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Running Head: AUTISM SPECTRUM DISORDER, ATTITUDES, PEER RELATIONSHIPS

Why Can't We Be Friends?: The Effects of Disclosure and Severity on Typical Students' Attitudes Toward Peers with Autism Spectrum Disorders

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Abstract

The autism spectrum disorders (ASDs) are characterized by deficits in social interaction, communication, and restrictive and repetitive behaviors and interests. Although many children with autism desire social interaction, they tend to have a difficult time mastering conversation skills and socially appropriate behavior. In addition, they have fewer and lower quality friendships when compared to typical peers, and they often face negative stigma from their typical peers. The current study was used to investigate typical students' attitudes toward hypothetical peers with varying degrees of ASDs. Participants (N = 61) read and responded to vignettes that depicted adolescents, in which severity of ASD symptoms and disclosure of autism were manipulated. There was a significant main effect for severity, such that as symptoms of the condition became more severe, peer attitudes decreased. There was also a significant interaction effect between severity and disclosure, suggesting that disclosure increased attitudes toward individuals with relatively moderate or severe conditions but had no apparent impact toward the individual with a mild condition. Overall, these findings suggest that middle school students are less accepting of children with more severe autism characteristics and that disclosing one's condition is beneficial, at least for persons with moderate or severe characteristics.

Why Can't We Be Friends?: The Effects of Disclosure and Severity on Typical Students' Attitudes Toward Peers with Autism Spectrum Disorders

The pervasive developmental disorders (PDDs), also known as the autism spectrum disorders (ASDs), form a category of developmental disorders that include autistic disorder, childhood disintegrative disorder (CDD), Asperger's disorder, Rett's disorder, and pervasive developmental disorder-not otherwise specified (PDD-NOS; Volkmar & Lord, 2007). These disorders are assumed to have a biological and genetic basis and frequently co-occur with mental retardation (Volkmar & Lord, 2007). The prevalence rate for all pervasive developmental disorders is approximately 1 case per 150 people (Volker & Lopata, 2008), although rates are higher in males than females at a ratio of 4.3:1 (Fombonne, 2007). The ASDs are characterized by deficits in social interaction, communication, and restrictive and repetitive behaviors and interests (Simpson, de Boer-Ott, & Smith-Myles, 2003). Because autism symptoms can range from mild to severe, it is referred to as a "spectrum" disorder (Prior & Ozonoff, 2007). Similarly, associated intellectual impairments can range from severe mental retardation to average intelligence to even savant-like abilities (Prior & Ozonoff, 2007). Social deficits are a key factor in autism and are usually apparent early in development (APA, 2004). Although some children with autism desire social interaction, they tend to have a difficult time mastering conversation skills and socially appropriate behavior (Prior & Ozonoff, 2007; Humphrey & Lewis, 2008).

Despite these characteristics, children with ASD, similar to all children with disabilities, are entitled to be included in the "least restrictive" educational environment by the Reauthorized Individuals with Disabilities Education Act (IDEA; Simpson, de Boer-Ott, & Smith-Myles,

2003). The least restrictive environment (LRE) ensures that students with disabilities are placed in an environment that is as close to regular settings as possible, given the child's educational needs. In essence, these regulations indicate that many students with disabilities should be provided, to the greatest extent possible, with the opportunity to be a part of mainstream classrooms with their typically developing peers (Simpson et al., 2003). Eighty percent of students with disabilities are educated in inclusive classrooms (Morrison, 2007), which refers to general classrooms that educate both typical children and children with disabilities together. Students with disabilities may take part in full or partial inclusion. While full inclusion means that students with disabilities have all of their classes in mainstream or typical educational environments, partial inclusion means that students receive some education in mainstream classrooms (Morrison, 2007). Because of their relatively intact cognitive abilities, children with Asperger Syndrome (AS) or high-functioning autism (HFA) are more likely to be in inclusive classrooms than children that are functionally lower on the spectrum (Humphrey & Lewis, 2008; Wainscot, Naylor, Sutcliffe, Tantam, & Williams, 2008). Further, those individuals with more intellectual capabilities may be able to engage in more advanced interactions with typical peers (Bauminger, et al., 2008).

Children with ASDs need to have social support and positive attitudes from their peers in order to be successfully integrated into a classroom (Simpson, de Boer-Ott, & Smith-Myles, 2003). Humphrey and Lewis (2008) interviewed 20 adolescents with AS and found that a key theme that participants reported was the need to feel similar to their classmates, so that they could be accepted by their peers. Many of these students had social difficulties in the school environment because they were bullied by classmates who did not understand their disorder or who took advantage of their social naïveté.

Because children with ASDs are often excluded and do not have many friends in school, there is a serious need to address the underlying reasons for this exclusion. Several researchers have studied the feelings and attitudes of children with ASDs in school environments (e.g., Bauminger & Kasari, 2000; Bauminger, Solomon, Aviezer, Heung, Gazit, Brown, & Rogers, 2008; Humphrey & Lewis, 2008; Wainscot, Naylor, Sutcliffe, Tantam, & Williams, 2008) and ways to improve the social deficits present in children with ASDs through interventions (e.g., Greenway, 2000; Frederickson & Turner, 2003; Kalyva & Avramidis, 2005; White, Keonig, & Seahill, 2007). However, the previous literature has rarely examined typical children's attitudes toward students with autism (Swaim & Morgan, 2001; Campbell, Ferguson, Herzinger, Jackson, & Marino, 2004; Campbell, 2007). In an attempt to gain a fuller perspective, the current study will investigate typical students' attitudes and behavioral intentions toward peers with ASDs. The study is grounded in the research literature on the social characteristics of children with ASD, attitudes of typically developing peers, and current methods for increasing peer reactions.

Social Characteristics and Outcomes for Children with ASD

Children with ASDs tend to be characterized as aloof, indifferent, and passive in their interactions, or lack thereof, with others (Prior & Ozonoff, 2007). Research suggests that many children with AS may want to connect and socialize with others but have a difficult time in doing so because they cannot master the reciprocity and fluency of the social communication (Prior & Ozonoff, 2007; Humphrey & Lewis, 2008). A major deficit in their communication is a lack of reciprocity in conversation, possibly because of theory of mind (understanding what others may be thinking) deficits (Prior & Ozonoff, 2007; Humphrey & Lewis, 2008). Besides these communication challenges, children with ASDs tend to also engage in socially embarrassing behavior, such as rocking, flapping, throwing temper tantrums, or saying inappropriate things

(Prior & Ozonoff, 2007). These factors can make communication and social interactions with others difficult for people with ASDs. When observing both typical children and children with high-functioning autism, Bauminger and colleagues (2008) found several differences between their friendship behaviors. Children with HFA tended to play in parallel (individually) compared to the coordinated (interactive) play of the typical children. Typical children also exhibited more friendship-related behaviors, such as positive affect, and more conversation skills, especially conversation flow and reciprocity.

Studies consistently show that adolescents with autism have fewer and lower quality friendships when compared to their typical peers (Bauminger & Kasari, 2000; Bauminger, Solomon, Aviezer, Heung, Gazit, Brown, & Rogers, 2007; Wainscot, Naylor, Sutcliffe, Tantam, & Williams, 2008; Humphrey & Lewis, 2008). Wainscot and colleagues (2008) asked children with high-functioning autism and Asperger Syndrome to describe their friendships and social behaviors during the school day. When compared to their typical peers, the students with autism had significantly fewer friends, spoke to fewer classmates, and had lower quality friendships. However, both typical students and those with autism had the same chances of having a best friend. Similarly, in a study conducted by Bauminger and Kasari (2000) on 22 adolescents with ASDs, all of their participants reported having a best friend.

Other studies suggest that students with ASD have problems defining what "friendship" means and what does and does not make up a "friend." For example, although they may know that they have friends, they may have difficulty finding the words to describe their relationships (Carrington, Templeton, & Papinczak, 2003). Similar to the problems children with ASDs have with friendship, children with autism feel loneliness, but they have a difficult time describing the concept itself. When asked to give a definition of loneliness, students with ASD were

significantly less likely to give a complete definition than their typical peers. This "complete" definition required both affective and social-cognitive aspects. Only 30% of children with ASD were able to give this complete definition compared to the almost 74% of typical students. Further, the children with ASDs reported significantly greater feelings of loneliness than did typical children (Bauminger & Kasari, 2000).

Students with ASDs also tend to experience higher levels of anxiety than their typical peers. This anxiety could be attributed in part to stress from challenges associated with social reasoning (Humphrey & Lewis, 2008). The anxiety could also be due to the stress brought on by social interactions or expectations, which take place throughout adolescence for all children (Carrington, Templeton, & Papinczak, 2003). However, this stress may be greater for students with ASDs because they are more likely to experience social isolation and to be the targets of bullying than typical students (McDougall, DeWit, King, Miller, & Killip, 2004; Humphrey & Lewis, 2008; Wainscot, Naylor, Sutcliffe, Tantam, & Williams, 2008).

In sum, children with ASDs and typically developing children differ in their social characteristics and reported friendship quality. Because of these deficits in students with ASDs, there is a need to further investigate the issues associated with these two populations. It is important to examine the attitudes of typical students toward their peers with ASDs in order to predict willingness to engage in prosocial behaviors and encourage typical students to initiate prosocial behaviors. By understanding typical children's perspectives, programs and other peer groups can be initiated in mainstream environments to promote interactions and friendships between these two groups and to overcome the challenges that many individuals with autism face.

Attitudes of Typically Developing Peers

Children with ASDs often face negative stigma from typical peers. McDougall's study (2004) of attitudes of typical high-school students showed that 61% of students had "above neutral" to "very positive" attitudes about peers with disabilities using the Chedoke-McMaster Attitudes Towards Children with Handicaps (CATCH) Scale. Positive student relationships within the school were associated with students having positive attitudes (McDougall et al., 2004). Despite this, there is substantial evidence that students with ASDs experience negative stigma (Swaim & Morgan, 2001; Campbell, Ferguson, Herzinger, Jackson, & Marino, 2004; Campbell, 2007). For example, 21% of McDougall's participants reported having "below neutral" to "very negative" attitudes toward peers with disabilities. More specifically, students with ASDs are favored even less than children with physical disabilities (Nowicki & Sandieson, 2002).

When investigating predictors of negative stigma toward children with ASDs, four predictors appear, including demographic variables, prior experience, severity, and perceived similarity. Demographic variables, such as age and gender, have been associated with participants' attitudes toward peers with ASDs. Younger children tend to report more favorable attitudes and intentions to interact with children with ASDs than older children. Swaim and Morgan (2001), using the Shared Activities Questionnaire (SAQ), which asks children if they would be willing to participate in activities with a specific child with a disability, found that although children, in general, reported more negative attitudes about the child with autism, sixth grade students rated the child more negatively than third grade students. However, this may depend on the age groups and disability in question. Children under six years reported more negative playmate preferences toward a child that was physically handicapped than children

above this age (Nabors & Larson, 2002). The difference between age groups is also seen when comparing children and adults. Although children and adults both reported a child with autism as unlike them, children were more likely to report dislike or avoidance for a child with autism (Harnum, Duffy, & Ferguson, 2007). Another trend in the data shows that males tend to report more negative attitudes toward children with disabilities than females. Males report significantly more negative attitudes and playmate preferences than females toward a general peer with a disability, such as being physically handicapped in a wheelchair (Rosenbaum, Armstrong, & King, 1986; Nabors & Larson, 2002; McDougall, DeWit, King, Miller, & Killip, 2004), as well as more negative attitudes and behavioral intentions toward a peer that specifically had autism (Campbell, 2007).

Other factors that are of interest in regards to students' attitudes toward their peers with disabilities are prior knowledge of and contact with the disability in question. Having contact with someone with a disability has been shown to increase ratings of another person with a disability (Rosenbaum, Armstrong, & King, 1986). Similarly, having knowledge about and prior contact with individuals with a disability, such as an ASD, may positively affect one's attitudes. More knowledge is associated with more accurate etiological understanding of ASDs (i.e., biomedical versus psychosocial explanations; Campbell, 2006). Prior knowledge about autism has been found to be associated with more positive behavioral intentions, but only when participants also receive disclosure of the disability (Campbell, Ferguson, Herzinger, Jackson, & Marino, 2004).

The perceived level of severity of the condition or disorder also affects typical peers' attitudes of individuals with disabilities. Several researchers have given participants one of two types of vignettes to determine the importance of condition and severity. For example, in Socall

and Holtgraves' (1992) study, they gave adults one vignette, which either had a labeled mental disorder or a labeled physical disorder. The physical disorder had the same symptoms and conditions as the mental disorder (e.g., depression versus medication side effects), and the vignettes ranged in severity from low to moderate to high. When rating how much physical distance or rejection they felt toward the person in the described vignette, participants rejected mentally ill targets significantly more than physically ill targets. In addition, as severity increased, rejection ratings significantly increased. Similarly, Wang, Thomas, Chan, and Cheing (2003) used vignettes and found that American college students preferred to work most with patients that that had developmental disabilities, then physical disabilities, and then mental disabilities. Their preferences of individuals with whom to work also significantly differed based on symptom severity. They preferred to work most with those with mild disorders, then moderate, and then severe. Essentially, this research shows that individuals with severe disabilities are the least preferred population to work or participate with, and individuals with mild disabilities are the most preferred.

The fourth predictor was perceived similarity to the target child. Typical children tend to consider children with autism different than themselves and from their fellow peers. Campbell and colleagues (2004, 2006, 2007) have conducted several studies investigating the attitudes of typical children toward peers with autism. In one study, students in third, fourth, and fifth grades either viewed a videotape of a typical child or a child with autism. The participants rated the typical child as more similar to their classmates than the child with autism (Campbell, Ferguson, Herzinger, Jackson, & Marino, 2004). Swaim and Morgan (2001) found similar results with third and sixth-graders. Children were more likely to report the typical child was more similar to themselves than the child with autism. Additionally, Harnum, Duffy, and Ferguson (2007)

compared children and adults' perceptions of similarity to a child with autism, and both groups reported themselves as significantly unlike the child. It has been hypothesized that perceptions and attitudes about others will be more positive if they are considered similar to the rater (Nabors & Larson, 2002), which may partially explain why the typical child is rated more favorably than the child with autism in Campbell's studies.

In sum, children with ASDs are stigmatized by other students. The perceptions of other students appear to be moderated by other factors, such as demographic variables, prior experience, severity, and perceived similarity. Older children and males report more negative attitudes toward individuals with ASDs than younger children, adults, and females, although having prior experience with disabilities, specifically ASDs, can lead to less negative attitudes. Finally, more negative attitudes are associated with more severe symptoms and less perceived similarity.

Methods for Increasing Peer Interaction

Because of the negative attitudes that many typical children have toward children with ASDs, and in order to create a better educational environment for all children, it is important to integrate these two groups. One set of intervention approaches focuses on improving the skills of the individual with the ASD to enable communication with other peers (Greenway, 2000). Such research includes social skills training (White, Keonig, & Scahill, 2007), discrete-trial approaches (Lovaas, 1987), and social stories (Gray, 1994). While such methods are essential in ASD interventions, a full discussion is beyond the scope of this review. For more information on this topic, please refer to Greenway (2000) and White, Keonig, and Scahill (2007).

A second set of intervention approaches target peers rather than focusing exclusively on the child with ASD. These interventions can lead to positive effects for both the individual with

ASD and typical peers. For example, Haring and Breen (1992) implemented a social network intervention, in which typical students were placed in a group with a student with autism. Although the student with an ASD had no interactions with typical peers before the group began, he was invited, for the first time, by same-age peers to participate in activities with them. Further, the student with autism also increased the amount of interactions with typical peers during nonstructured parts of the day (e.g., lunch, gym). The suggested rate of meeting for groups, like these, which promote prosocial behaviors between typical and disabled students is at least once a week, as it will help keep the schedule stable and become routine for the individual with an ASD (Haring & Breen, 1992). Other groups that have implemented peer interventions have demonstrated improvements in the number and frequency of interactions of students with disabilities (Thiemann, & Goldstein, 2004; Nelson, McDonnell, Johnston, Crompton, & Nelson, 2007; Owen-DeSchryver, Carr, Cale, & Blakely-Smith, 2008). Even peers that are not included in the social intervention group have been shown to increase their initiations (Owen-DeSchryver, et al., 2008).

Students that participate in groups that promote social interactions of typical peers and those with disabilities may also report more positive attitudes towards students with disabilities. After participating in a small group of five students, one having autism, the typical peers reported increased satisfaction, improved attitude, and higher ratings of friendship toward peers with disabilities (Haring & Breen, 1992). Thiemann and Goldstein (2004) paired each of five children with autism with two typical peers, and they used peer training and social skills practice to increase communication. They found that some peer ratings improved, such as ratings of friendship and peer acceptance, to the degree that final ratings of the students with autism were similar to that of randomly selected typical peers. Further, these ratings varied for the individual

participants with disabilities. This could imply that after the intervention, the typical students were rating them as individuals, similar to their classmates, and not specifically as a person with a disability.

Potentially, disclosure may be another way to increase interactions between typical students and students with ASDs. Disclosure can be expressed and carried out in a manner of ways, but its main purpose is to inform others about an individual's condition (Nabors & Larson, 2002). Simply telling others about a condition is much less expensive and takes less time than more elaborate interventions. Despite being a potential inexpensive and quick way to increase understanding by others, whether and how to disclose an ASD is something that individuals and families struggle with. The effects of the disclosure of a disability can be positive or negative. On the one hand, it can allow for special accommodations to be made for the individual, and it can help the individual cope and understand their disability by being open and honest about their condition. On the other hand, other people may not understand or be willing to make adjustments for the individual. Further, they may have negative attitudes about a disability and be unwilling to change them. In these cases, disclosure could negatively impact the individual (Roberts & Macan, 2006). When Humphrey and Lewis (2008) interviewed students with autism and AS, some students reported that their peers bullied them *because* the other students were aware of their autism.

There are at least two types of information that can be provided in disclosure: *descriptive* information and *explanatory* information (Nabors & Larson, 2002). Descriptive information, also called positive information, discusses similarities between the individual with the disability and their typical peers (e.g., both individuals like to go to the movies), while explanatory information contains specific information about the disability the individual has (e.g., the

individual was born with a disability; Nabors & Larson, 2002; Campbell, 2007). Receiving disclosure about a disability, or explanatory information, may have an effect on children's behavioral intentions. Campbell (2004, 2007) designed a series of vignettes in which disclosure was manipulated. Participants viewed a videotape of a child that exhibited autistic characteristics and either received only descriptive information or both descriptive and explanatory information about the child. Students that received both types of information were more likely to have positive behavioral intentions toward the child with autism than those that only received descriptive information (Campbell, Ferguson, Herzinger, Jackson, & Marino, 2004). Further, although both groups reported their classmates as more similar to the typical child than to the child with autism, participants that received explanatory information reported that their classmates were similar to the child with autism more than participants who only received descriptive information (Campbell et al., 2004). Although descriptive information can be useful in changing perceptions, it is less effective alone than when combined with explanatory information, which can be used to change individuals' perspectives about mental health stigma, specifically for autism (Campbell, 2007). The current study builds on this prior work by further examining the effects of explanatory information on attitudes toward children with autism (i.e., Campbell et al., 2004; Campbell, 2007).

Current Study

Prior research has shown that children with disabilities face adversity in the school system because they have social deficits, which distance them from typical peers. They have fewer friends and lower quality relationships than typical peers, and they are often bullied by other children. Although there has been research with adolescents with autism on ways to promote social situations and skill development, most research has focused primarily on the

affected child. More research is needed to understand the perspective of typical children. By studying this, there is an opportunity to gain understanding on why peers do or do not interact with children with autism or similar disorders. Furthermore, more research is needed to investigate what factors influence peers' attitudes about children with autism, such as severity and explanatory information.

The current study was used to examine the effects of disclosure and severity of ASD symptoms on middle school students' attitudes toward students with autism. Specifically, we assessed the reactions of typically developing middle school students to hypothetical peers with ASD. We were especially interested in the degree to which these reactions were influenced by advance explanatory information about autism, severity of autistic symptoms, and prior contact with autism. We conducted a computer-based study in which students were asked to imagine experiences related to joining a (hypothetical) friendship club at school. Participants read and responded to three vignettes of children with varying degrees of severity and disclosure. For this experiment, there were two main hypotheses. First, a main effect for severity was expected, such that typical adolescents would rate the child with the most severe autism less favorably and the child with the least severe autism most favorably. Second, an interaction effect was hypothesized, such that the effects of disclosure would differ based on whether peers were reacting to a child with mild, moderate, or severe ASD. Additionally, exploratory analyses were planned to examine the relationship between demographic information, such as participants' gender, age, knowledge of autism, and attitudes. Consistent with previous research, it was also expected that students with prior knowledge of and contact with individuals with autism would report more positive attitudes and behavioral intentions toward the children with autism compared to students with no prior knowledge.

Methods

Participants

Sixty-one participants (38 boys, 23 girls) were recruited from a public middle school in the Midwest. Participants were 12 to 14 years old (M = 13.00, SD = 1.00) and in the seventh (55.7%) or eighth (44.3%) grades. The majority of participants identified themselves as white (62.7%), while the remaining 37.3% identified themselves as Asian (11.9%), Multiracial/ethnic (10.2%), Black (6.8%), Hispanic (5.1%), and Native American (3.4%). As displayed in Table 1, the level of prior experience with individuals with disabilities was fairly high. Although 28.8% of students had no contact with anyone with autism or a similar disorder, 47.4% had at least monthly contact. Additionally, only 8.5% of the sample were unfamiliar with autism (i.e., they did not know anyone with autism and had not heard of autism before participating), and 50.8% knew someone with autism.

The researcher recruited the students through their study hall periods at the public school, with the aid of their study hall teachers. Flyers were distributed to about 200 students, and 61 students agreed to participate, yielding an approximate participation rate of 30%.

Measures

Chedoke-McMaster Attitudes Towards Children with Handicaps (CATCH). A six-item abbreviated version of the CATCH (McDougall, DeWit, King, & Killip, 2004), originally developed by Rosenbaum, Armstrong, & King (1986), was used to measure adolescents' attitudes toward their partner with an ASD. The original CATCH was adapted in three ways. First, only six items were used out of the original 36 items. These six items loaded the most highly on the affective and behavioral components of attitude (Rosenbaum et al., 1986; McDougall et al., 2004). Second, the phrasing was made more specific. Both the original

version and the abbreviated version of CATCH used a generic description of disability to examine broad attitudes toward children with disabilities. For this study, instead of using "handicapped" or "disabled" in the items, "this partner" was inserted (e.g., "I would enjoy being with a disabled student" became "I would enjoy being with this partner."). Third, two additional questions that were similar to the theme and structure of the original CATCH items were added to assess more specific affective and behavioral intentions toward their partners. These questions asked participants about their comfort level with the described partner and how willing they would be to include the partner in their group of friends. The six items chosen for this particular study have high internal consistency (alpha = .91). Alpha levels for the current study were high for the CATCH scales (alpha ranged from .93 to .94 across the vignettes). Participants answered these eight questions after each vignette. For all CATCH items, responses were on a five-point scale from "strongly disagree" to "strongly agree." Thus, higher responses indicated more positive attitudes towards children with disabilities. (*See Appendix for all CATCH items.*)

Ranking Items. Participants' real attitudes toward people with disabilities might be masked by their desire to respond in a socially appropriate manner (e.g., participants might rate all three peers similarly because they fear being too negative). In an attempt to correct for this, participants made judgments that involved direct comparisons of their reactions to the three hypothetical partners. These items, developed specifically for this study, asked respondents to indicate with whom they would prefer as (a) a club partner, (b) a friend, or (c) someone to help. In addition, participants were asked to indicate with whom they would like to spend the most time and to whom they would give the most money, by dividing 25 hours and 25 dollars, respectively, across the hypothetical partners. (*See Appendix for all Ranking Items.*)

Social Anxiety Scale (SAS). To measure social anxiety, a potential confound with regard to students' responses, an abbreviated version of the Social Anxiety Scale (SAS) developed by La Greca & Stone (1993; McDougall, DeWit, King, Miller, & Killip, 2004) was used. This measure contains six items about perceived social anxiety when in a situation with typical peers (e.g. "I get nervous when I talk to new kids"). Responses were on a five-point scale from "not at all" to "all the time," with higher responses indicating more perceived social anxiety. The SAS has acceptable internal consistency and reliability (original alpha = .78; current study alpha = .85). (*See Appendix for all SAS items.*)

Developmental Disabilities Background Items. Three items asked participants about their prior contact with someone with ASD ("I know somebody with autism really well" to "I don't know somebody with autism, and I had not heard of autism before this study"), their knowledge of ASD ("I know or have known somebody with autism really well" to "I don't know anyone with autism, and I had not heard of autism before this study"), and their knowledge of mental retardation ("I know or have known somebody with mental retardation really well" to "I don't know anyone with mental retardation"). The two items that addressed participants' prior knowledge about autism and mental retardation had a higher reliability (alpha = .80) than all three Developmental Disabilities Background Items together, which included the two knowledge items and the prior contact with autism item (alpha = .77). Therefore, only the two knowledge items were used to calculate the Developmental Disabilities Knowledge Scale. *(See Appendix for Developmental Disabilities Background Items.)*

Demographic Items. In order to be able to describe the sample, general demographics were asked (i.e., gender, age, grade, and ethnicity). (*See Appendix for Demographic Items.*)

General Procedures

The researcher took students from their study hall classrooms to the school's Information Media Center. Participants were seated at computers, and the researcher and a research assistant trained in the study procedures gave a brief description of the study. Results were collected via a web-based software program, *Psychdata.com*. The students were given instructions by the researcher regarding how to use the program and were encouraged to request assistance if they encountered any problems while performing the experiment. During the active phase of the experiment, participants read and responded to three vignettes. The current study was the first phase of a larger experiment, and it took approximately twenty minutes. At this point, participants completed the second part of the experiment, after which, they were debriefed and thanked for their participation. They were compensated with a thank you gift selected from a choice of small items valued at five to ten dollars (e.g. notebook/folder set, T-shirt).

Experimental Design

A two (level of disclosure) by three (ASD severity) mixed experimental design was used. Disclosure was a between subjects manipulation, in which participants were randomly assigned to receive advanced explanatory information (disclosure) or to receive only the vignette (no disclosure). ASD severity was a within-subjects manipulation. Participants read three vignettes that increased in apparent severity of the disorder. The two independent variables were embedded in the experimental stimuli.

Experimental Stimuli

The experiment began with all participants being given a brief description of a school-based "Lunch Club" designed to get students more involved with their peers (*see Appendix for Introductory Script*). Participants were asked to imagine that the proposed club would take place

over three weeks and that they would interact with a new partner each week. After this introduction to the club, participants read and responded to the three randomly presented experimental vignettes. Although parallel in structure, the vignettes differed in the severity of depicted ASD symptoms and related cognitive impairments. One vignette described a student with high-functioning autism, but the disability was mild and not apparent upon first contact. The second vignette described a student with high-functioning autism, but the disability was moderate, with noticeable impairments. The third vignette described an individual with severe autism and mental retardation. The vignettes were designed for this study with careful reference to DSM-IV criteria for autistic disorder, tone (i.e., expressing severity accurately but without judgment), and similarity in length across the three vignettes (217 words). Vignettes were presented in a random order to reduce anchoring effects. Girls responded to vignettes depicting female peers, and boys responded to vignettes depicting males (all other script was identical; *see Appendix for Vignettes*).

As described above, participants were randomly assigned by the computer program to receive disclosure information with each vignette or to receive only the vignettes. In the disclosure condition, the participants received this brief paragraph describing autism at the beginning of each vignette:

> Autism is a condition that affects the way people think and act. People born with autism may have trouble talking or interacting with other people. They may also have some unusual behaviors and interests. Some people with autism also have mental retardation and learn more slowly than most people. Other people with autism are very smart and can do well in school.

In addition to this paragraph, in all three vignettes, the disclosure group read a sentence that stating the potential partner's autism and the severity of his (or her) disability (e.g., "He was born with autism, and his symptoms are obvious"). Afterward, the vignette continued, and all participants read the same stories.

After reading each vignette, participants completed the CATCH administered by the computer (abbreviated; Rosenbaum, Armstrong, & King, 1986; McDougall, DeWit, King, Miller, & Killip, 2004). After reading and responding to all three vignettes, participants completed the Ranking Items. Following the Ranking Items, participants responded to the SAS (La Greca & Stone, 1993; McDougall et al., 2004) and the CATCH adapted for the participants to rate themselves (abbreviated; Rosenbaum, et al., 1986; McDougall et al., 2004). Participants completed Part II of the study and the demographic questions.

Results

Analyses of Predictors

Correlations and descriptive analyses were performed to assess associations among and between dependent variables and possible predictors. Table 2 presents correlations among attitudes scales (CATCH), age, social anxiety (SAS), and prior knowledge of ASD and MR. The CATCH scale for the mild vignette was moderately positively correlated with the CATCH scale for the moderate and severe vignettes (r = .44 and .46), while the moderate and severe vignettes were strongly positively correlated with each other (r = .72).

There was a lack of correlations between possible predictors and subscales. The CATCH scales were not significantly correlated with social anxiety (SAS) or age with one exception (a weak negative correlation between the responses for the mild vignette and age). An exploratory hypothesis was that students with prior knowledge of autism and mental retardation would report more positive attitudes and behavioral intentions toward the children with autism compared to students with no prior knowledge. Contrary to the hypothesis, participants' prior knowledge as measured by the Developmental Disabilities Knowledge Scale was not significantly related to their CATCH ratings (r = -.01 to .13 across CATCH scales, all *ns*). Because there were either no

or low significant correlations, neither age, social anxiety, nor prior knowledge were used as covariates. Gender was also considered as a possible covariate due to prior research. A 2 x 3 x 2 ANOVA was also run to check for main effects or interaction effects between gender, disclosure, and severity on the CATCH scales or the ranking and time items. There were no significant main effects for gender or interactions involving gender.

Effects of Severity and Disclosure on Attitudes

CATCH Scales. To analyze the possible effects of ASD severity and disclosure on students' attitudes, a 2 (disclosure) x 3 (ASD severity) mixed ANOVA was used. Disclosure was the between subjects variable and ASD severity was the within subjects variable, and CATCH scores were the dependent variable. Based on Mauchly's test, the assumption of sphericity was violated. Therefore, as per recommendations by Field (2009), Huynh-Feldt-corrected F's will be reported for tests involving severity, the within-subjects factor, for CATCH results, and Greenhouse-Geisser-corrected F's will be reported for tests involving severity for the money and time items.

Although the analysis did not yield a main effect for disclosure, $F(1, 59) = 1.41, p = .239$, it yielded a significant main effect for severity, $F(1.87, 110.36) = 94.14, p = .000$, and a significant disclosure x severity interaction, $F(1.87, 110.36) = 3.16, p = .049$ (see Table 3 for means and standard deviations). The main effect for severity supported the hypothesis that typical adolescents would report more negative attitudes with increasing severity of ASD symptoms. The effect size was large, as partial Eta squared was .72, which indicated that the severity factor by itself accounted for 72% of the overall variance in attitudes. Bonferroni corrected post hoc tests showed that CATCH scores differed significantly across all three vignettes. Participant attitudes were more positive toward the target child in the mild vignette

(M = 3.54, SD = .83), which were significantly more positive than attitudes toward the target child in the moderate vignette (M = 2.49, SD = .85), which were significantly more positive than attitudes toward the target child in the severe vignette (M = 2.15, SD =.85). Simple main effects showed that the significant effect of severity held for both disclosure and no disclosure conditions. The significant Severity x Disclosure interaction supported the hypothesis that the effects of disclosure on attitudes differed based on the severity of the symptoms depicted in the target child, as depicted in Figure 1. Participants in the disclosure condition reported more positive attitudes toward the moderate and severe target children (moderate: M = 2.70, SD = .88; severe: M = 2.37, SD = .85) than did participants in the no disclosure condition (moderate: M = 2.34, SD = .81; severe: M = 2.00, SD = .82). Conversely, participants in the disclosure condition expressed slightly less positive attitudes toward the mild target child (M = 3.49, SD = .94) than did participants in the no disclosure condition (M = 3.58, SD = .74). The interaction effect size was medium, with a partial Eta squared of .07.

Time and Money. To further assess the effects of severity and disclosure on children's behavioral intentions toward the peers depicted in the vignettes, participants were asked to divide 25 hours and 25 dollars between the three peers. A 2 (disclosure) x 3 (ASD severity) mixed ANOVA was run for each dependent variable. For the time item, there was no significant main effect for disclosure, $F(1, 58) = .76$, *ns*, nor a significant interaction effect, $F(1.30, 75.51) = 2.32$, *ns.* However, there was a significant main effect of vignette severity, $F(1.30, 75.51) = 54.86$, $p = .000$, $\eta^2 = .58$. Bonferroni corrected post hoc tests showed that time given to each target child differed significantly across all three vignettes. The number of hours given to target child in the mild vignette (M = 14.17, SD = 3.88) was significantly higher than the hours given to the child

in the moderate vignette (M = 6.15, SD = 3.63), which was significantly higher than the hours given to the child in the severe vignette (M = 4.67, SD = 3.13).

For the money item, there was no significant main effect for disclosure, $F(1, 57) = .95$, *ns,* a significant main effect of severity, $F(1.24, 70.66) = 14.50$, $p = .000$, and a significant severity by disclosure interaction effect, $F(1.24, 70.66) = 5.06$, $p = .021$. The main effect for severity again indicated that money given to each target child differed across vignettes. The effect size was large, as partial Eta squared was .22, which means that the severity factor by itself accounted for 22% of the overall variance. Bonferroni corrected post hoc tests indicated that the amount of money given to target child in the mild vignette (M = 11.58, SD = 5.99) was significantly higher than the money given to the moderate target (M = 6.91, SD = 3.16), which was significantly higher than the money given to the severe target (M = 6.49, SD = 3.77). In line with CATCH results, there was a significant Severity x Disclosure interaction, indicating that the money given to each target child significantly differed among participants in the disclosure and no disclosure conditions. The effect size was medium, with partial Eta squared of .09. Participants in the disclosure condition gave the moderate and severe target children more money (moderate: M = 7.91, SD = 3.24; severe: M = 7.52, SD = 3.36) than did participants in the no disclosure condition (moderate: M = 6.12, SD = 2.90; severe: M =5.67, SD =3.92). Conversely, participants in the disclosure condition gave the mild target child less money (M = 9.57, SD = 5.18) than did participants in the no disclosure condition (M = 13.17, SD = 6.18).

Ranking Items. Table 4 gives the percentage of participants in each disclosure condition that chose the mild, moderate or severe target child first in three different contexts: (a) as a partner in the Lunch Club, (b) as a friend outside of school, and (c) as someone to help. To analyze participants' preferences for the target children in different contexts, chi square analyses

were run. Analyses revealed no significant difference across the percentage of participants in disclosure and no disclosure conditions that chose the mild, moderate, or severe target child as a club partner, $\chi^2 = 1.67$, *ns*. Similarly, the percentage did not significantly differ for who participants chose as a friend ($\chi^2 = .04$, *ns*) or someone to help ($\chi^2 = 2.09$, *ns*). Given these results, data were collapsed across the disclosure conditions to analyze possible differences related to severity. There was a significant difference in the percentage of participants that chose the mild (82.5%), moderate (12.3%), and severe (5.3%) target children to be their club partner, $\chi^2 = 62.32$, $p = .000$. Similarly, significantly different percentages of participants chose the mild (84.5%), moderate (12.1%), and severe (3.4%) to be their friend, $\chi^2 = 68.93$, $p = .000$. In contrast, there was not a significant difference in the percentage of participants that chose the mild (41.4%), moderate (24.1%), and severe (34.5%) as someone to help, $\chi^2 = 2.62$, *ns*.

Discussion

Students with ASDs face many challenges, especially within the school system, because of their social deficits. For example, these individuals are often victimized by their peers, and they have lower quality friendships with other students compared to their typical counterparts (Bauminger & Kasari, 2000; Wainscot, Naylor, Sutcliffe, Tantam, & Williams, 2008; Humphrey & Lewis, 2008). Additionally, typical students report more negative attitudes toward them compared to typical peers (Swaim & Morgan, 2001; Campbell, Ferguson, Herzinger, Jackson, & Marino, 2004; Campbell, 2007). Many students with autism are being included in mainstream classrooms, therefore, there needs to be a better understanding of peer attitudes toward students with ASDs. This research attempted to investigate the problems that students with ASDs face from the perspective of the typical student. The specific objective of this study was to examine the effects of severity and disclosure on students' attitudes toward peers with ASDs.

Severity Effects

Results supported the hypothesis that typical students' attitudes would differ based on severity, such that they would be the most positive toward the peer with mild autistic symptoms and more negative toward the peers with the most severe autistic symptoms. These results for severity were found across all measures used to assess participants' attitudes and behavioral intentions (e.g., the CATCH, the money and time items, and the partner and friend ranking items). These results for severity are consistent with prior research (e.g., Socall & Hartgraves, 1992; Wang, Thomas, Chan, & Cheing, 2003), indicating that as severity increases, positive attitudes and behavioral intentions decrease. It is also consistent with the previous research which indicates that children with ASDs face negative stigma, victimization, and loneliness, as well as fewer and lower quality friendships (Bauminger & Kasari, 2000; Bauminger, Solomon, Aviezer, Heung, Gazit, Brown, & Rogers, 2007; Wainscot, Naylor, Sutcliffe, Tantam, & Williams, 2008; Humphrey & Lewis, 2008).

These findings could be related to a greater perceived similarity between the typical children and the mild target child compared to the moderate and severe target children. This interpretation would be consistent with prior research (Swaim & Morgan, 2001; Campbell, Ferguson, Herzinger, Jackson, & Marino, 2004; Harnum, Duffy, and Ferguson, 2007), indicating that children and adults report feeling that children with autism are very different from themselves.

Alternatively, effects of severity could be related to participants' views of each of the targets. All three CATCH responses were significantly correlated; however, the strength of the correlations varied by level of severity. The moderate and severe vignettes were strongly positively correlated with one another ($r = .72$), indicating the students responded very similarly

to each of these scales after they read the vignettes. However, results were slightly different for the mild vignette. Responses were moderately positively correlated with the moderate (r = .44) and the severe (r = .46) vignettes, but these correlations are of less magnitude than the correlation between the moderate and severe vignettes. These correlational patterns suggest that participants may have viewed the mild target as somehow different than the moderate and severe targets. The more severe targets were most likely perceived as having some type of disorder, even if the participant was not aware of the specific disorder, while the mild target may have simply been viewed as "quirky."

These findings have implications for school settings, as well as other domains. The finding that typical children were substantially less positive toward the children with more severe autistic characteristics compared to the children with mild autistic symptoms may be useful for promoting relationships between typical children and children with ASDs. Specifically, to increase students' friendship quality, interventions should specifically address concerns of middle school students regarding interaction with children with more severe symptoms of autism and promote understanding and similarity of the child with autism to typical students. Results from this study suggest that one way to promote more understanding from typical students is to disclose the peer's condition and to explain some common attributes associated with that condition.

Disclosure Effects

As stated in hypotheses, an interaction effect was anticipated between severity and disclosure, such that the effects of severity on attitudes reported by students would differ based on whether or not the target child's autism was disclosed. The predicted interaction was found for the primary measure of peer attitudes (i.e., CATCH scale) and the money item, but it was not

found in the time item or ranking items. The significant interaction effects indicated that the impact of symptom severity differed based on disclosure condition. Participants in the disclosure condition reported more positive attitudes toward the moderate and severe target children than did participants in the no disclosure condition. Conversely, participants in the disclosure condition expressed slightly less positive attitudes toward the mild target child than did participants in the no disclosure condition. Although it is encouraging that typical students' attitudes increased toward the moderate and severe targets after they received disclosure, the attitudes were always below neutral. Contrary to this, attitudes toward the mild target, with or without disclosure, were always above neutral. Similarly, the money item showed improved behavioral intentions with disclosure (compared to no disclosure) for the moderate and severe targets, but not for the mild target. In contrast, disclosure (compared to no disclosure) did not interact with severity to increase the likelihood that participants would choose to spend time with a moderate or severe target or that participants would choose one of these targets as a social partner (either as a club partner or friend). In other words, students still chose the child with mild symptoms over the other two targets, regardless of disclosure.

Consistent with some previous research, explanatory information (disclosure) did not significantly influence participants' attitudes by itself (Swaim & Morgan, 2001). In contrast, Campbell (2004, 2006, 2007) did find effects of disclosure alone on peer attitudes toward children with autism, but he varied the types of disclosure by using three conditions: no disclosure, descriptive information, or descriptive (i.e., statements that promote similarity between the child and the reader) plus explanatory (i.e., statements that describe the condition and symptoms) information. Campbell used several negative descriptors of the target child's symptoms, and the disclosure consisted of explanatory information and descriptors of specific

ASD symptoms. In his study, descriptive information alone did not increase peer attitudes, but positive effects were seen for the descriptive plus explanatory information condition. Therefore, the current study only used two conditions: no disclosure and explanatory information. Thus, the descriptive information in Campbell's design may have played an important role in increasing attitudes. Campbell only used one vignette of a boy with autism, who could be described as having moderate or severe autism, and this was very similar to the moderate and severe vignettes that were used in the current study. The results from the current study showed that explanatory information increased students' attitudes about the moderate and severe targets, which is consistent with Campbell's findings for the one target. The current lack of overall disclosure effects may be due to the perceived difference between the target with mild symptoms compared to the targets with moderate and severe symptoms.

The finding that disclosure could increase students' attitudes about children with moderate or severe ASDs, even relatively, can be used to promote understanding and friendship between typical and affected children. By giving explanatory information to typical children in a school setting, these children may be more understanding of others' conditions and more willing to interact with these peers. As Campbell (2007) discusses, this would be explained by the theory of perceived responsibility on behalf of the target child. He suggests that people are more understanding of individuals with disabilities if those conditions are not the individual's fault or responsibility. These benefits are observed when the symptoms are visible, but not for problems that are not easily seen by others. By increasing the awareness that ASDs are biologically based, perhaps more students will see affected children in a new, more understanding, light. Although these findings show that disclosure is beneficial for students with moderate and severe ASD symptoms, the results were not clear for the target with mild symptoms. There was no evidence

that disclosure significantly increased or decreased students' attitudes toward the mild target, which may suggest that the autistic symptoms were not easily perceived by others.

Common interventions for individuals with disabilities include increasing contact between typical and affected individuals. Contrary to this theory, the current study did not find a relationship between prior contact with and knowledge of autism and students' positive attitudes. There may be something distinct about autism that does not lend itself to these contact-only interventions. Although increased contact alone may help those with other disorders, it may not have the same positive results for people with autism (Campbell, 2006). Individuals with autism may share some common symptoms or behaviors, but each person is unique, as is each interaction. Similarly, unpredictable behavior can be associated with autism, so typical individuals may not know what to expect or how to react appropriately to the varied types of behavior. A possible solution for the lack of effects from contact-only interventions is to combine contact interventions with promotion of understanding through disclosure. In sum, disclosure is a difficult choice for many families and youth with ASDs because of the risks and benefits associated with sharing this personal information. There is evidence that disclosure benefits students with moderate to severe autism, and no evidence that disclosure significantly hurts students with mild autism. When symptoms are noticeable enough for other students to perceive, as they are likely to be in real life for even "mild" forms of ASD, those students may benefit from disclosing. Therefore, it might be worth the risks in order to increase peers' attitudes.

Strengths and Limitations

The current study has several important strengths. First, the participants in this study were diverse in ethnicity (62.7% White, 11.9% Asian, 10.2 % Multiracial/ethnic, 6.8% Black,

5.1% Hispanic, and 3.4% Native American) and gender (38 boys, 23 girls). The disclosure groups did not significantly differ from each other in regards to age, gender, grade, or developmental disabilities knowledge. As described earlier, many students had prior contact with individuals with ASD, as well as previous knowledge ASD and mental retardation. Most research has examined these hypotheses with ASD-naïve samples (Campbell, 2006), and the current study had a more diverse sample in this respect. Second, the hypothesis regarding these variables (that prior contact and knowledge would be correlated with participants' responses) was not supported, and analyses indicated that the main findings were unaffected by including prior contact as a covariate. Thus, when prior contact and knowledge was controlled for, the main findings remained. Third, social anxiety was also controlled for. There were no differences between the groups in their social anxiety at school. Fourth, the vignettes were parallel in length, tone, and content, and they were matched for gender of the participant. Vignette statements were carefully linked to DSM IV criteria and characteristics of ASDs. Fifth, participants were randomly assigned to disclosure condition, and the order of the vignettes was counterbalanced to avoid anchoring effects.

The current study has several limitations that need to be understood in order to interpret the results. First, this study had a relatively small sample size of only 61 students, which led to a reduced power and questions about the external validity. Overall, the student population was ethnically diverse, but they only represented one local middle school in the Midwest. Second, about 200 flyers were passed out to students, but only 61 (or 30%) participated. Therefore, the students that participated may be different than those who did not participate, leading to selection bias. Those that participated may be, for example, more willing to help others or more responsible than middle school students in general. Third, participants may have worried about

their responses, leading to social desirability effects. There were no controls for this implemented in the study (e.g., a measure of social desirability, response bias, implicit attitudes, or behavioral observation). Fourth, the random assignment led to more students being placed in the no disclosure condition (n = 35) than in the disclosure condition (n = 26). Although it is not a large discrepancy, due to the small sample size, unequal cell size is undesirable.

Other limitations involve the manipulation of the variables. This study only used explanatory information as a form of disclosure. Results may be different, as seen in Campbell's studies (2004, 2007), if another type of disclosure was used, such as descriptive information, or a combination of the two. Campbell's studies also manipulated the source of disclosure, while the current study did not indicate where the disclosure came from. Additionally, the levels of severity were constructed using DSM-IV criteria, but since there are many different levels and characteristics of autism, it is difficult to indicate what specific level the vignettes were.

Next Steps

Future research should address the limitations discussed. First, the moderate and severe levels could be made more distinct from each other. Results showed that students reported the most positive attitudes toward the mild target, then the moderate target, then the severe target, and though they were most willing to help the mild target, their close second choice was the severe target. Students may have a threshold of severity of symptoms that they will accept. Future research might seek to detect this threshold. Second, although participants prefer the mild target overall, when they are given the choice of helping someone with moderate or severe symptoms, typical students chose the child with severe symptoms. Future studies should ask participants a variety of questions that include helping, as well as friend preferences. Third, the current study manipulated disclosure by giving participants explanatory information or no

information about autism, and no significant effects of disclosure alone were found. Therefore, another suggestion for future research is to vary the types of disclosure tested to include descriptive information, as in Campbell's studies (2004, 2007). Also, the source of disclosure (e.g., a teacher, a parent, the student) should be added to see which type of information and source promotes the most positive attitudes from typical children. Fourth, this study should also be replicated with a larger sample size in order to increase the power to detect the specific nature of the interaction between severity and disclosure. Similarly, a more diverse sample, which would include students with less knowledge about autism and contact with individuals with disabilities, should be used. Furthermore, the study should investigate the effects of severity and disclosure of ASD symptoms on attitudes of other age groups, such as elementary and high school-age students. Finally, a real "Friendship Club" could be implemented in schools in order to observe actual behavior from typical middle school students when interacting with students with ASDs. Through this club, disclosure could also be manipulated to determine its role in real situations.

Because many students with autism are being included in mainstream classrooms, more research is needed to determine ways to improve their education experience. This need is even more imperative because students with ASDs face negative stigma from typical peers and have lower quality relationships than typical peers. These results involving severity and disclosure of ASDs should be used to help students with autism and mental retardation, despite their level of severity, feel more included and accepted by their typical counterparts.

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Table 1.

Percent and Number of Participants Based on Contact with Individuals with ASD and Knowledge of ASD and MR

	Percent (Number) of Participants			
Contact	ASD	Knowledge	ASD	MR
Daily	22.0 (13)	Know someone really well	18.6 (11)	23.7 (14)
Once a week	8.5 (5)	Know someone	32.2 (19)	25.4 (15)
Once a month	16.9 (10)	Met someone, but don't know them	32.2 (19)	27.1 (16)
A few times a year	23.7 (14)	Don't know anyone, but heard of condition	8.5 (5)	18.6 (11)
Not at all	28.8 (17)	Don't know anyone, and not heard of condition	8.5 (5)	5.1 (3)

Note: N = 59 due to missing data.

Table 2.

Intercorrelations Between Subscales and Predictors

Subscale	1	2	3	4	5	6
1. Age	__	-.10	-.04	-.28*	-.07	.05
2. Knowledge		__	-.12	-.01	.07	.13
3. SAS			__	-.10	-.08	-.15
4. CATCHmild				__	.44**	.46**
5. CATCHmod					__	.72**
6. CATCHsev						__

* $p < .05$, ** $p < .01$.

Table 3.
Means and Standard Deviations of Participants' Attitudes and Behavioral Intentions by Condition

	Mean (SD)		
	Mild	Moderate	Severe
CATCH			
Disclosure	3.49 (.94)	2.70 (.88)	2.37 (.85)
No Disclosure	3.58 (.74)	2.34 (.81)	2.00 (.82)
Hours			
Disclosure	12.85 (5.60)	6.63 (3.88)	5.51 (3.14)
No Disclosure	15.18 (5.49)	5.78 (3.44)	4.01 (3.01)
Money			
Disclosure	9.57 (5.18)	7.91 (3.24)	7.52 (3.36)
No Disclosure	13.17 (6.18)	6.12 (2.90)	5.67 (3.92)

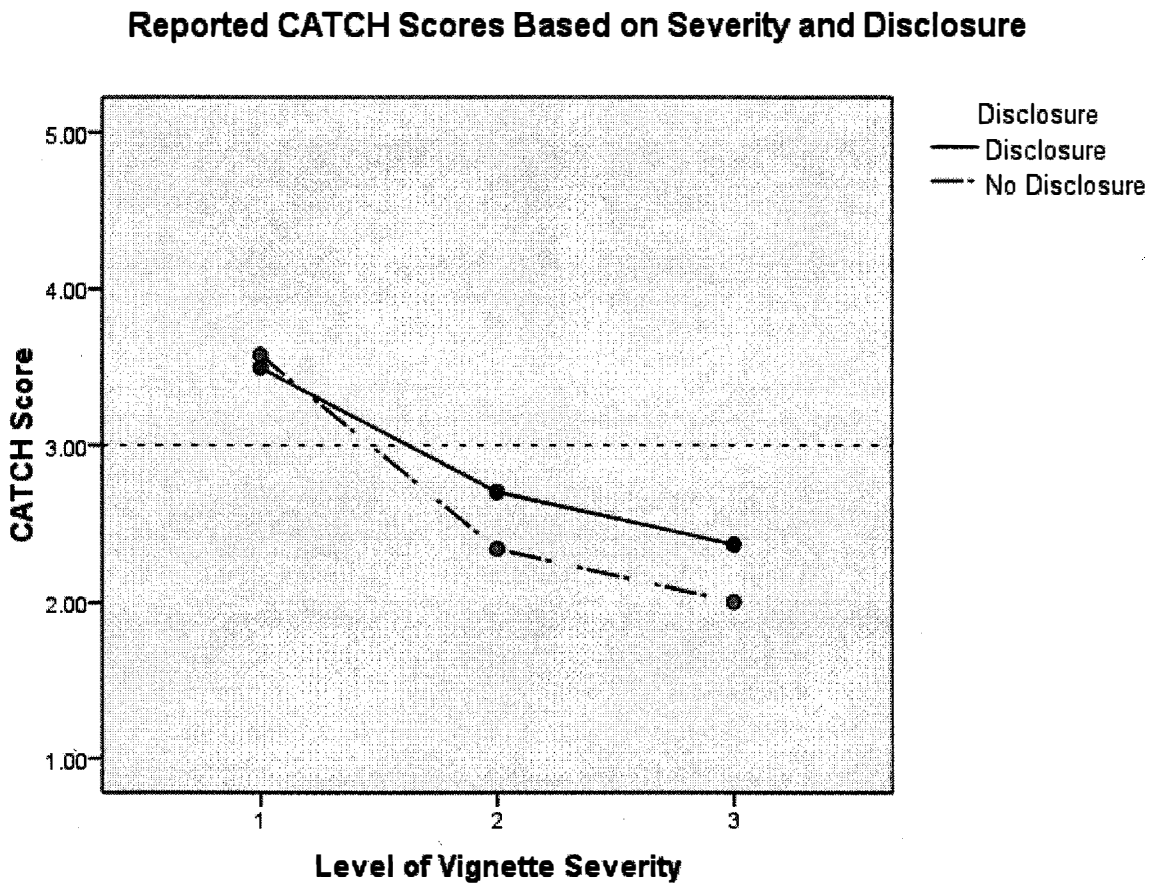
Note: CATCH scores ranged from 1 (strongly disagree to statements) to 5 (strongly agree). Hours and Money items asked participants to note how many hours (out of 25) they would be willing to spend with the partners or how much money (out of $25) they would give to partners. Disclosure n = 26, No Disclosure n = 33-35 due to missing data.

Table 4.
Percent and Number of Participants that Picked Each Hypothetical Peer First Within each Disclosure Condition

	Percent (Number) of Participants		
Who would you pick as…	Mild	Moderate	Severe
A club partner			
Disclosure	75.0 (18)	16.7(4)	8.3(2)
No Disclosure	87.9 (29)	9.1(3)	3.0(1)
A friend			
Disclosure	84.0(21)	12.0(3)	4.0(1)
No Disclosure	84.8(28)	12.1(4)	3.0(1)
Someone to help			
Disclosure	32.0(8)	24.0(7)	44.0(11)
No Disclosure	48.5(16)	24.2(5)	27.3(9)

Note: Disclosure n = 25, No Disclosure n = 33.

Figure 1.



Note: Level of vignette severity represents the severity of each target child in the vignettes: (1) represents the mild child, (2) the moderate child, and (3) the severe child. CATCH scales ranged from 1 (strongly disagree to statements) to 5 (strongly agree), and the reference line at 3.00 represents "neutral" attitudes.

Appendix

Sample Recruitment Flyer

Informed Consent Form

Informed Assent Form

Introductory Script ("Lunch Club")

Vignettes and Disclosure Text

Mood Measure

Chedoke-McMaster Attitudes Towards Children with Handicaps (All Adapted Versions)

Ranking Items

Social Anxiety Scale

Demographic Items

Developmental Disabilities Background Items

Integrity Checks Text

Debriefing Screen Text

Protection of Participant Welfare Statement for Research Assistants

Sample Recruitment Flyer

Attention Parents!
Middle School Students Needed for Research on Attitudes toward Peers

Researchers in the Psychology Department at Illinois Wesleyan University would like to invite your child to participate in a study about peer relationships.

This study will take place during your child's study hall in late January, and it will last about 30 minutes. Your child will read stories about fictional students and answer questions about them. All responses will be anonymous.

We think that this study will be fun for your child. In exchange for their participation, we will offer them a thank-you gift (see choices on reverse side).

If you have questions or concerns about this study,
Contact Dr. Linda Kunce at (309) 556-3663 or E-mail lkunce@iwu.edu
This study has been fully reviewed by the IWU Institutional Review Board, which oversees the conduct of all research with human participants.

If you would like your child to participate,

Please return the attached consent form in the provided envelope by Tuesday, January 20th.

Late consent forms will be accepted, although participation will not be guaranteed.

Attention Students!

We would like to invite you to participate in a research study on peer relationships.

This study will take place at your school. It will take about 30 minutes. You will read stories about fictional children and answer questions about them. All of your responses will be anonymous.

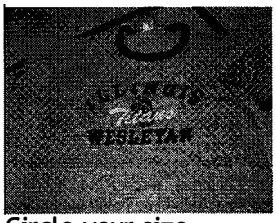
As a special thank you, we would like to give you a small gift from the choices below.

If you are interested in participating, please ask your parent to read and sign the attached form. Then, return the form and the bottom half of this flyer to school in the envelope by January 20th.

Thank you!

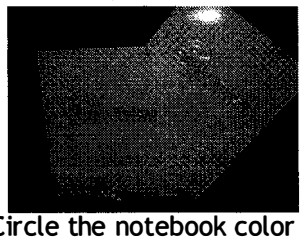
Please check the box in front of the gift you would like to receive.

T-Shirt



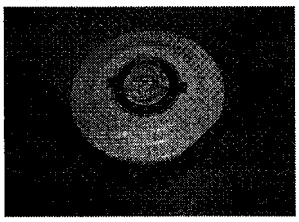
☐ Circle your size
Sizes: Kids 14/16 (Adult XXS)
Adult S, M, L, XL

Notebook, Folder, Pen, & Pencil



☐ Circle the notebook color you'd like: Yellow, Green, Magenta

Lanyard & Frisbee



☐

PARENTS: PLEASE READ AND SIGN THIS FORM

Consent to Participate in a Research Study

Title of Study:	Peer Relationships
Principal Investigator:	Linda Kunce, Ph.D., Department of Psychology
Phone Number:	(309) 556-3663
Co-Investigator:	Jacqueline Dowjotas, senior psychology student at IWU

We invite your child to participate in a research study under the direction and supervision of Linda Kunce, Ph.D. Student researchers who have been trained by Linda Kunce may assist or act for her.

Purpose: We are studying ways in which attitudes and willingness to interact with peers are affected by differences between students, such as gender, interest patterns, and abilities.

Duration: Your child's participation will take about 30 minutes.

Procedures: We will be conducting this study in the school media lab, the IMC, during 7th and 8th hour study halls. Your child will complete the study on a computer. In the study, your child will read stories about fictional students and answer questions about them. These questions will ask about their attitudes toward the students and how willing they would be to participate in activities with them. Your child will complete some questions about their own characteristics (e.g., comfort level with peers). All responses will be anonymous and will be collected using secure data collection.

Risks and Benefits: We do not anticipate any major risks and/or discomforts for your child. It is possible that your child may experience discomfort in hearing about differences or rating hypothetical children. In addition, some risks may be unforeseeable. We would like to offer a small thank-you gift to your child for participating. If you or your child decide to discontinue participation before the study is complete, your child will still receive the thank-you gift.

Confidentiality: All responses will be anonymous. Therefore, at no point will your child's name, or your name, be linked with the data s/he provided. Further, although we plan to publicly describe the research for educational or research purposes, it will be impossible to identify any specific respondent in those presentations.

Right to refuse or to withdraw from the study: Participation in this study is completely voluntary. You may refuse to have your child take part in this study. In addition, you or your child have the right to discontinue participation at any time without negative consequences.

Offer to answer questions: You have the opportunity to ask, and have answered, all your questions about this research. You may call Linda Kunce, Ph.D., (309) 556-3663.

Institutional Review Board Approval: This project has been reviewed by the Institutional Review Boards of Illinois Wesleyan University and determined to fall within ethical guidelines.

If you believe that there is any infringement upon your and/or your child's rights or you have any specific concerns about the study, you may contact the chair of the IWU Committee, Teddy Amoloza, Ph.D., (309) 556-3405.

Informed Consent Agreement:

I have read the information provided above. As a person 18 years or older, I voluntarily agree to have my child _____ (name of your child) participate in this research project. I understand I will receive a copy of this consent form for my own records.

☐ Check here if you would like a brief e-mail report about the study after it has been completed.
E-Mail:_____

_____ _____
Your Signature & Relationship to Research Subject Date

Last Updated 1/9/09

ASSENT TO PARTICIPATE IN A RESEARCH STUDY

Title of Study:	Peer Relationships
Principle Investigator:	Linda Kunce, Ph.D., Department of Psychology
Phone Number:	(309) 556-3663
Co-Investigator:	Jacqueline Dowjotas, senior psychology student

We invite you to help with our research study. The people in charge of this study are Dr. Linda Kunce and Jacqueline Dowjotas.

We are studying how pre-teens and teens react to other kids. The study will take about 30 minutes.

During the study you will be working on a computer. You will be asked to imagine that a new club is forming at your school. You will read about some children you might meet. We will ask you several questions about these children and about your own thoughts and feelings. At the end we will give you a small gift for helping us with this research project.

We think you will like doing the study and don't think that anything in the study will make you upset. However, it is possible that some of the questions or descriptions might make you feel a little bit uncomfortable or bored. Any questions you don't want to answer, you can skip.

There are no right or wrong answers to the questions in this study. We want to know what you honestly think and feel. Your answers will be anonymous, that means that we will be unable to identify what answers you give.

You do not have to be in this study if you don't want to. You may stop being in this study at any time. If you decide to stop, no one will be upset with you and you will still receive your thank-you gift.

Please do not discuss your responses or anything that you saw or read with other students until everyone has had a chance to participate.

If you have any questions about this study, you may ask your parent, Dr. Linda Kunce, or the student researcher.

_____ _____

Sign here if you want to be in the study Date

_____ _____

Signature of Researcher Obtaining Assent Date

Last updated 11/16/08

Introductory Script ("Lunch Club")

Description of the club:

Imagine that kids at school are going to form a new club called "The Lunch Club." Kids will come once a week during their lunch times to meet students that they don't know.

You will now read stories about 3 students you might meet if you joined the club. Imagine that you have a different partner each week.

Please read very carefully.
We will you ask questions about each story.

Vignettes and Disclosure Text

[Note: Vignettes will be administered using counterbalancing. In addition, students that identify themselves as males will receive this version of the vignettes, which includes masculine pronouns. For females, the script will be changed to include only female pronouns (i.e. "he" will be changed to "she," "him" to "her").]

Week 1:

Your first partner is a boy [girl] your age.

Disclosure information to be received by half of the participants:

He was born with autism, but his symptoms are mild.

- Autism is a condition that affects the way people think and act.
- People born with autism may have trouble talking or interacting with other people. They may also have some unusual behaviors and interests.
- Some people with autism also have mental retardation and learn more slowly than most people. Other people with autism are very smart and can do well in school.

Vignette text continued:

You and your partner are introduced. He greets you by saying, "Hi."

You take turns asking and answering each other interview questions, and the conversation seems pretty typical.

- He sits facing you and seems interested when you talk.
- The way he talks and looks at you seems normal. But, sometimes he sounds more like a teacher than a student.
- He seems to enjoy answering your questions and listening to what you say. When you ask where he lives, he tells you exactly what streets to use to get to his house, and then he starts talking about different types of maps.

The teacher tells the group that it's time to pick out some games.

- Your partner keeps talking about maps, but once you tell him what the teacher said, he laughs and goes with you.
- Your partner plays his game well, and when you play your game, he does well at that game, too. He always knows when it's his turn and waits patiently for you to take yours.
- During the game, it gets pretty loud in the classroom, and he says the noise bothers him.

The teacher tells everyone it's time to go for the day. You say goodbye, and your partner says goodbye and that he had fun today.

Next we will ask you questions about this partner.
Re-read the passage above if you want, then click Continue.

Week 2:

Your second partner is also a boy [girl] your age.

Disclosure information to be received by half of the participants:

He was born with autism, and his symptoms are obvious.

- Autism is a condition that affects the way people think and act.
- People born with autism may have trouble talking or interacting with other people. They may also have some unusual behaviors and interests.
- Some people with autism also have mental retardation and learn more slowly than most people. Other people with autism are very smart and can do well in school.

Vignette text continued:

You and your partner are introduced. He greets you with a robotic, "Hello. How are you today?"

You take turns asking and answering interviewing questions, but the conversation seems to take more effort than usual.

- Your partner seems to "space out" a lot.
- The way he talks and looks at you seems awkward, and his voice is a little too loud.
- Sometimes he takes a really long time to answer a question, and other times he talks on and on about things that seem off-topic. When you ask where he lives, your partner talks for a long time about bus routes in town.

The teacher tells the group that it's time to pick out some games.

- Your partner keeps talking about bus routes, and you have to repeat what the teacher said several times.
- Your partner knows how to play the game he finally picks, and he wants to play it first. When you try to play your game, he says no and begins to rock back and forth.
- During the game, it gets pretty loud in the classroom, and he puts his hands over his ears.

The teacher tells everyone it's time to go for the day. You say goodbye, and your partner says goodbye but doesn't look at you.

Next we will ask you questions about this partner.
Re-read the passage above if you want, then click Continue.

Week 3:

Your third partner is a boy [girl] your age.

Disclosure information to be received by half of the participants:

He was born with autism and mental retardation, and his symptoms are obvious.

- Autism is a condition that affects the way people think and act.
- People born with autism may have trouble talking or interacting with other people. They may also have some unusual behaviors and interests.
- Some people with autism also have mental retardation and learn more slowly than most people. Other people with autism are very smart and can do well in school.

Vignette text continued:

You and your partner are introduced. He doesn't greet you, but he shows a card that says, "Hello."

You *try* to take turns asking and answering the interview questions, but the conversation doesn't seem to work.

- Your partner wanders away, and the teacher brings him back to you.
- He doesn't look at you, and he makes noises, like grunts and whistles, more than he talks.
- When you ask a question, he repeats some of your words back to you, and he doesn't ask you any questions. When you ask where he lives, your partner begins to draw street signs, but he won't tell you about them.

The teacher tells the group that it's time to pick out some games.

- Your partner keeps drawing pictures of street signs, and you have to take his arm to bring him to the games.
- He picks a game, but he doesn't seem to understand how to play it. He doesn't really play with you. He only spins the pieces and stares at them.
- During the game, it gets pretty loud in the classroom, and he squeals and bites his arm.

The teacher tells everyone it's time to go for the day. You say goodbye, but your partner just walks away when it's time to leave.

Next we will ask you questions about this partner.
Re-read the passage above if you want, then click Continue.

Chedoke-McMaster Attitudes Towards Children with Handicaps (CATCH)
(Rosenbaum, Armstrong, & King, 1986; McDougall, 2004)

Questions used after each vignette:

Please answer these items to tell us how you would feel about this ____ (first, second, or last) partner.

1. I would be happy to have this person as my partner in the club.
2. I would feel good doing a school project with this partner.
3. I would be pleased if this partner invited me to his house.
4. I would invite this partner to my birthday party.
5. I would miss free time to keep this partner company.
6. I would enjoy being with this partner.
7. I would like this partner to hang out with me and my friends.
8. Overall, I would feel comfortable with this partner.

[Note: Questions 7 & 8 have been added to the original CATCH items]

Questions used to assess overall intentions and attitudes for self:

Regardless of how you answered about your first three partners, in general, how do you feel about interacting with students who have disabilities?

1. I would be happy to have a disabled student as my partner in a club.
2. I would feel good doing a school project with a disabled student.
3. I would be pleased if a disabled student invited me to his house.
4. I would invite a disabled student to my birthday party.
5. I would miss free time to keep a disabled student company.
6. I would enjoy being with a disabled student.
7. I would like a disabled student to hang out with me and my friends.
8. Overall, I would feel comfortable with a disabled student.

Responses:
(1) Strongly Disagree
(2) Disagree
(3) Neutral
(4) Agree
(5) Strongly Agree

Ranking Items

Here are the 3 peers you met.

- Your first partner
  - The conversation seemed pretty typical, and he played both games really well.
- Your second partner
  - The conversation seemed to take more effort than usual, and he only wanted to play his game and rocked back and forth.
- Your third partner
  - The conversation didn't seem to work, and he stared at the game pieces.

Imagine you get to pick your partner for the rest of the year. Who would you like to be your partner? Rank 1 = 1st choice, 2 = 2nd choice, 3 = 3rd choice.

First Partner _____
Second Partner _____
Third Partner _____

Who would you be most likely to be a friend with <u>outside</u> of school? Rank 1 = 1st choice, 2 = 2nd choice, 3 = 3rd choice.

First Partner _____
Second Partner _____
Third Partner _____

Who would you be most interested in tutoring or helping with their work? Rank 1 = 1st choice, 2 = 2nd choice, 3 = 3rd choice.

First Partner _____
Second Partner _____
Third Partner _____

Pretend that you are given 25 hours total to spend time with Sam, Drew or Jordan. You may split these 25 hours up between the three, but you must use up all 25 hours. How many hours would you give each of them?

First Partner _____
Second Partner _____
Third Partner _____

Now, pretend that you are given $25 to give to Sam, Drew, or Jordan. You cannot keep any of the money and you may split it up between the three. How much money would you give to each of them?

First Partner _____
Second Partner _____
Third Partner _____

Social Anxiety Scale (SAS)
(La Greca & Stone, 1993; McDougall, 2004)

Original La Greca & Stone

Please indicate how much you feel each of the following items is true for you. For example, if you often worry about doing something new in front of other kids, respond "most of the time."

1. I worry about doing something new in front of other kids.
2. I feel shy around kids I don't know
3. I only talk to kids I know really well
4. I get nervous when I talk to new kids
5. I feel nervous when I'm around certain kids
6. I get nervous when I talk to kids I don't know very well

Responses:
(1) Not at all
(2) Hardly ever
(3) Sometimes
(4) Most of the time
(5) All the time

Demographic Items

Please answer these questions about yourself. Typically, researchers will ask questions like these to allow them to describe the group of people in their study. You can skip these items.

Gender: Male, Female

Please type your age, in years (for example, 12).

What is your grade in school?: Sixth, Seventh, Eighth, Ninth, Tenth

What is your racial or ethnic background?

- White
- Black
- Hispanic
- Asian
- Native American
- Multi racial/Ethnic

Developmental Disabilities Background Items

About how often do you have contact with someone who has autism or a similar disorder?

- Not at all
- A few times a year
- Once a month
- Once a week
- Daily

About how well do you know or have known somebody with autism?

- I know or have known somebody with autism really well.
- I know or have known somebody with autism
- I have met somebody with autism, but don't really know them
- I don't know anyone with autism, but I have heard of autism
- I don't know anyone with autism, and I had not heard of autism before this study

About how well do you know somebody with mental retardation or another severe learning disability?

- I know or have known somebody with mental retardation really well.
- I know or have known somebody with mental retardation
- I have met somebody with mental retardation but don't really know them
- I don't know anyone with mental retardation, but I have heard of mental retardation
- I don't know anyone with mental retardation, and I had not heard of mental retardation before this study

Integrity Checks Text

Good job! You are almost finished! We know it can be hard to stay focused for a long period of time, but these are the last few questions.
Please answer these questions regarding the study in general.

1. How well could you understand the stories and questions in this study?
   a. I could not understand any of it well.
   b. I could understand some or most of it well.
   c. I could understand all of it well.

2. Do you think your answers are accurate?
   a. Yes, I really answered pretty carefully
   b. Maybe, I was a little careless answering some questions
   c. No, I didn't really try to read it or I was careless in answering

3. Did other students tell you anything about this study before you participated?
   a. No
   b. Yes

If yes, please tell us what you were told before the study:

_____
_____
_____
_____
_____

4. Please write any additional comments you would like here:

_____
_____
_____
_____
_____

Debriefing Screen Text

Thank you for participating in this study. We really appreciate your time and help with our research.

Please do not share information about what you read in the study with other students until the study is over. It's like not ruining the end of a movie. You may have seen it, but your friends might not have, so you keep it a secret. Although you have participated, other students may not have. Please help us keep it a mystery!

This study was about peer relationships. We were interested in your responses to children with differences. All participants read descriptions of three fictional children. The children in the stories had autism, which, as you learned, is a condition that affects the way people interact with other people. These fictional children varied in the types of difficulties they had, and some had more problems than others. These children were completely fictional, so if you know or have seen or heard of people similar to these children, it is a coincidence.

You also received information about a possible club starting in your school. Currently, there is no club forming, but we hope that this information has encouraged you to be open to the possibility.

Everyone reacts differently to hearing about people with disabilities. It is not uncommon for us to feel uncomfortable around people who are different, and there is no right or wrong way to feel. We appreciate that you shared your reactions with us. If this study brings up any concerns for you about how other kids are treated in school, we encourage you to talk to a parent, teacher, or other trusted adult about it. We hope that this information promotes respect for all of your peers and encourages you to reach out to other students.

If you have any questions about the study, feel free to ask the experimenter.

Remember, please don't tell other kids what you did in the study until it is over.

Thank you for your participation.

Protection of Participant Welfare Statement for Research Assistants
Peer Relationships Study

All participants in research have the right to the protection of their welfare. As an experimenter or research assistant, you are obligated to uphold this right. In the Peer Relationships Study, the following procedures will be followed to protect participants' welfare.

1. General Data Collection Procedures
    a. Experimenters will collect data in line with procedures set out in the IRB proposal *and* in light of school-specific requests and requirements.
    b. Experimenters will ensure that students are picked up from and returned to class/supervisors according to established procedures at the specific school.

2. Confidentiality
    a. Except as required by study procedures (e.g., getting a student from class), experimenters will *not* disclose to others whether or not a specific student is participating in the study
    b. During data collection, experimenters will take steps to ensure that others cannot easily see the respondent's computer screen (e.g., by spacing students, turning monitor, putting up cardboard dividers)
    c. During data collection, experimenters will seat themselves so that they are available but cannot observe responses.
    d. Experimenters will not take any steps to circumvent data collection procedures designed to protect anonymity (e.g., to find out an individual's responses based on unique demographic characteristics or inadvertent respondent disclosure of responses)
    e. Experimenters with access to the dataset will not share it with anyone other than the principal investigator or other members of the research team.

3. Informed Consent and Assent
    a. Experimenters will collect data *only* from youths for whom a signed parental Informed Consent is on file
    b. Experimenters will have the youth read the assent form prior to beginning data collection. Prior to signing, the experimenter will review the goals of the study, tell the student that s/he can skip items or withdraw from the study (and still receive the thank you gift), and ask for any questions or concerns the student might have. The experimenter will then obtain the signed assent before proceeding.

4. Right to Withdraw at any Time Without Prejudice
    a. Experimenters will recognize that participants have the right to withdraw from the study at any time without any negative consequences.
    b. If this occurs, participants will be thanked and given their thank you gift.

5. General Protection
    a. All experimenters will read the final IRB proposal for this study in full and ask the principal investigator for clarification as needed.

b. All research-related activities will be conducted in a respectful manner and in line with aspirational ethical principals such as doing good, avoiding harm, and respecting others' dignity.
c. Any questions or concerns about protecting client welfare, whether addressed above or not, will be brought to the attention of the principal investigator.

If there is ever a breach in confidentiality such that an experimenter is able to identify a specific respondent in the dataset, the experimenter will keep this knowledge to him or herself in order to preserve confidentiality among the other experimenters.

Please read and sign.

By signing below, I ascertain that I have read the IRB proposal for this study, including the full text of the informed consent and assent forms. I have also read the above statement and will uphold the welfare of the participants, including but not limited to maintaining confidentiality of the data. I will maintain a copy of this form and review it as needed.

_____ _____
Signature of research assistant Date

_____ _____
Signature of principal investigator Date