | n | Percent |
| Caregivers | 47 | 42.34 | 32 | 28.82 | 32 | 28.82 | 111 | 100 |
| Gender | | | | | | | | |
| <i>Male*</i> | 1 | 2.10 | 3 | 9.40 | 7 | 21.90 | 11 | 9.90 |
| <i>Female*</i> | 46 | 97.90 | 19 | 90.60 | 25 | 78.10 | 100 | 90.10 |
| Caregiver Role | | | | | | | | |
| <i>Biological</i> | 45 | 95.70 | 26 | 81.30 | 29 | 90.60 | 100 | 90.10 |
| <i>Adoptive</i> | 2 | 4.30 | 5 | 15.60 | 2 | 6.30 | 9 | 8.10 |
| <i>Grandparent</i> | 0 | 0 | 1 | 3.10 | 1 | 3.10 | 2 | 1.80 |
| Children | 47 | 42.34 | 32 | 28.82 | 32 | 28.82 | 111 | 100 |
| Gender | | | | | | | | |
| <i>Male*</i> | 37 | 78.70 | 16 | 50.00 | 13 | 40.60 | 66 | 59.50 |
| <i>Female*</i> | 10 | 21.30 | 16 | 50.00 | 19 | 59.40 | 45 | 40.50 |
| Diagnoses | | | | | | | | |
| <i>Autism</i> | 28 | 59.60 | 0 | 0 | 0 | 0 | 28 | 25.20 |
| <i>Asperger Syndrome</i> | 19 | 40.40 | 0 | 0 | 0 | 0 | 19 | 17.10 |
| <i>PDD</i> | 3 | 6.40 | 0 | 0 | 0 | 0 | 3 | 2.70 |
| <i>PDD-NOS</i> | 17 | 36.20 | 0 | 0 | 0 | 0 | 17 | 15.30 |
| <i>ADD/ADHD</i> | 27 | 57.40 | 19 | 59.40 | 0 | 0 | 46 | 41.40 |
| <i>ID</i> | 2 | 4.30 | 5 | 15.60 | 0 | 0 | 7 | 6.30 |
| <i>OCD</i> | 6 | 12.80 | 3 | 9.40 | 0 | 0 | 9 | 8.10 |
| <i>Social Anxiety</i> | 3 | 6.40 | 2 | 6.30 | 0 | 0 | 5 | 4.50 |
| <i>Generalized Anxiety*</i> | 19 | 40.40 | 5 | 15.60 | 0 | 0 | 24 | 21.60 |
| <i>Depression*</i> | 4 | 8.50 | 9 | 28.10 | 0 | 0 | 13 | 11.70 |
| <i>Specific Learning Disability</i> | 1 | 2.10 | 7 | 21.90 | 0 | 0 | 8 | 7.20 |
| <i>Other Disability*</i> | 4 | 8.5 | 11 | 34.38 | 0 | 0 | 15 | 13.51 |

Note. *Denotes factors that significantly differed between groups at $p < .05$

Demographic information: Participants' children. The caregivers' children ranged in age from 9 years (108.00 months) to 15 years, 5 months (185 months) with a mean age of 12 years, 2 months (146.01 months). A summary of participants' ages can be found in Table 5.

Table 5
Characteristics of Participants and Their Children: Age and Special Education Hours

| Group | Caregivers | | | Children | | | | | |
|-------|-------------|------|---------|--------------|-------|-----------|---------------------------|-------|--------|
| | Age (years) | | | Age (months) | | | Special Education (hours) | | |
| | M | SD | Range | M | SD | Range | M | SD | Range |
| ASD | 44.28 | 6.18 | 29 - 58 | 145.53 | 2.56 | 108 - 185 | 13.68* | 1.85 | 0 - 35 |
| OD | 46.88 | 5.82 | 32 - 60 | 139.81 | 20.88 | 108 - 174 | 8.06* | 10.96 | 0 - 35 |
| WD | 43.84 | 6.92 | 32 - 64 | 146.01 | 21.75 | 108 - 185 | 0 | 0 | 0 |
| Total | 44.90 | 6.38 | 29 - 64 | 146.01 | 21.75 | 108 - 185 | 8.13 | 11.17 | 0 - 35 |

Note: *Differed at $p < .05$

Like the caregivers, children did not differ in age across the three groups. However, there was a significant difference in child gender between the three groups of participants ($\chi^2 = 12.61$, $df = 2$, $p < .01$), with the ASD group reporting a significantly larger proportion of boys than the WD and OD groups. It was expected that the ASD group would differ from the OD and WD groups in child gender because autism spectrum disorders are more prevalent amongst boys. A summary of child gender can be found in Table 4.

Participants were queried about their children's disability and mental health statuses by being asked to check relevant diagnoses or labels from a list of 11 options. They could check more than one option. There was also an option to fill in a diagnosis under the label "other." When appropriate, these diagnoses were grouped under one of the other 11 categories (e.g. Down syndrome was grouped under intellectual disability), otherwise, the disability was noted as 'other.'

Forty-seven participants (42.34%) noted that their children had been diagnosed or labeled with at least one of the four categories of autism spectrum disorders (Autism/Autistic Disorder, Asperger Syndrome, PDD, PDD-NOS).

In addition to ASD, participants across both the ASD and OD groups noted that their children had received other diagnoses or labels. The next largest group represented was ADD and ADHD with 41.40% of the total sample reporting that their children had received such a diagnosis; prevalence of ADD did not differ between the ASD and OD groups. Eight participants (7.20%) reported that their children had a specific learning disability; there was a significantly greater proportion of children with LD in the OD group than the ASD group ($\chi^2 = 14.59$; $df = 2$, $p < .001$). Seven participants (7.20%) stated that their children had an intellectual disability; this proportion did not differ between the ASD and OD groups.

Participants also reported that their children had received mental health diagnoses of OCD (8.10%), social anxiety (4.50%), generalized anxiety disorder (21.60%) and/or depression (11.70%). Of these mental health problems, a greater proportion of the ASD group reported a diagnoses generalized anxiety ($\chi^2 = 19.32$, $df = 2$, $p < .001$) and a greater proportion of the OD group reported a diagnoses of depression ($\chi^2 = 13.05$, $df = 2$, $p < .001$). A summary of these diagnoses can be found in Table 4.

As a result of these disabilities, 63.50% of the total sample reported that their children received some form of special education services in school. The ASD group received a mean of 13.68 hours ($SD = 1.85$) of special education services a week, and the OD group received a mean of 8.06 hours ($SD = 10.96$) of special education services a week. The ASD group received significantly more hours of special education a week than the OD group ($t(77) = 2.134$, $p < .05$). A summary of special education hours can be found in Table 5.

Participants completed the AQ and CBCL about the children in their care. Results of these measures are summarized in Table 6. *T* scores were calculated for the subscales of the CBCL and ranged from ‘normal’ to ‘clinical.’ Participants in the ASD and OD groups had mean scores that were ‘borderline’ clinical in all subscales except the withdrawn/depressed subscale for the ASD group, and the anxious/depressed and withdrawn/depressed subscales for the OD group, which were classified as “normal.” The WD group had mean *T* scores that fell into the ‘normal’ range for all subscales.

Table 6
Summary of Scores: CBCL and AQ

| | ASD (n=47) | | | OD (n=32) | | | WD (n=32) | | | Total (N=111) | | |
|-------------------------|------------|------|----------|-----------|-------|----------|-----------|------|----------|---------------|-------|----------|
| | Mean | SD | Range | Mean | SD | Range | Mean | SD | Range | Mean | SD | Range |
| CBCL | | | | | | | | | | | | |
| Anxious/ Depressed | 62.15 | 7.62 | 50 to 76 | 59.81 | 10.18 | 50 to 70 | 53.31 | 5.63 | 50 to 66 | 58.93 | 8.73 | 50 to 80 |
| Withdrawn/ Depressed | 59.13 | 6.67 | 50 to 82 | 55.69 | 6.42 | 50 to 70 | 52.31 | 3.37 | 50 to 60 | 56.17 | 6.44 | 50 to 82 |
| Thought Problems | 65.85 | 8.08 | 50 to 82 | 60.06 | 7.76 | 50 to 78 | 52.81 | 4.09 | 50 to 67 | 60.42 | 8.86 | 50 to 82 |
| Attention Problems | 66.66 | 7.45 | 51 to 87 | 63.22 | 15.85 | 51 to 91 | 54.44 | 5.20 | 50 to 69 | 62.67 | 9.68 | 50 to 90 |
| AQ | | | | | | | | | | | | |
| Autistic Traits | 37.47 | 4.24 | 30 to 47 | 19.03 | 7.09 | 0 to 29 | 13.34 | 5.76 | 3 to 29 | 25.20 | 12.14 | 0 to 47 |

Note. CBCL scores are reported as *T* scores and the AQ is reported as Total Score. CBCL *T* scores between 65 and 69 fall into the Borderline Clinical range; CBCL *T* scores of 70 or greater fall into the Clinical range.

Educational setting. Participants reported that their children were educated in a range of school and classroom settings. A summary of these settings can be found in Table 7. A total of 83.80% of the sample noted that their children attended public school, while 14.40% reported that their children attended private school. Only 1.80% stated that their children attended a charter school. A total of 51.40% of participants reported that their children's schools served children with and without disabilities, while the remainder of the participants reported that their children's schools only served special education (9.00%) or general education (39.60%) students. There was not a significant difference in school setting between the three groups of participants.

Participants also described anti-bullying initiatives at their children's schools, which are also summarized in Table 7. A total of 57.70% reported that their children's schools implemented an anti-bullying program in the past academic year. These plans ranged from school assemblies (45.00%) to small group (25.20%) or classroom (33.30%) lessons. In addition to assemblies and lessons, 42.30% of participants noted that they saw anti-bullying posters or signs in their children's schools. There was not a significant difference in the presence of anti-bullying programs between the three groups of participants ($\chi^2 = 1.95, df = 1, p = .38$) and anti-bullying programs were not associated with different rates or experiences of peer aggression ($t(109) = -.68, p = .50$) or peer victimization ($\chi^2 = 1.43, df = 1, p = .49$) among participants.

Table 7

School Setting, Student Population, Restrictiveness of Classroom Setting, and School Anti-Bullying Programs of Participants' Children

| | ASD (n=47) | | OD (n=32) | | WD (n=32) | | Total (N=111) | |
|--|------------|-------|-----------|-------|-----------|-------|---------------|-------|
| | n | % | n | % | n | % | n | % |
| School Settings | | | | | | | | |
| Public | 42 | 89.40 | 27 | 84.40 | 24 | 75.00 | 93 | 83.80 |
| Private | 4 | 8.50 | 5 | 15.60 | 7 | 21.90 | 16 | 14.40 |
| Charter | 1 | 2.10 | 0 | 0 | 1 | 3.10 | 2 | 1.80 |
| Student Populations | | | | | | | | |
| General Education | 8 | 17.00 | 12 | 37.50 | 24 | 75.00 | 44 | 39.60 |
| Special Education | 6 | 12.80 | 3 | 9.40 | 1 | 3.10 | 10 | 9.00 |
| General and Special Education | 33 | 70.20 | 17 | 53.10 | 7 | 21.90 | 57 | 51.40 |
| Restrictiveness of Classroom Setting | | | | | | | | |
| Self-Contained (academic/non-academic) | 7 | 14.90 | 2 | 6.20 | 0 | 0 | 9 | 8.10 |
| Self-Contained (academic only) | 6 | 12.80 | 4 | 12.50 | 0 | 0 | 10 | 9.00 |
| Equal Time (self-contained/general education) | 3 | 6.40 | 2 | 6.20 | 0 | 0 | 5 | 4.50 |
| Push in/Pull out Services | 27 | 57.40 | 8 | 25.00 | 0 | 0 | 35 | 31.50 |
| General Education | 4 | 8.50 | 16 | 50.00 | 32 | 32 | 52 | 46.80 |
| Anti-Bullying Programs | | | | | | | | |
| School Assemblies | 14 | 29.80 | 17 | 53.10 | 19 | 59.40 | 50 | 45.00 |
| Classroom Lessons | 12 | 25.50 | 9 | 28.10 | 16 | 50.00 | 37 | 33.30 |
| Posters | 15 | 31.90 | 15 | 46.90 | 17 | 53.10 | 47 | 42.30 |
| Small Group Lessons | 11 | 23.40 | 9 | 28.10 | 9 | 28.10 | 28 | 25.20 |

Main Analyses

The main analyses report findings from the five research questions. The first set of questions was concerned with comparing experiences of peer aggression and peer victimization between the three groups of participants. The second set of questions addressed the identification of personal factors that were related to peer aggression and peer victimization for the sample as a whole. The third set of research questions asked which personal factors best predicted peer aggression and peer victimization for the sample as a whole. The fourth set of research questions asked which personal factors and contextual factors were associated with peer

aggression and peer victimization among children with disabilities. The fifth and final set of research questions were concerned with which personal and/or contextual factors best predicted peer aggression and peer victimization among children with disabilities.

1a. Do children with ASD, OD, and WD differ in the frequency with which they experience peer aggression? *Peer aggression* was measured by the number of days a participant’s child was victimized in the past 4 weeks (20 days) of school. The mean number of days that participants reported peer aggression was 5.03 days (SD = 6.51) and is summarized in Table 8.

Table 8
Means and Standard Deviations (SD) for Frequency of Peer Aggression for Participants' Children with Autism Spectrum Disorders, Other Disabilities, and Without Disabilities

| Group | Peer Aggression | | |
|-----------------|-----------------|------|---------|
| | Mean | SD | Range |
| ASD (n = 47) | 6.15 | 6.68 | 0 to 20 |
| OD (n = 32) | 6.88 | 7.59 | 1.34 |
| WD (n = 32) | 1.53 | 2.9 | 0 to 12 |
| Total (N = 111) | 5.03 | 6.51 | 0 to 20 |

Since the ASD group had significantly more males than the OD and WD groups, an ANCOVA was completed. Gender was used as a covariate to ensure that the differences in rates of peer aggression between the three groups still existed when gender was controlled. The frequency of peer aggression differed between the three groups ($F = 7.53, p < .001$), with the ASD and OD groups each experiencing significantly greater rates of peer aggression than the WD group.

1b. Does the proportion of children who experience peer victimization differ among children with ASD, OD and WD? When a child experienced three or more days of peer aggression within a four-week period, the experience was categorized as *peer victimization*; two or fewer experiences of peer aggression were not considered peer victimization (Table 9).

Table 9
Proportion of Participants With Children Who Experienced Peer Victimization

| | ASD (n = 47) | | OD (n = 32) | | WD (n = 32) | | Total (N = 111) | |
|--|--------------------|----|----------------|----|----------------|---|--------------------|----|
| | n | % | n | % | n | % | n | % |
| | Peer Victimization | 29 | 61.70 | 18 | 56.20 | 6 | 18.80 | 53 |

Since the ASD group had significantly more males than the OD and WD groups, the chi-square tests were run separately for males and females. The tests are summarized Tables 10 and 11. In both cases, the ASD and OD groups each reported a greater proportion of participants who experienced peer victimization than in the WD group. The ASD and OD groups did not differ from each other.

Table 10
Males' Experiences of Peer Victimization by Group (N = 66)

| Peer Victimization | Group | | | | Chi-Square | df | Significance |
|--------------------|-----------------|----------------|----------------|-------|------------|----|----------------|
| | ASD (n = 37) | OD (n = 15) | WD (n = 14) | Total | | | |
| Yes | 22 | 8 | 2 | 32 | 8.48 | 2 | <i>p</i> < .05 |
| No | 15 | 7 | 12 | 34 | | | |
| Total | 37 | 15 | 14 | 66 | | | |

Table 11

Females' Experiences of Peer Victimization by Group (N = 45)

| Peer Victimization | Group | | | | Chi-Square | df | Significance |
|--------------------|-----------------|----------------|----------------|-------|------------|----|----------------|
| | ASD (n = 10) | OD (n = 17) | WD (n = 18) | Total | | | |
| Yes | 7 | 10 | 4 | 21 | 7.52 | 2 | <i>p</i> < .05 |
| No | 3 | 7 | 14 | 21 | | | |
| Total | 10 | 17 | 18 | 45 | | | |

2a. Are the personal factors of autistic traits, anxious/depressed, withdrawn/depressed, attention problems, and thought problems correlated with the frequency of peer aggression experienced by children with ASD, OD, and WD? The three groups of participants (ASD, OD, and WD) were combined into a single group and correlations were calculated to determine which variables were associated with frequency of peer aggression. A summary of these scores can be found in Table 12.

Pearson product-moment correlations between the dependent variable of peer aggression and the independent variables of autistic traits, withdrawn/depressed, anxious/depressed, thought problems and attention problems were calculated. Each variable was significantly correlated with peer aggression.

The data indicated a moderate positive correlation between peer aggression and autistic traits ($r = .33, p < .05$), withdrawn/depressed ($r = .31, p < .001$), thought problems ($r = .40, p < .001$), and attention problems ($r = .42, p < .001$). There was also a strong positive correlation between peer aggression and anxious/depressed ($r = .57, p < .01$).

Table 12
Correlation Table: Peer Aggression, Autistic Traits, Anxious/Depressed, Withdrawn/Depressed, Thought Problems, and Attention Problems (n=111)

| | PA | AT | AD | WD | TP | AP |
|--------------------------|----|-------|--------|--------|--------|--------|
| Peer Aggression (PA) | 1 | .333* | .571** | .308** | .393** | .419** |
| Autistic Traits (AT) | | 1 | .462** | .424** | .639** | .540** |
| Anxious/Depressed (AD) | | | 1 | .561** | .521** | .523** |
| Withdrawn/Depressed (WD) | | | | 1 | .517** | .244** |
| Thought Problems (TP) | | | | | 1 | .540** |
| Attention Problems (AP) | | | | | | 1 |

* $p < .05$

** $p < .001$

2b. Are the personal factors of autistic traits, anxious/depressed, withdrawn/depressed, attention problems, and thought problems associated with experiences of peer victimization among children with ASD, OD, and WD? A series of *t*-tests were completed to look for relationships between the occurrence of peer victimization and the independent variables of autistic traits, anxious/depressed, withdrawn/depressed, thought problems, and attention problems. The *t*-tests indicated which of these variables were significantly different amongst children who experienced peer victimization and children who did not experience peer victimization.

Participants whose children experienced peer victimization reported significantly higher scores in autistic characteristics, anxious/depressed, withdrawn/depressed, thought problems, and attention problems than participants whose children did not experience peer victimization. A summary of these *t*-tests and the mean scores for each variable by peer victimization can be found in Table 13.

Table 13
Means and Standard Deviations (SD) for Anxious/Depressed, Withdrawn/Depressed, Thought Problems, Attention Problems, Autistic Traits, for Children Who Experienced Peer Victimization and Children Who Did Not Experience Peer Victimization

| | Peer Victimization (n=53) | | No Peer Victimization (n=58) | | |
|------------------------|---------------------------|-------|------------------------------|-------|---|
| | Mean | SD | Mean | SD | |
| CBCL (t-scores) | | | | | |
| Anxious/Depressed | 64.04 | 8.17 | 54.36 | 6.31 | 50 to 78 <i>t</i> (109) = 7.09, <i>p</i> < .0001 |
| Withdrawn/Depressed | 58.00 | 6.78 | 54.50 | 5.68 | 50 to 70 <i>t</i> (109) = 2.96, <i>p</i> < .0001 |
| Thought Problems | 63.49 | 8.95 | 57.62 | 7.86 | 50 to 77 <i>t</i> (109) = 3.68, <i>p</i> < .0001 |
| Attention Problems | 66.47 | 9.83 | 59.19 | 8.19 | 50 to 87 <i>t</i> (109) = 4.25, <i>p</i> < .0001 |
| AQ-Total Score | 29.89 | 11.16 | 20.91 | 11.86 | 0 to 44 <i>t</i> (109) = 4.17, <i>p</i> < .0001 |
| Autistic Traits | | | | | |

3a. Which set of personal factors best predicts the frequency of peer aggression among children with ASD, OD, and WD? Variables that were significantly correlated with peer aggression were entered into a step-wise multiple regression analysis to determine which personal variables best predicted peer aggression among participants' children. The independent variables included autistic traits, anxious/depressed, withdrawn/depressed, thought problems, and attention problems. Multicollinearity was checked and no variables were found to have a correlation of .80 or greater.

In order to account for disability status, a new dummy-coded variable was created to include in this model. Since the ASD and OD groups did not differ in experiences of peer aggression, they were collapsed into a single disability group and compared to participants in the WD group.

The best fitting model explained 32.7% of the variance and included anxious/depressed. Results of this regression are summarized in Table 14.

Table 14
Stepwise Multiple Regression Analysis of Peer Aggression (N = 111)

| Source | r^2 | B | t | Sig |
|-------------------|-------|------|------|------------|
| Anxious/Depressed | .327 | .571 | 7.27 | $p < .001$ |

3b. Which set of personal factors best predicts peer victimization among children with ASD, OD, and WD? Variables that were significantly higher among children who experienced peer victimization were entered into a forward logistic regression analysis. These variables included autistic characteristics, anxious/depressed, withdrawn/depressed, thought problems, and attention problems. Like the previous regression, disability status was also considered in this model as a dummy coded variable.

Multicollinearity was checked by examining the VIF and tolerance, which were at acceptable levels. VIF statistics were all less than 10 and ranged from 1.67 to 3.69. Tolerance statistics were all greater than .10 and ranged from .27 to .60.

The model as a whole was a significant predictor of the probability that children would experience peer victimization ($\chi^2(1) = 39.69, p < .001$; -2 Log likelihood = 113.96, Cox and Snell R square = .301, Nagelkerke R square = .401). The Hosmer and Lemeshaw test indicated that the model had a good fit ($\chi^2(7) = 6.27, p = .509$). One factor emerged as a significant predictor of peer victimization: anxious/depressed ($Wald_{(df=1)} = 27.14, p < .05$) and accounted for between 30.10% and 40.10% of the variance. Finally, the model correctly classified 75.5% of the peer victimization cases and 82.80% of the no victimization cases with an overall rate of success of 79.30%. A summary of this model can be found in Table 15.

Table 15
Forward Logistic Regression Analysis Used to Predict the Likelihood of Peer Victimization
(N = 111)

| Factor | B | Wald | df | p | r ² |
|-------------------|---------|-------|----|----------|----------------|
| Anxious/Depressed | .169 | 27.13 | 1 | p < .001 | .301 - .401 |
| Constant | -11.110 | 27.77 | 1 | p < .001 | |

4a. Are personal factors (autistic traits, anxious/depressed, withdrawn/depressed, attention problems, and thought problems) and/or contextual factors (restrictiveness of classroom setting, and hours of special education services) correlated with the frequency of peer aggression experienced by children with disabilities? Pearson product-moment correlations between the dependent variable of peer aggression and the independent variables measuring contextual factors (restrictiveness of classroom setting, hours of special education

services) and the independent variables measuring personal factors (autistic traits, withdrawn/depressed, anxious/depressed, thought problems, and attention problems) were calculated for participants in the disability group ($n = 79$). There was a strong positive correlation between peer aggression and anxious/depressed ($r = .50, p < .001$). There was a moderate positive correlation with attention problems ($r = .37, p < .05$) and a weak positive correlation with thought problems ($r = .28, p < .05$). None of the contextual variables were correlated with peer aggression within the disability group. A summary of these correlations can be found in Table 16.

Table 16

Correlation Table: Peer Aggression, Restrictiveness of Classroom Setting, Hours of Special Education Services, Autistic Traits, Anxious/Depressed, Withdrawn/Depressed, Thought Problems, and Attention Problems Among Children with Disabilities (n=79)

| | PA | RoC | SpEdHr | AT | AD | WD | TP | AP |
|--|----|-------|---------|--------|--------|--------|--------|--------|
| Peer Aggression (PA) | 1 | -.063 | .065 | .151 | .496** | .191 | .276* | .365** |
| Restrictiveness of Classroom (RoC) | | 1 | -.754** | -.216 | .098 | -.017 | .084 | -.143 |
| Hours of Special Education Services (SpEdHr) | | | 1 | .300** | -.090 | .035 | -.028 | .266* |
| Autistic Traits (AT) | | | | 1 | .282* | .247* | .470** | .249* |
| Anxious/Depressed (AD) | | | | | 1 | .466** | .403** | .460** |
| Withdrawn/Depressed (WD) | | | | | | 1 | .442** | .248* |
| Thought Problems (TP) | | | | | | | 1 | .454** |
| Attention Problems (AP) | | | | | | | | 1 |

* $p < .05$

** $p < .001$

4b. Are personal factors (autistic traits, anxious/depressed, withdrawn/depressed, attention problems, and thought problems) and/or contextual factors (restrictiveness of classroom setting, and hours of special education services) associated with experiences of peer victimization among children with disabilities? A series of *t*-tests were completed to look for relationships between the occurrence of peer victimization and the independent variables measuring contextual factors (restrictiveness of classroom setting and hours of special education services) and personal factors (autistic traits, anxious/depressed, withdrawn/depressed, thought problems, and attention problems) among children with disabilities. Participants whose children experienced peer victimization reported significantly higher scores on the CBCL subscales of anxious/depressed and attention problems than participants whose children did not experience peer victimization. A summary of these *t*-tests, means, and standard deviations can be found in Table 17.

Table 17

Means and Standard Deviations (SD) for Anxious/Depressed, Withdrawn/Depressed, Thought Problems, Attention Problems, Autistic Traits, Hours of Special Education Services, and Restrictiveness of Classroom Setting for Children with Disabilities Who Experienced Peer Victimization and Children with Disabilities Who Did Not Experience Peer Victimization

| | Peer Victimization (n=47) | | | No Peer Victimization (n=32) | | | |
|--------------------------------------|---------------------------|-------|----------|------------------------------|-------|----------|-----------------------|
| | Mean | SD | Range | Mean | SD | Range | |
| CBCL (t-scores) | | | | | | | |
| Anxious/Depressed | 64.68 | 8.15 | 50 to 80 | 56.09 | 7.03 | 50 to 78 | $t(77)=4.86, p<.0001$ |
| Withdrawn/Depressed | 58.32 | 7.00 | 50 to 82 | 56.88 | 6.35 | 50 to 70 | $t(77)=.93, p=.353$ |
| Thought Problems | 64.98 | 8.33 | 50 to 82 | 61.34 | 8.16 | 50 to 77 | $t(77)=1.92, p=.059$ |
| Attention Problems | 68.00 | 9.29 | 51 to 90 | 63.06 | 8.03 | 51 to 87 | $t(77)=2.45, p<.05$ |
| AQ-Total Score | | | | | | | |
| Autistic Traits | 31.83 | 9.58 | 8 to 47 | 27.31 | 11.71 | 0 to 44 | $t(77)=1.88, p=.064$ |
| Caregiver Report | | | | | | | |
| Hours of Special Education Services | 10.94 | 11.27 | 0 to 35 | 12.09 | 12.59 | 0 to 35 | $t(77)=-.43, p=.482$ |
| Restrictiveness of Classroom Setting | 3.68 | 1.24 | 1 to 5 | 3.47 | 1.41 | 1 to 5 | $t(77)=.706, p=.482$ |

5a. Which set of personal factors (autistic traits, anxious/depressed, withdrawn/depressed, attention problems, and thought problems) and/or contextual factors (restrictiveness of classroom setting, and hours of special education services) best predicts the frequency of peer aggression among children with disabilities? Factors that were found to be significantly correlated with peer aggression were entered into a stepwise multiple regression analysis. Multicollinearity was checked and no variables were found to have a correlation of .80 or greater. The factors entered into the model included anxious/depressed, thought problems, and attention problems. The best fitting model included anxious/depressed and accounted for 24.6% of the variance ($r^2 = .246$, $p < .001$). Results of this regression analysis are summarized in Table 18.

Table 18

Stepwise Multiple Regression Analysis of Peer Aggression: Disability Group (n = 79)

| Source | r^2 | B | t | Sig |
|-------------------|-------|------|------|------------|
| Anxious/Depressed | .246 | .496 | 5.01 | $p < .001$ |

Note: Overall model fit $F(1) = 25.11$, $p < .001$

5b. Which set of personal factors (autistic traits, anxious/depressed, withdrawn/depressed, attention problems, and thought problems) and/or contextual factors (restrictiveness of classroom setting, and hours of special education services) best predicts peer victimization among children disabilities? Next, factors that were found to be significantly different between children in the disability group who experienced peer victimization and those who did not experience peer victimization were entered into a forward logistic regression analysis. These variables included anxious/depressed and attention problems.

Multicollinearity was not a problem for the variables entered into the model. The VIF scores for each of the variables were less than 10 and ranged from 1.00 to 2.05; tolerance levels were greater than .10 and ranged from .49 to .94.

Anxious/depressed was found to be the only significant variable ($Wald_{(df=1)} = 15.34, p < .0001$) and it accounted for between 23.2% and 31.3% of the variance. The model as a whole was a significant predictor of the probability that children in the disability group would experience peer victimization ($\chi^2(1) = 20.81, p < .0001$; -2 Log likelihood = 85.85, Cox and Snell R square = .231, Nagelkerke R square = .313). The Hosmer and Lemeshaw test indicated that the model had a good fit ($\chi^2(7) = 10.17, p = .253$). Finally, the model correctly classified 80.90% of the peer victimization cases and 75.00% of the no victimization cases with an overall rate of success of 78.50%. Results are summarized in Table 19.

Table 19
Forward Logistic Regression Analysis Used to Predict the Likelihood of Peer Victimization
(N=79)

| Factor | B | Wald | df | p | r ² |
|-------------------|-------|-------|----|----------|----------------|
| Anxious/Depressed | .143 | 15.34 | 1 | p < .001 | .301 to .401 |
| Constant | -8.20 | 14.27 | 1 | p < .001 | |

Summary of Results

The main analyses indicated that children in the ASD and OD groups experienced significantly greater rates of peer aggression than peers in the WD group. Additionally, the ASD and OD groups of children were more likely to experience peer victimization than the WD group.

Pearson product moment correlations indicated that peer aggression was positively correlated with autistic traits, anxious/depressed, withdrawn/depressed, thought problem, and attention problems. When significant variables were entered into a multiple regression analysis anxious/depressed emerged as a single predictor of peer aggression

A series of *t*-tests were completed to look for relationships between the occurrence of peer victimization and each of the independent variables (autistic traits, anxious/depressed, withdrawn/depressed, thought problems, and attention problems). Participants whose children experienced peer victimization reported significantly higher scores in autistic characteristics, anxious/depressed, withdrawn/depressed, thought problems, and attention problems. These variables were entered into a forward logistic regression analysis and anxious/depressed emerged as the only significant variable.

The above correlations and regressions were run for the combined ASD and OD group (disability group) with the added contextual variables of restrictiveness of classroom setting and hours of special education services. The models produced by the disability group were similar to the models produced for the group as a whole; anxious/depressed emerged as the only significant predictor of peer aggression and peer victimization.

Chapter V

Discussion

Previous research has shown that children with disabilities and chronic conditions are more vulnerable to increased rates of peer aggression and are more likely to experience peer victimization (Sentenac et al, 2012). It has been well established that children with ASD are victimized at higher rates than their typically-developing counterparts (e.g. Little, 2002). Research studies among children with typical development have identified a number of factors linked to peer aggression and peer victimization. The present study examined those factors among children with ASD and other disabilities, as well as with children without a disability.

Peer Aggression and Peer Victimization

As expected, the first set of research questions confirmed findings from previous studies. Children in the ASD and OD groups experienced elevated rates of peer aggression when compared to their peers in the WD group. Further, these groups of children were also more likely to have experienced peer victimization (repeated acts of peer aggression) than those children in the WD group. These results add to findings from previous studies (e.g. Little 2002, Mishna, 2003), which suggest that children with disabilities may be more vulnerable to increased rates of peer aggression and experiences of peer victimization than children with no other diagnosis.

The ASD and OD groups did not experience significantly different rates of peer aggression and the groups did not have significantly different proportions of children who experienced peer victimization. Further, autistic traits did not significantly contribute to a model predicting peer aggression or peer victimization. While previous studies (e.g. Bejerot and

Mortberg, 2009) have suggested that ASD and/or autistic traits may make an individual more vulnerable to victimization, this study did not have results that supported these findings.

Instead, these results support the need to look at specific personal factors that are associated with elevated rates of peer aggression and increased likelihood of peer victimization. Since an ASD diagnosis did not make a caregiver's child more vulnerable to victimization than children with other disabilities, specific personal factors may be more important in predicting peer victimization and peer aggression than specific diagnoses.

Examples of acts of peer aggression experienced by children with and without disabilities. The survey gave participants the opportunity to describe "typical experiences" of peer aggression that their child faced in school. Caregivers described a wide range of peer aggression ranging from relational victimization (e.g. "silent treatment initiated by one member of peer group, adopted by others") to overt victimization (e.g. "a child hit him for no reason-punched him 3 times -in arm, shoulder, and in the face") in school and via social media (e.g. "she gets called cruel names or is ignored. gets dirty looks, one girl spit in her drink. another bashed her on Facebook really bad").

Several alarming trends were noted in caregiver's descriptions. Multiple caregivers described situations in which bullies wished death upon their children. For example, one caregiver described a situation in which her son's peers encouraged him to kill himself, "The most severe was telling him he needed to kill himself and spreading rumors that he was a cutter," while another caregiver explained, "Knowing that he is severely allergic to cats, he was told to come to another child's house that has cats so he can die."

Caregivers also described situations of racism (e.g. “She is called Nigger, sasquatch, and more”), homophobia (e.g. “calling him gay while making perverted comments”) and sexual harassment:

A group of boys tried to intimidate her and rudely told her she could not sit in the seniors hall after school ended, she argued, they called her a bitch and crowded around her, she got up to leave, they blocked her egress from the building, so she tried to go a class room to call her dad, as she left she heard them saying "what she needs is a cock down her throat.”

Personal and Contextual Factors Associated with Victimization

In accordance with the research questions, personal and contextual factors were considered for the sample as a whole. Since the results of questions 1a and 1b did not indicate that children with ASD were more likely to be victimized than children with other disabilities, the ASD and OD groups were collapsed into a single group and compared to the WD group using a dummy-coded variable for the regression analyses.

Personal factors associated with peer aggression and peer victimization. Consistent with previous studies (e.g. Baumeister et al., 2008), peer aggression and peer victimization were associated with anxious/depressed, withdrawn/depressed, thought problems, attention problems, and autistic traits. These results add to a growing body of research suggesting a correlation between victimization and personal factors such as internalizing behaviors (anxiety and depression) and atypical behaviors.

Participants whose children experienced peer victimization had significantly higher scores than participants who did not experience peer victimization on five of the subscales designed to measure personal factors (autistic traits, anxious/depressed, withdrawn/depressed, thought problems, and attention problems). Mean *T* scores for participants who did not experience peer victimization were all in the normal range, according to CBCL scoring

guidelines. However, mean scores for all but one scale (withdrawn/depressed), fell in the borderline clinical range for participants who experienced peer victimization. The factor of anxious/depressed had mean scores closest to ‘clinical’ levels and was part of the regression analyses that predicted peer aggression and peer victimization.

When these analyses were conducted for the disability group in isolation, fewer personal factors emerged as significant predictors of peer aggression and peer victimization.

Anxious/depressed, thought problems and attention problems were found to correlate and peer aggression and only anxious/depressed and attention problems were different among children who did and did not experience peer victimization. The personal factors of autistic traits and withdrawn/depressed were no longer associated with peer aggression or peer victimization within the disability group.

Contextual factors associated with peer aggression and peer victimization. The final research questions asked if contextual factors, such as classroom setting, significantly contributed to a model explaining peer aggression and peer victimization among children with disabilities. These analyses were completed separately from children without disabilities because children with disabilities experience a greater range of school settings (self-contained to fully included) and educational experiences at school (e.g. specialized instruction) that are not relevant to students without disabilities.

The analyses of the disability group in isolation included the same correlations and regressions as what was completed for the group as a whole, but with the addition of two contextual variables: hours of special education services and restrictiveness of classroom setting. Neither of the contextual variables was correlated with peer aggression and they did not differ

between children who experienced peer victimization and children who did not experience peer victimization.

These results are surprising given the findings of previous studies. Studies that have examined factors associated with peer aggression and peer victimization among children with disabilities (Cappadocia et al., 2012; Crawford and Manassis, 2011) and children with typical development (Hodges et al, 1997) have produced models that incorporated personal and contextual factors. Saylor and Leach (2009) asserted that self-contained students' social isolation and poor social skills made them more vulnerable to victimization. Further, Rose et al. (2009) reported that special education students who received their services in a self-contained setting were more likely to be victimized. However, neither special education services nor classroom setting were found to be significant among this sample.

One possible reason could be that there is an interaction effect that these data did not capture because of the limited age range of participants' children. In Rose and colleague's (2009) study, middle school students in a self-contained setting were victimized significantly more than students who were included. However, self-contained students in high school experienced similar victimization as their peers who were in an inclusive setting.

Another possible reason that classroom setting and hours of special education were not related to victimization could be because personal factors are stronger predictors of victimization than contextual factors. Behavior atypicality, as defined by DeRosier and Mercer (2009), is the degree to which children's behaviors are viewed by their peers as different from the larger group. Atypical behavior has been linked to victimization and would help explain why the disability groups experienced significantly greater rates of victimization even though disability status was not found to predict victimization in the regression models. Given that children with disabilities

such as ASD often have visible deficits that set them apart from their peers, it could be their atypicality, not their specific disability that makes them vulnerable to victimization.

A final explanation for why these variables did not emerge as significant may be because the quality of an educational environment is more important than the environment itself.

Poskiparta and Samivalli (2010) noted that personal factors were strong predictors of peer victimization in their study. However, participants who were in environments with peers and adults who would defend them experiences less peer victimization. Therefore, it was not the setting or programming that impacted experiences of victimization, it was the degree of social support within those environments that protected an individual from victimization. The present study did not capture this concept in its measurement of children's educational settings.

Models predicting peer aggression and peer victimization. Of the personal factors correlated with peer aggression (anxious/depression, withdrawn/depressed, thought problems, attention problems, and autistics traits), only anxious/depressed significantly contributed to a stepwise regression model that predicted peer aggression for the sample as a whole. The results of the logistic regression analyses predicting peer victimization closely mirrored these findings. Anxious/depressed accounted for the largest portion of variance and was the sole predictor of peer victimization.

Additionally, the models predicting peer victimization and peer aggression within the disability group were similar to the models for the whole group. Despite the different correlations within the disability group, anxious/depressed was the only significant predictor for both the stepwise multiple regression analysis predicting peer aggression and the forward logistic regression analysis predicting peer victimization.

Several conclusions may be drawn from these results. First, these findings support results from previous studies, which have identified internalizing behaviors as one of the most common personal factors associated with increased victimization (Boiven et al., 2010; Hunter et al., 2007; Siegal et al., 2009). Previous models have found anxiety and depression to be predictors of victimization among children with typical development (Hodges et al., 1997) and children with disabilities (Cappadocia et al., 2012).

Second, these results suggest that different disability subgroups may not require separate models to explain and predict peer aggression or peer victimization. Despite different experiences of victimization between children with and without disabilities, disability status did not significantly contribute to a model predicting victimization. Further, the model for the disability group did not differ from the model for the whole sample. Therefore, it seems unlikely that a child's specific disability status is making them vulnerable to victimization by their peers. Instead, it is the atypical behaviors associated with a diagnosis that may make a child vulnerable to such victimization.

Implications for Parents and Practitioners

The present study offers several implications for parents and practitioners. Most notably, students who have symptoms of anxiety or depression should be closely monitored. The variable of anxious/depressed emerged as a consistent predictor of victimization across the multiple models discussed in this study. While it can be a risk factor for victimization, the presence of anxiety and depression has also been linked to prior victimization. Previous studies (e.g. Siegal et al., 2009) have suggested a reciprocal relationship that creates a cycle of victimization and depression and anxiety. This potential cycle is supported by participants' descriptions of their

children's anxiety triggering an incident of peer aggression, which in turn triggered further anxiety:

After this incident he believed that people were talking about him in the halls for weeks. He also refused to eat at school because he believed that person or people unknown was trying to poison his (home) lunch.

If parents and practitioners are aware of such a cycle, they may be able to provide appropriate therapeutic interventions to help their child to break the cycle.

Given the prominent role that personal factors played in predicting victimization, the results of this study also add to the growing body of research about which personal characteristics may place an individual at increased risk for victimization. Understanding potential risk factors for victimization can assist practitioners in two ways. First, it can help teachers in identifying potential victims so adults can remain vigilant in screening for such victimization among identified students. Second, practitioners can assist students with identified personal risk factors. Practitioners can counsel at-risk students by assisting with underlying problems of anxiety and/or depression, as well as teach students to recognize and avoid potential situations of victimization.

The results of this study also support the notion that students with disabilities have similar risk factors for victimization as students without disabilities. However, because of the nature of their disabilities, this group of children is more likely to display the personal factors associated with increased peer aggression and peer victimization than children without disabilities. Therefore, practitioners should be especially vigilant in screening and providing therapeutic supports to children with disabilities who may be susceptible to victimization.

Finally, the current culture of schools focuses on test preparation and academic performance. Children with disabilities, and the adults who work with them, are often under

pressure to meet academic standards in order to maintain progress toward standard-track diplomas. Non-academic areas of needs, such as functional life skills and social skills, are often neglected in favor of academic instruction. However, children with disabilities may lack adequate social skills and coping skills necessary to manage isolated situations of peer aggression or long-term peer victimization.

Life skill and social skill instruction could be instrumental in assisting students who have been victimized or may be victimized in the future. It can be used to teach students strategies to avoid, report, and appropriately defend themselves against an act of peer aggression. It may be necessary to explicitly teach students with disabilities these strategies, which often come naturally for children without disabilities. Additionally, social skill instruction that promotes the skills necessary to make and keep friends may also be helpful. Previous studies (e.g. Cappadocia et al., 2012) have identified a lack of friends as a risk factor for peer victimization. Providing students with disabilities the tools to make and maintain friendships may offer additional protection from peer aggression and peer victimization.

Anti-bullying initiatives. The results of this study provided evidence that current anti-bullying programs used in schools may not impact rates of peer aggression or the presence of peer victimization. For example, one caregiver reported,

My child never told me about any bullying at school, but after the 2nd suicide in his school, which had a huge impact upon him, then, and only then, did he tell me that there had been big problems with bullying for a lot of kids at school, but he had not personally felt victimized by the bullying.

This caregiver also noted that she was aware of multiple school-wide and individualized anti-bullying initiatives at her son's school.

Understanding the factors that are correlated with peer aggression in a school setting is helpful in designing more effective anti-bullying programs. Strategies can be taught to empower

potential victims, while peers could also be taught to protect classmates who are targeted as victims. Additionally, educating students on the negative outcomes of bullying (e.g. suicide) may be helpful in deterring potential perpetrators.

In addition to promoting more effective anti-bullying programs among students, teachers may also require training in effective anti-bullying strategies. A number of caregivers described situations of peer aggression that teachers and school officials ignored or failed to stop. One caregiver described an extreme event of how a teacher slept as a student was attacked by multiple peers:

He was surrounded by his peers in gym class during a game of dodgeball. They [had] him enclosed in a circle and wouldn't let him out. He was then pelted repeatedly with dodgeballs, taunted, teased, called names, pushed, & shoved. On the video camera footage we have from the surveillance cameras you can see him repeatedly try to get out of the circle and they would keep pushing him back in. He finally had enough and turned and being a wrestler did a double leg take down on the main instigator of the group and proceeded to defend himself. This all while the substitute teacher was asleep in the bleacher area of the gym. In the end the cops were called by the school, charges pressed against my son(which were eventually dropped after the judge saw the surveillance tape). This was a result of the constant bullying not only from the kids but from the school as well. We have since had the problem handled by attorneys so the bullying he now endures is not as much but it took legal action on our part before we could get the school to cooperate.

Other caregivers described how “teachers were aware but [did] little” and how situations were often “not well controlled by teachers.” Training educators to identify and prevent peer victimization could lead to better outcomes for children who are more vulnerable to peer aggression.

Limitations

Several limitations in the study survey should be noted. A technical error during data collection resulted in the omission of several questions from the CBCL for a portion of the participants. While the missing questions fell within acceptable ranges set by CBCL’s manual, it

resulted in a the same questions being omitted from the anxious/depressed, withdrawn/depressed, and thought problem scales for the majority of the participants.

Additionally, this study would have benefitted from a larger sample size, especially within the WD group. The ASD and OD groups were collapsed into a single group for the regression analyses. This resulted in the WD group being less than half the size of the disability group.

There are also potential limitations to the survey that should be noted. The investigator-designed survey incorporated several author-created questions that have not been used in previously published studies. The most notable example of this was in the measurement of peer aggression and peer victimization. Previous studies (e.g. Hunter et al, 2007) have clearly described peer victimization as repeated acts of peer aggression, without specifically defining what an act of peer aggression looked like. Therefore, Cardoos and Hinshaw's (2011) definitions of overt victimization and relational victimization were combined into a single definition, which was used to describe peer aggression. Previous studies have also failed to define how many acts of peer aggression constitute peer victimization. Therefore, this study created its own definition of three acts in a one-month period, which has not been used in previous studies. For these reasons, the reliability and validity of peer aggression and peer victimization have not been established by previous studies.

The snowball sampling procedure may have resulted in elevated reports of peer aggression and peer victimization. Since the study was described as a survey meant to measure experiences of peer victimization and bullying in school, parents whose children had been impacted by such victimization may have been more likely to reply than parents whose children

have never been victimized. These skewed replies may have also resulted in elevated CBCL and AQ scores for the sample as a whole.

As noted earlier, the DSM-5 (American Psychological Association, 2013) was released during the data collection period of this study. The diagnostic criteria outlined by the DSM-5 (American Psychological Association, 2013) for autism spectrum disorders is different than the criteria provided in the DSM-III-R (American Psychological Association, 1987) 3rd ed., revised. Most notably, the diagnosis of Asperger Syndrome was removed. If the new diagnostic criteria were followed in identifying participants for this study, the inclusion criteria for participants in the ASD group may have changed resulting in a different sample of participants. Future studies should consider how new diagnostic criteria affect the inclusion of children previously diagnosed as having Asperger Syndrome, but who do not meet the criteria of autistic disorder.

Results were based on caregiver's reports of their children's diagnoses and experiences in school. Diagnoses were not confirmed with medical files and in some instances, parents listed symptoms as diagnoses (e.g. executive function problems) or diagnoses not recognized by the DSM-III-R (American Psychological Association, 1987) (e.g. sensory processing disorder). This suggests that some caregivers may not fully understand their child's disability status. Future studies would benefit from incorporating a diagnostic tool into their battery or confirming diagnoses through record review.

Finally, this study was based on second-hand reports given by caregivers. Many participants noted that they might have underestimated their child's experiences of victimization at school because they felt that their child was afraid to report all instances of peer aggression. Additionally, the views of teachers and perpetrators were not considered in this study. Future

studies may want to consider using parent, teacher and student reports to corroborate experiences of peer aggression.

Implications for Future Research

The regression models developed from these data only accounted for approximately one-third of the variance in peer aggression. Therefore, it is likely that there are other variables associated with victimization that were not captured by the variables measured in this study. For example, restrictiveness of classroom setting and hours of special education services were not significant contextual variables in this study. Therefore, it seems that it the quality of the classroom environment may be more important than the setting itself. As noted earlier, contextual factors such as educators' willingness and ability to prevent peer aggression may impact experiences of peer victimization in school. Future studies should seek to better understand the type of qualitative features that make a learning environment safe for children who may have personal characteristics associated with elevated rates of peer aggression.

In addition to contextual factors, personal factors not examined in this study may also account for the remaining variance in predicting peer aggression and peer victimization. Previous authors have identified parent's psychological well-being, externalizing behaviors, social skills, and communication skills as predictors of peer aggression (Cappadocia et al., 2012). While this study only found anxious/depressed to be a significant predictor of peer aggression and victimization, it used a more stringent definition of peer aggression than what is used by many other studies. Future studies would benefit from examining these additional variables while using the stringent definitions used by this study.

Finally, the present study measured rates of peer aggression and determined if these rates could be considered peer victimization. However, these rates did not capture the magnitude or

type of peer aggression experienced by participants' children. Multiple caregivers of children with ASD described situations, in which their child experienced acts of peer aggression that preyed upon components of their child's disability. For example, one caregiver described a situation in which her son's peers took advantage of his naïve social skills to get in him trouble at school, "Certain kids in my son's class like to convince him to do things they know will get him in trouble and then laugh about it." Another mother described how peers used her daughter's emotional difficulties to cause outbursts at school:

Watching her while she works or following her on the playground to nitpick and correct her since she struggles with emotional regulation and overreacts so they wait for her to explode.

Some parents reported that their children's aggressors went so far as to admit that they intimidated children with disabilities because of their victims' needs:

Attacked by classmate who informed him loudly and publicly that "you have no friends" Other people's locks put on his locker. Informed by aggressor I did it so we could watch you have a fit. Informed that failure to have a fit was... [disappointing]..., and that he was cold because he asked the principal to have the lock cut off.

Future studies should investigate if specific groups of children are more or less susceptible to different types of victimization and if the magnitude of victimization differs between these subgroups of children. Understanding the type of victimization experienced by different subgroups of children may help explain why children with disabilities are more likely to experience peer victimization.

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Appendix A
Investigator Designed Survey

I. About You:

A. Age: _____

B. Gender: male female

C. State of residence: _____

D. Relationship to adolescent the child in your care (select one):

Biological Parent

Step Parent

Grandparent

Foster Parent

Adoptive Parent

Other: _____

II. About the Child in Your Care:

A. Gender : male female

B. Age: _____ (years), _____ (months)

C. Grade in school: _____

D. Type of school (select one):

Public School

Charter School

Private School

Other: _____

E. What population(s) of students does your child's school serve?
(select all that apply)

General

Education Students

Special Education

Students

F. Did your child's school implement an anti-bullying program in the past year?

No

Yes (If yes, select all that apply)

The anti-bullying program offered:

School-wide
assembly/assemblies

Classroom-
*based lessons or
activities*

School-wide
*posters, reminders,
and incentives*

Personal or small
*group counseling for
bullies or victims*

G. Disability and Mental Health Status

Has your child ever been diagnosed with the following? (check all that apply)

- | | | |
|--|---|--|
| <input type="checkbox"/> <i>Autistic Disorder or Autism</i> | <input type="checkbox"/> <i>Asperger syndrome</i> | <input type="checkbox"/> <i>PDD</i> <i>(Pervasive Developmental Disorder)</i> |
| <input type="checkbox"/> <i>PDD-NOS</i> <i>(Pervasive Developmental Disorder– Not Otherwise Specified)</i> | <input type="checkbox"/> <i>Intellectual Disability or Mental Retardation</i> | <input type="checkbox"/> <i>OCD</i> <i>(Obsessive Compulsive Disorder)</i> |
| <input type="checkbox"/> <i>ADD or ADHD</i> <i>(Attention Deficit Disorder or Attention Deficit Hyperactivity Disorder)</i> | <input type="checkbox"/> <i>Generalized Anxiety Disorder</i> | <input type="checkbox"/> <i>Conduct Disorder</i> |
| <input type="checkbox"/> <i>Social Anxiety</i> | <input type="checkbox"/> <i>Depression</i> | <input type="checkbox"/> <i>Other(s) (please specify):</i> _____ |

Does your child receive special education services at school? (select one)

- No* *Yes (If yes, answer questions a-c below)*
- a. Approximately how many hours of special education services a week?
_____ *hours/week*
- b. Does your child receive speech and language services?
 No *Yes (_____ hours/week)*
- c. Which statement best describes your child's classroom environment(s)?
(select one)

- | | | |
|--|---|---|
| <input type="checkbox"/> <i>Self-contained classroom for all academic and non-academic subjects</i> | <input type="checkbox"/> <i>Self-contained classroom for academic subjects only.</i> | <input type="checkbox"/> <i>Equal time in both a special education and general education classroom.</i> |
| <input type="checkbox"/> <i>General education classroom with 'pull-out' or 'push-in' services by a special educator and/or paraprofessional.</i> | <input type="checkbox"/> <i>Independent participation in a general education classroom for all academic and non-academic subjects</i> | <input type="checkbox"/> <i>Other:</i> _____ _____ _____ |

III. Bullying and Peer Aggression at School

Please consider the past four (4) weeks of school when answering the questions below. If your child is currently not enrolled in school because of a break or holiday, please reflect on the last four (4) weeks your child was continuously enrolled in school before the break or holiday.

A. Peer Aggression is when an individual is physically or verbally attacked or intentionally ignored or excluded by his or her peers. This can include teasing, name calling, shunning, spreading rumors and physical altercations such as hitting or kicking.

During the last 4 weeks your child was in school, how many days did he or she experience an act of peer aggression on school grounds?

Include incidents that occurred in the school building, on the play ground, at athletic events, on the school bus, or on class field trips.

_____ days
(1 – 20)

My child did NOT experience an act of peer aggression in the past four (4) weeks

B. Bullying is defined as multiple acts of peer aggression by an individual or group of individuals over a period of time, marked by an imbalance of power and the intention to cause distress or harm.

If your child has experienced multiple acts of peer aggression in the past 4 weeks, in your best judgment:

a. Were the acts typically repeated by the same individual or group of individuals? No Yes

b. Did the acts involve an imbalance of power between your child and the aggressor? No Yes

a. Did the acts involve the intention to cause distress or harm to your child? No Yes

C. When reporting acts of peer aggression, does your child ever appear to misinterpret peers' intentions by:

a. over-reporting bullying or peer aggression? No Yes

b. under-reporting bullying or peer aggression? No Yes

D. Please describe a typical experience of the type of peer aggression or bullying that your child has encountered during the last four weeks at school.

Appendix B
Sample E-mail to Parent Support Group Leader

Subject: Bullying and Peer Victimization in School

Dear Ms. Rosenberg,

I am a PhD candidate at Teachers College, Columbia University in New York, NY. I am collecting data for my dissertation, which is investigating experiences of ‘bullying’ and other forms of peer victimization among children with and without ASD through the use of a parent/caregiver survey (Teachers College, Columbia University IRB Protocol #12-355).

I am writing to you today because your organization works directly with parents and caregivers of children with ASD. If it is acceptable, I would like to recruit potential participants from your organization’s membership to complete the survey. If you think this is possible, I can send you additional information about the study as well as recruitment documentation and my university IRB approval.

I would be happy to speak with you and/or interested members of your organization about my present study and how it fits into current research and policy.

Thank you for your time and I look forward to hearing from you.

Sincerely,

Sarah Mallory, M.Ed.
PhD Candidate
Teachers College, Columbia University

Recruiting Participants for Study: Peer Victimization and Bullying in Schools

Who: Caregivers of children (9-14 years old) with and with out autism spectrum disorders

What: Complete an anonymous survey about your child and his or her experiences of peer victimization and bullying at school

Interested?

Contact **Sarah Mallory, M.Ed.** at:

- 202-907-8779 or
- sbm2150@tc.columbia.edu

for more information about this study.

| |
|---|
| TEACHERS COLLEGE, COLUMBIA UNIVERSITY INSTITUTIONAL REVIEW BOARD |
| Protocol # <u>12-355</u> |
| Consent form approved until <u>N/A</u> |
| IRB Signature <u>SA</u> |

Appendix D
Informed Consent and Participant's Rights

INFORMED CONSENT: Peer Victimization and Bullying in School

You are invited to participate in a research study about peer victimization and bullying among children with and without autism spectrum disorders. This research study (IRB# 12-355) is being conducted by Sarah Mallory, a doctoral candidate at Teachers College, Columbia University. If you have any questions, you may contact her at 202-907-8779 or sbm2150@tc.columbia.edu. You may also contact the Teachers College Institutional Review Board Coordinator at 212-678-4105.

DESCRIPTION OF THE RESEARCH:

If you choose to participate in this study, you will be asked to complete a survey about your child between the ages of 9 and 14. The survey will include questions about your child, his or her school, and the types of peer victimization or bullying he or she may have experienced at school. The survey is anonymous and you will not be required to provide identifying information.

RISKS AND BENEFITS:

Answering the questions in the survey may make you feel uncomfortable, as they may deal with sensitive or possibly upsetting topics. If you become uncomfortable, you may take a break from the survey or decide to discontinue your participation. If you choose to discontinue your participation, there will be no negative outcomes and you will not be asked to continue.

There are no promised benefits to your participation in this study.

PAYMENT:

In appreciation of your participation in this study, you may elect to be entered into a random drawing to receive a \$15 Target gift card (1 in 10 chance of winning).

DATA STORAGE TO PROTECT CONFIDENTIALITY:

If you choose to participate in this study, you will not be required to provide identifying information. If you choose to provide your email, it will only be used to notify you of the results of the study and random drawing. It will be stored in a secure location separate from your survey responses. At no time will your survey responses be associated with your email. All information you provide to the researcher will be kept confidential and in locked files.

TIME INVOLVEMENT:

You will be asked to complete the survey at a time and location that is convenient for you. Following this letter of consent, you will be asked to complete the survey. Your total participation in this study will be approximately 20 minutes.

HOW WILL RESULTS BE USED:

The summary of findings of this study will be part of a final research report that will be presented as part of a doctoral dissertation. Additionally, summaries of findings may be shared for educational purposes at professional meetings, or in published reports.

CONSENT:

Pressing 'Next' and completing the survey will indicate that you have given your consent to participate in this research study.

PARTICIPANT'S RIGHTS

Principal Investigator: Sarah Mallory, M.Ed.

Research Title: Peer Victimization and Bullying in School

- I have read and discussed the Research Description with the researcher. I have had the opportunity to ask questions about the purposes and procedures regarding this study.
- My participation in research is voluntary. I may refuse to participate or withdraw from participation at any time without jeopardy to future medical care, employment, student status or other entitlements.
- The researcher may withdraw me from the research at his/her professional discretion.
- If, during the course of the study, significant new information that has been developed becomes available which may relate to my willingness to continue to participate, the investigator will provide this information to me.
- Any information derived from the research project that personally identifies me will not be voluntarily released or disclosed without my separate consent, except as specifically required by law.
- If at any time I have any questions regarding the research or my participation, I can contact the investigator, Sarah Mallory, who will answer my questions. The investigator's phone number is (202)-907-8779. The investigator's email is: sbm2150@tc.columbia.edu.
- If at any time I have comments, or concerns regarding the conduct of the research or questions about my rights as a research subject, I should contact the Teachers College, Columbia University Institutional Review Board /IRB. The phone number for the IRB is (212) 678-4105. Or, I can write to the IRB at Teachers College, Columbia University, 525 W. 120th Street, New York, NY, 10027, Box 151.
- I should receive a copy of the Research Description and this Participant's Rights document.