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# Effects Of Generic Versus Personally Delivered Education And Self-Disclosure On Elementary School Children's Social Attitudes Towards A Peer With Tourette Syndrome

Erin Lynn Olufs

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EFFECTS OF GENERIC VERSUS PERSONALLY DELIVERED EDUCATION AND  
SELF-DISCLOSURE ON ELEMENTARY SCHOOL CHILDREN'S SOCIAL  
ATTITUDES TOWARDS A PEER WITH TOURETTE SYNDROME

by

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Bachelor of Arts, College of St. Benedict, 2004  
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A Dissertation

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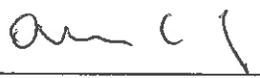
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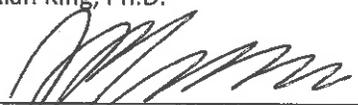
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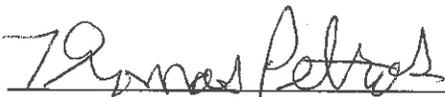
This dissertation, submitted by Erin Olufs in partial fulfillment of the requirements for the Degree of Doctor of Philosophy from the University of North Dakota, has been read by the Faculty Advisory Committee under whom the work has been done and is hereby approved.

  
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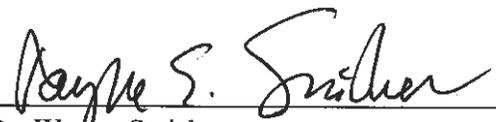
  
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## ABSTRACT

Children with tic disorders are at a higher risk for peer rejection and social withdrawn. Children who face peer rejection are at greater risk for internalizing, externalizing, and social problems, and often experience extreme loneliness and a lack of friendships. The impact of educational videos and self-disclosure have been examined in separate studies and have been shown to increase positive attitudes towards those with TS, but the two methods of education have not yet been directly compared to one another with a student population. In the current study, the differential effects of receiving professional TS education, self-disclosure TS education, and non-TS education was compared across measures of social acceptability and behavioral intentions. 243 school-aged children in grades four and five, enrolled in rural school districts in the upper Midwest, viewed a stimulus video of a same-aged peer either engaging in TS behavior or no TS behavior, followed by one of the education videos. Results suggested informing peers about themselves, regardless of type of self-disclosure, may increase social acceptance of children with TS compared to educational videos. The type of education did not increase positive behavioral intentions, though students may demonstrate increased positive intentions towards a new student with TS symptoms compared to a “typical” new student. Children with higher empathy may also be more socially accepting and welcoming to children with tic disorders. Implications of these findings and suggestions for future research are discussed.

## CHAPTER I

### INTRODUCTION

#### Definitions and Diagnoses of Chronic Tic Disorders

##### *Definitions and Diagnoses*

According to the DSM-IV-TR, “a tic is a sudden, rapid, recurrent, nonrhythmic, stereotyped motor movement or vocalization” (American Psychiatric Association [APA], 2000, p. 108). There are two main categories of tics: motor tics and vocal tics. Motor tics involve the contraction of muscles which result in visible movement, while vocal tics involve the vocal muscles and result in sound made by the individual (APA, 2000). Motor and vocal tics may be simple and involve only one or two muscles meaninglessly contracting, like an eye blink or simple sounds. Tics can also be complex and involve multiple muscles and chains of behaviors, such as hand gestures, twirling while walking, or strings of words or sentences (Leckman, Bloch, King, & Scahill, 2001).

Tics are generally experienced as irresistible, but at times they can be suppressed for varying lengths of time. While some individuals are not aware of their tics, eventually most individuals with a Chronic Tic Disorder (CTD) will experience a premonitory urge, a rising sensation or tension in a part of their body that precedes a motor or vocal tic. An individual may experience a tic as somewhere between “voluntary” and “involuntary”, as they are able to suppress the tic for a period of time before they give in to the mounting tension and irresistible need to perform the tic. After the individual engages in the tic

behavior, they experience a sense of relief or tension reduction. Tics often occur in bouts of one or more tics, followed by a period of non-tic behavior. The severity of the tics often changes over the course of the day and across situations and activities. For example, children may be able to suppress their tics to some degree at school but fully engage in the behavior at home. Tics also may increase when the individual is experiencing stress (APA, 2000).

There are four tic diagnoses collectively referred to Chronic Tic Disorders (CTDs) an individual can receive: Transient Tic Disorder, Chronic Motor Tic, Chronic Vocal Tic, and Tourette's Syndrome. All four diagnoses require the tics to have an onset before age 18 years, the ruling out of the physiological effects of substances or a general medical condition, and that the tics cause significant impairment in social, occupational, or other important areas of functioning. The tic disorder diagnosis an individual receives depends on the type of tics and the length of time the tics have been present. The diagnosis of a Transient Tic Disorder requires that an individual shows one or more tics multiple times throughout the day nearly every day over at least a four week period, but for no longer than twelve straight months. Similar to those diagnosed with a Transient Tic Disorder, those receiving a diagnosis of Chronic Motor or Chronic Vocal Tic Disorders must experience vocal or motor tics multiple times throughout the day, nearly every day. However, they must experience these tics throughout a period of more than one year, and during this time there must not be a tic-free period for more than three consecutive months. Individuals diagnosed with one of these disorders must not have also met the criteria for Tourette's Syndrome (APA, 2000).

Tourette's Syndrome (TS) is a tic disorder in which individuals experience multiple motor tics and at least one vocal tic almost daily for at least one year (APA, 2000). Community prevalence rates of TS range from .0.3% to 0.7%, and the prevalence rate of CTDs has been found to range from 0.5% to 1.1% (Scharf, Miller, Mathews, & Ben-Shlomo, 2012). This may be an underestimate of the prevalence rate of TS, as a large number of those with TS do not seek out treatment for their disorder (Piacentini, Pearlman, & Peris, 2007). The median age of onset for motor tics is about 6 or 7 years; in about one-half of individuals with TS symptoms first appear as a single simple motor tic, commonly an eye-blink or facial tic. While TS is thought to be a lifelong disorder in most individuals, some individuals experience a reduction in symptoms as they age, with symptoms disappearing entirely by early adulthood (APA, 2000). The disorder is diagnosed more frequently in males than females (Zohar et al., 1999). There appears to be a genetic component to TS and it frequently occurs within families. It appears that children may receive a genetic basis for the disorder, inheriting a "vulnerability" for TS. However, not every child who inherits the genetic vulnerability will develop a CTD. Likewise, some individuals diagnosed with TS have no family history of CTDs (APA, 2000).

### *Comorbid Disorders*

CTDs occur on a spectrum of impairment. On one end of the spectrum, some individuals show little impairment or distress with their tics and never seek out medical assistance. On the other end, some individuals experience a significant amount of distress and impairment, as their motor and vocal tics are intrusive and socially stigmatizing. Tics can directly interfere with individuals' daily living experiences, such as reading, writing,

and holding conversations with others. In extreme cases, tics can even cause extreme injury. Therefore, individuals' social, academic, and occupational functioning may be highly impaired due to their tics (APA, 2000).

Beyond the impact TS has on their social, academic, and daily living functioning and experiences, many children and adolescents are further impaired the comorbid psychiatric disorders that often co-occur with TS. Over half of all youth with TS show evidence of comorbid disorders, such as Attention-Deficit/Hyperactivity Disorder (ADHD), Obsessive-Compulsive Disorder (OCD), and mood disorders (Gaze, Kepley, & Walkup, 2006). In one controlled study, approximately 75% of children and adolescents diagnosed with TS had a dual diagnosis with another psychiatric disorder. In addition, compared to a matched-sample of children and adolescents without TS those with TS had significantly higher prevalence rates of psychiatric and behavioral disorders (Termine et al., 2006). Children diagnosed with a CTD demonstrate increased likelihood of functional impairment, social avoidance, discrimination, and lower quality of life when they are also diagnosed with a comorbid psychiatric condition (Conelea, 2011). Even if the child's tics reduce in frequency and severity as the child reaches older adolescence, he or she still continue to experience psychosocial impairment and higher lifetime prevalence rates of psychiatric disorders (Gorman et al., 2010). Adults with CTDs report experiencing mild to moderate impairment across several areas, and tic severity was found to be associated with greater impairment. In addition, a large portion of adults with CTDs report avoiding social situations due to their tics and experience discrimination in some form (Conelea et al., 2013).

In addition to the difficulties caused by comorbid psychiatric disorders, individuals with CTDs often experience problems due to comorbid behavioral problems that often co-occur with CTDs. Children with a CTD are more likely to demonstrate hyperactive, disruptive, and defiant behaviors, and they are more likely to have emotional concerns compared to typically developing peers (Tabori Kraft et al., 2012). Zhu, Leung, Liu, Zhou, and Su (2005) examined the relationship between behavioral problems and the severity of TS symptoms. Overall, children with TS scored significantly higher on all the Child Behavior Checklist (CBCL) behavioral problem subscales than typically developing children. The severity of the children's tics was positively correlated with their behavior problems. Children with severe tics had more externalizing negative behaviors than children with less severe tics, suggesting that impulsive behaviors may be related to tic severity. The results suggest that children with TS have a broad range of behavioral problems.

Due to their tics, children with TS often experience barriers to learning and receiving an appropriate education. Direct effects of TS on education performance are present in tasks that require motor coordination, such as handwriting, and public speaking. Fine motor tasks may be difficult for students with TS. Youth with TS may write at a slower rate than their peers, causing gaps in their note taking, miss details in assignments, and difficulty finishing tests within a time limit. Stress may exacerbate tics, so youth with TS may avoid participating in class discussions or other anxiety-provoking class tasks. These difficulties with written and oral expression may keep youth with TS from being able to demonstrate the full extent of what they have learned in class. In addition, side effects from medication used to control TS symptoms may affect learning

(Hagin & Kugler, 1988). Parents often recognize the difficulties their children with TS face while in school. When parents of children with TS were surveyed, half of the respondents felt their child's tics had caused a moderate to significant impact of academic performance, while an additional 24% reported a mild impact. Parents felt that their children had a significant improvement in their academic functioning when they had a significant improvement in their tic symptoms (Parker, 2005).

The barriers children experience with their TS may continue to impede success in the workplace. An individual's tics may affect an employer's decisions and negatively impact a person's livelihood and earning potential. Shady et al. (1995) gathered employment information from 193 adults with TS. Almost one-half of the respondents reported that having TS had influenced their career choice to some degree. Discrimination in the workplace was a significant concern for many respondents: 20% reported they had been fired or dismissed, 16% reported they had not been hired for a job, and 11% felt they had been passed over for promotions due to their TS. The most important predictor of job satisfaction was fewer childhood problems and lower levels of symptoms related to ADHD symptoms. Higher status jobs were related to lower levels of TS-related learning difficulties. The type of work chosen by individuals was related to problems in school, severity of ADHD symptoms, and severity of sleep problems.

### *Treatment*

TS has been shown to be a neurological etiology and is a neurobiological disorder (Singer & Minzer, 2003). Largely due to this neurobiological conceptualization, pharmacotherapy is the intervention for TS most often recommended by professionals (Carpenter, Leckman, Scahill, & McDougle, 1999). Wand, Fulton, Shady, Champion,

and Hubka (1988) found that many individuals with TS reported using some type of medication or psychiatric care to help manage their symptoms. The majority (59%) of individuals surveyed reported their primary provider for the treatment of their disorder was a physician, supporting the notion that TS is viewed as having a biological etiology rather than a psychological etiology. While drug treatments are popular in the treatment of TS, they are not often used for mild chronic vocal or motor tics. Instead, pharmacotherapy is typically reserved for individuals with moderate to severe tic symptoms (Peterson, Campise, & Azrin, 1994).

While pharmacological treatments have been shown to reduce tics by 50 to 60%, they often result in undesirable side effects. This results in many patients discontinuing drug treatment for their symptoms (Peterson et al., 1994). Therefore, behavioral interventions, particularly habit reversal training (HRT) have been examined as an alternative to pharmacological treatment of TS for individuals who are either unable or unwilling to take medications as a treatment for their disorder. It has also been used as an adjunctive treatment that is used in combination with pharmacotherapy. Studies have supported the use of behavior therapy to decrease TS symptoms, as behavioral approaches have been shown to result in a 31% reduction in tic severity in TS (Piacentini et al., 2010). Recently, a psychosocial treatment for CTDs was established which focused on helping children with CTDs cope with their disorder and decrease functional impairment and distress through promoting coping skills and resiliency (Storch et al., 2012). The study found that participants exhibited reductions in tic related impairment and anxiety.

In addition to pharmacological and behavior therapies for TS, there is also a need to address the educational concerns children with TS have in a school setting. While behavioral and pharmacological treatments for TS are highly valuable, providers can also play a supportive role in helping adapt the classroom environment to best help the child. Providers working in a school setting are able to take on the role of assisting with implementing accommodations for the child with TS. Before the school year, the provider can encourage that the child be placed with a sympathetic teacher, as the child's behavior may try some teacher's patience. The provider can support the teacher with the child in the classroom and help them identify special needs and accommodations the child may need. In addition, providers and teachers can educate children in the classroom, teachers, and support staff about TS and the difficulties the child may have due to the disorder. Teachers can also assist the child with TS by being aware of potential stressors to the child, which may exacerbate their tic symptoms, and work to reduce the stress of the events. (Dedmon, 1986).

### Consequences of Social Impairment in TS

#### *Social Impairment as a Consequence of TS*

A diagnostic criterion that is listed for all Tic Disorders is that that the disorder must cause significant distress and impairment (APA, 2000). This often takes the form of significant social impairment in children and adults diagnosed with TS. Both children with CTDs and their parents report that the children's tics mildly to moderately interfered with their social functioning, and there was a positive association between tic severity and social impairment (Conelea et al., 2011). Children with TS are at risk for having poor social relationships and often have poorer peer relations than their classmates (Stokes,

Bawden, Camfield, Backman, & Dooley, 1991; Bawden, Stokes, Camfield, Camfield, & Salisbury, 1998), and social deficits play an influential role in the social problems and reduced quality of life children with TS experience (McGuire, Hanks, Lewin, Storch, & Murphy, 2013). Children with TS score significantly lower on the CBCL social competency scale, and tic severity is negatively correlated with this measure of social competence (Zhu et al., 2005). Children with CTDs have increased social deficits, and 19% report severe social deficits (McGuire et al., 2013). Socialization skills as measured by the Vineland Adaptive Behavior Scales have been shown to be a significant weakness in adaptive functioning in children with TS (Dykens et al., 1984). Children diagnosed with TS alone exhibit more internalizing symptoms than children in a control sample, while children with a dual diagnosis of TS and ADHD exhibit more externalizing and internalizing behaviors, as well as poorer social adaptations, than children without either diagnosis (Carter et al., 2000). Children with TS who have a comorbid externalizing behavior problems are at risk for peer relationship problems due to their aggressive behavior, while those diagnosed with TS alone are at risk for social withdrawal (Bawden et al., 1998). Social deficits children with CTDs experience have been found to be more strongly associated with inattention, hyperactivity, and oppositional behaviors than to tic severity (McGuire et al., 2013). This suggests that many of the social and externalizing behavioral difficulties children with TS experience is related to their ADHD symptoms, though children diagnosed with TS alone face different difficulties, such as social withdrawal, and therefore may have a different socio-emotional profile.

Children with TS often have a number of social difficulties, particularly in the school setting. Peers may make fun of a child's tics or ostracize the child for behaviors

and movements beyond the child's control (Bawden et al., 1998). Teachers may find the tics distracting and may punish the student for behaviors they cannot control. Some children are able to cope with these pressures by suppressing their tics in the classroom and releasing them in the hallway or the playground. Other students, however, are not able to control their tics for long periods of time and may struggle in their relationships with peers and teachers (Dedmon, 1990). These experiences can make school a difficult environment for students diagnosed with TS. Shady, Fulton, and Champion (1988) examined educational problems in individuals with TS. When looking back on their past educational experiences, the majority of respondents (68%) reported they often had a difficult time getting along with other students. While 88% reported their school had been informed of their TS diagnosis, 70% still viewed their school personnel as being unknowledgeable about their disorder. Half of respondents felt their school could have done more to improve their educational experience, with 59% of those feeling that educating teachers would have been the most important source of improvement. The study also found that the educational experience of individuals with TS whose teachers were knowledgeable of their disorder were more favorable than those whose teachers were uninformed.

Parents of children with TS also report that their children have experienced social difficulties due to their CTD. In one study, a majority of parents reported that their child with a CTD had been treated differently by others, and had faced discrimination (Conelea et al., 2011). Packer (2005) conducted a survey to examine tic-related school problems and the impact that tics had on children's functioning, accommodations, and interventions. Half of parents surveyed reported that their child's tics had a moderate to

significant impact on their peer relationships, with an additional third reporting a mild impact on their peer relationships. While almost half of the parents reported their children faced peer rejection in school, only 13% had schools who provided a peer education program. Of those nine cases where there was a peer education, only three parents felt the program was effective in reducing the peer teasing and rejection their children faced, while five reported it was somewhat helpful.

Children with tics report clinically significant peer victimization at higher rates than peers. Storch et al. (2007) examined the relationship between tic severity, internalizing symptoms, and peer victimization in youth with CTDs. Children with a CTD were compared to youth with Type 1 Diabetes and healthy controls on a variety of measures assessing symptoms and peer victimization. Over one-fourth of children with a CTD reported clinically significant peer victimization, compared to 9% of children with diabetes or no condition. In addition, there were modest positive correlations between peer victimization and tic severity, loneliness, anxiety symptoms, internalizing symptoms, and the level of impairment associated with tics. The results suggest that tic symptoms severity is directly related to peer victimization, as the more severe the tics, the more peer rejection the children with CTDs experienced. As the peer rejection increases for these children, their feelings of loneliness, anxiety symptoms, and other internalizing symptoms may increase. It appears that tic severity is related to peer victimization, which in turn is related to feelings of loneliness and internalizing disorders in children with CTDs.

### *Theories of Social Acceptance*

It is widely accepted that children learn many of their social skills from interacting with and having relationships with peers. Children tend to fall into one of four social groups: popular children, who are viewed by peers in prosocial terms and are liked by many children; rejected children, who are rated as least liked by peers and are described as disruptive and having opposite traits of the popular children; controversial children, who are both well-liked and disliked by many children and are often perceived as disruptive and leaders in the peer group; and neglected children, who are neither disliked or well-liked by many children and are often the “invisible” children in the classroom (Coie, Dodge, & Coppotelli, 1982). Children who are rejected by their peers often do not have the opportunities to develop social competency skills. While a child’s behaviors, such as aggression, may be the original reason for social rejection, it is the response of the child’s peers as a group that determines if the child is ultimately rejected. Once a child is rejected by the group, group dynamics will maintain the rejection of the child. Children often describe the rejected child’s negative behaviors as stable characteristics, while in non-rejected children the same negative behaviors are described as more temporary and situation-based. When a peer has negative expectations of a rejected child, he or she will often act more negatively towards the child; this results in the rejected child acting in a more negative way towards the peer, leading to the peer’s negative perceptions of the child to be reinforced. In this way, a self-fulfilling prophecy is fulfilled (Coie & Cillessen, 1993). A child's social status in preschool, either popular, rejected, or accepted, was found to show moderate to high rates of stability after a 6-month period, suggesting that social status remains consistent over time (Walker, 2009).

Rejection in childhood can lead to social impairment and has both immediate and long-term negative consequences.

### *Outcomes of Social Acceptance*

#### *Immediate effects*

Social acceptance can have immediate consequences for the adjustment of a child. Positive peer relations play an important role in developing appropriate socioemotional development in children (Bierman, 1987). Peer rejection is a predictor of externalizing problems during childhood is a predictor of externalizing problems during early childhood (Ladd, 2006). Children who are rejected by their peers describe themselves as lonelier than any other status groups (neglected, controversial, or popular), with 23% of rejected children reporting extreme feelings of loneliness and social dissatisfaction (Asher & Wheeler, 1985). In addition to increased feelings of loneliness, rejected children often have conduct problems across situations and face continued rejection from peers. Neglected children, while not actively disliked by peers, have few friends and show signs of social withdrawal (Bierman, 1987). Lack of positive social interactions can also result in negative socioemotional behaviors such as solitary, off-task behavior (Coe & Kupersmidt, 1983) and hyperactivity and aggression (Denham & Holt, 1993). In addition, children with higher achievement scores tend to perform better on social competence measures. Children with high academic scores are generally well liked and have positive interactions with peers (Green, Forehand, Beck, & Vosk, 1980). This suggests that social competence and academic achievement may be intricately related, though a causal relationship cannot be inferred. Therefore, it may be that a child who is rejected by peers may suffer academically at school.

Adolescents are also highly impacted by whether or not they are socially accepted by their peers. Adolescents who are chronically victimized by peers are more socially maladjusted than those who are not victimized. This peer victimization is positively associated with the social problems an adolescent faces. Adolescents who are rejected by their peers tend to have more internalizing symptoms, externalizing symptoms, and social problems. Teacher ratings also support this finding, as they rate adolescents who have fewer friends as having more internalizing and social problems. Friendship quality was shown to be a protective factor for adolescents, as having just one quality friend who offers support, protection, and intimacy increased the chance the adolescent will be better adjusted. Adolescents who are accepted by peers, have many friends, and have quality friendships are rated as better adjusted by their teachers, and the quality of the friendships is the most important factor (Waldrip, Malcolm, & Jensen-Campbell, 2008). Social acceptance is important to the adjustment of both children and adolescents.

#### *Long-term effects*

Children who are rejected by their peers are at an increased risk for poor socioemotional development and later maladjustment (Bierman, 1987). Early peer rejection can follow the child through their school years, even if the child's behavior changes. Johnson, Ironsmith, Snow, & Poteat (2000) examined the impact of peer acceptance of children in preschool and kindergarten. They found that preschool children who were aggressive had a greater chance of being rejected by their peers than other children. This first impression that peers formed of the rejected child continued, even if the child no longer engaged in aggressive behaviors. Children who were accepted in preschool and had friends entering kindergarten with them were better adjusted to school

in general. Therefore, it is important to prevent the negative perceptions peers have of a rejected child early and instead promote peer acceptance of all children, as acceptance leads to improved school adjustment.

Peer acceptance in pre-adolescence can be a predictive factor of externalizing problems in adolescence. Rejected and aggressive children are at substantial risk for later externalizing (Kupersmidt & Coie, 1990) and internalizing problems (Coie, Terry, Lenox, & Lochman, 1995). Peer rejection is a determining factor in the prediction of multiple problems in adolescence, including increased interactions with police and increased risk of dropping out of school (Kupersmidt & Coie, 1990). Aggression was also a significant in predicting negative outcomes in later adolescence. A meta-analysis of the research conducted by Parker and Asher (1987) supported these findings. They found that children with poorer peer relationships were at risk for later life difficulties, particularly for dropping out of school and future criminality. In addition, there was support for low acceptance and aggressiveness as being the strongest predictors of future negative outcomes. It suggests that if children with TS face rejection from their peers, they may be at an increased risk for getting into trouble with the law and dropping out of school. This negative impact can follow an individual into adulthood, as it has been shown that boys who experience social impairment as a youth may be more likely to be fired from employment, get into more trouble with law enforcement, have more psychiatric hospitalizations when they are adults (James, Hesselbrock, Myers, & Penniman, 1979).

Peer rejection or acceptance in childhood and adolescence can have a lifelong impact on an individual's self-esteem, which has broad implications for an individual's life. Sociometer theory proposes that self-esteem is a measure of an individual's past,

present and future perceived relational value. People with high self-esteem (HSEs) feel they are, always have been, and always will be accepted by others. People with low self-esteem (LSEs) doubt their value to others and will project their doubts onto future relationships (Leary et al., 1995; Murray, Holmes, & Griffin, 2000). Anthony, Holmes, and Wood (2007) posit that sociometer theory implies that self-esteem is responsive to one's social experiences. Therefore, specific times when an individual has been accepted or rejected causes changes in one's self-esteem, and over time these instances of social rejection or acceptance cause one to have high self-esteem or low self-esteem.

Accordingly, the level of self-esteem an individual has will impact their future beliefs and social motivations. Individuals with HSE will have more confidence that they are valued and possess valued traits, while individuals with LSE doubt their social worth and rate themselves as possessing fewer valuable traits. Anthony et. al. (2007) suggest that an individual's level of self-esteem impacts their social decision-making. Individuals with HSE were eager to join a social group, whether or not acceptance was guaranteed, while individuals with LSE were only ready to join the group when social acceptance was guaranteed. This suggests that peer acceptance or rejection has an impact on whether the individual will have high self-esteem or low self-esteem, and their self-esteem will then impact their future interactions with peer groups. There appears to be a moderate relationship between social acceptance and self-concept for children with disabilities (Pijl & Frostad, 2010), suggesting that this process can begin at a young age and peer rejection may result in children with disabilities having low self-esteem.

## Variables that Affect Attitudes and Social Acceptance

### *Child Characteristics (Social Groups)*

The traits and behaviors that children exhibit can influence other's attitudes towards them; certain traits and behaviors increase social acceptability, while others decrease acceptability. Based on the attitudes children form of their peers and the peer's subsequent level of social acceptability, children are categorized into one of four groups: popular children, rejected children, controversial children, and neglected children (Coie et al., 1982). These social groupings appear to be consistent over time (Walker, 2009; Denham & Holt, 1993; Coie & Kupersmidt, 1983). Denham and Holt (1993) found that for preschoolers, the perceived peer's social acceptability was largely determined by their prosocial behaviors. By the second year, the perceived child's reputation and previous social status determined their social acceptability. In addition, social groupings appear to be stable across settings and peer groups. When boys of different social statuses were placed in new groups with unknown peers from different schools, the social status of the boys in the groups was highly correlated to their social status in their own schools after only three interactions (Coie & Kupersmidt, 1983). This suggests that the behaviors and traits of children that determine their social status in one group will result in the same social status being assigned in a new, unknown group.

Research has found that children who are categorized as popular or accepted share certain characteristics with each other. Children who are rated as liked by peers tend to be labeled by peers in prosocial terms, such as cooperative, calm, and supportive of peers. Social preference was also highly correlated with physical attractiveness (Coie et al., 1982).

Children who are labeled as rejected also share certain characteristics that set them apart from their accepted peers. Rejected children tend to be described as being disruptive, aggressive, and getting into trouble (Coie et al., 1982), as well as being more inattentive and less prosocial than accepted or neglected children (Cantrell & Prinz, 1985). Rejected children tend to engage in more aggressive and task-inappropriate behaviors, such as clowning around, daydreaming, and wandering (Dodge, Coie, & Brakke, 1982). While rejected children approach peers in prosocial way as often as popular children, they are met with negative responses (Dodge, et al., 1982), and rejected children may be unaware of how their behaviors are affecting their peers (Cantrell & Prinz, 1985). When joining a social group, rejected children have been found to use more disruptive entry strategies, such as interrupting and crowing others, compared to popular children (Wilson, 2006).

Neglected children are often described as the low visibility group. They tend to be not be rated as either strongly liked or strongly disliked by peers, and while they are not perceived as being either disruptive or starting fights, neither are they viewed as being shy or cooperative (1982). The research remains more unclear on neglected children than on rejected or accepted children. Some studies have demonstrated that neglected children are indistinguishable from their accepted peers. While their peers may view them as less helpful, nice, or comprehending than their peers, they were not characterized by their teachers as being more socially withdrawn, anxious, unpopular, or inattentive compared to same aged-peers. In addition, they were indiscernible from their accepted peers during a role-play task on level of assertiveness (Cantrell & Prinz, 1985). Neglected children

were also found to not describe themselves as shy or unhappy, and did not report distress or dissatisfaction with their peer group (Cantrell & Prinz, 1985).

Controversial children are the fourth social group identified in social acceptance literature. While controversial children are often rated by many of their peers as being least-liked, they are also rated by many of their peers as being most-liked. They tend to be perceived as disruptive and starting fights, but they are also seen as being leaders of their peer group (Coie et al., 1982).

### *Perceived Disability*

Children tend to prefer peers without disabilities to those with physical or intellectual disabilities, and their attitudes towards peers with disabilities tend to be negative (Nowicki & Sandieson, 2002). However, the research is not consistent, as some evidence points to children actually showing a high degree of acceptance of peers with a physical disability (Morgan & Wisely, 1996). Children have been found to view disability-based classroom exclusion as being wrong and identified themselves as feeling sorry if a peer with a disability was treated unfairly (Gasser, Malti, & Buholzer, 2013). There are several factors that influence a child's acceptance of a peer with a disability: age of the perceiver, gender, type of disability, and friendship attributes.

#### *Age*

Young children tend to demonstrate negative attitudes towards friendships with peers with disabilities, though these attitudes become more positive over time (Weiserbs & Gottlieb, 1995). In addition, younger children tend to hold more negative attitudes and less social acceptance towards children with intellectual disabilities and mental health disorders than older children (Nowicki, 2006; Swords, Heary, & Hennessy, 2011). Ryan

(1981) reviewed children and adults' attitudes towards individuals' with physical disabilities. Based on her review, she concluded that social acceptability attitudes towards children with disabilities increase in favorability from early childhood to adolescence, then decrease in late adolescents, and increase again in young adulthood.

These negative attitudes found in young children may be due to their developmental stage in life. Kindergarteners tend to conceptualize disabilities according to physical appearance. Children at this stage of cognitive development tend to focus on physical features and how children with disabilities differ physically in appearance from themselves (Dyson, 2005). As physical attractiveness has consistently been found to influence the social acceptability of an individual, this may be the reason that younger children have more negative views of peers with disabilities. As young children's attitudes appear to be largely influenced by the physical appearance of a perceived peer, they may not socially accept a peer with a disability based solely on their appearance (Dion, 1977; Ryan, 1987). As the child ages, friendships can mean more support and affection, thereby allowing for more positive attitudes towards a peer with a disability. When they reach adolescence, however, peer groups become most important and can influence behaviors (Furman & Bierman, 1983; O'Brien & Bierman, 1988). This focus on the perceptions of others may lead to more negative attitudes towards friendship as the adolescent ages (Weiserbs & Gottlieb, 1995).

### *Gender*

Evidence suggests that girls tend to be more accepting of peers with disabilities than are boys (Nowicki & Sandieson, 2002; Rosenbaum, Armstrong, & King, 1988; Swords et al., 2011). However, female children tend to rate male peers with disabilities

more negatively than do male children (Nowicki & Sandieson, 2002; Bickett & Milich, 1990). It has been suggested that female children may be more accepting of children with disabilities due to their differing moral priorities compared to males, as male children tend to be more interested in rights and justice while female children tend to be more concerned with relationships and caring (Gilligan, 1982). In addition, nondisabled boys may show less favorable attitudes towards boys with disabilities because boys are more likely to be physically active and base friendships based on physical activities; therefore, they may be less interested in developing a relationship with a boy with a disability who may not be able to engage in active play (Rosenbaum et al., 1988).

#### *Type of disability*

Children tend to have less favorable stereotypic views of children with cognitive disabilities than children with physical disabilities and tend to show more positive behavioral intentions and sympathy towards children with physical disabilities (Gottlieb & Gottlieb, 1977; Gasser et al., 2013). In addition, the perceived duration of and responsibility for a child's disability can impact other's attitudes towards them. Children with temporary disabilities are viewed more favorably than children with permanent disabilities (Weiserbs & Gottlieb, 2000) and those viewed as being less responsible for their disability are more accepted by peers (Swords et al. 2011), which may also help explain why children may be more accepting of physical disabilities than intellectual disabilities, as certain physical disabilities may be viewed as more temporary.

#### *Friendship attributes*

Research suggests that children may be willing to interact and form friendships with peers with disabilities when these friendship behaviors are viewed as being

relatively easy to perform. However, when the friendship behaviors are viewed as being difficult or requiring a large amount of effort, children express fewer prosocial intentions towards the peer with the disability, even when they express positive attitudes towards the peer with the disability (Roberts & Smith, 1999). Although children show more positive behavioral intentions towards children with physical disabilities than children with cognitive disabilities, they do not show a difference in how often they would select to be friends with an individual with a cognitive or physical disability (Gottlieb & Gottlieb, 1977). In one study, it was found that while kindergarten children hold generally positive attitudes towards peers with disabilities, only half of the nondisabled children reported having a friend with a disability (Dyson, 2005). It may be that typically-developing children have not have adequate social exposure to peers with disabilities, as social participation during free time in a classroom was shown to have a direct effect on social acceptance and peer intimacy with children with disabilities (Wendelborg & Kvello, 2010).

Children may be more willing to help a peer with a physical disability than they are to develop a friendship with that peer. Weiserbs & Gottlieb (1995) found that children's attitudes toward friendship with a peer with a physical disability were consistently more negative than their attitudes towards helping a peer with a physical disability. However, this reversed over time, with attitudes towards friendships became more positive and helping attitudes became more negative. This may be because friendship is a complex, broad relationship that cross many areas of life, while helping behaviors are relatively discrete. While friendship may include helping behaviors, helping behaviors does not require a friendship. There may also be more social

consequences for a child when befriending a peer with a physical disability, while helping a peer with a disability is an accepted, positive social norm. Weiserbs & Gottlieb's (1995) study supports this, as they found that children considered the perceptions of others when responding about friendship attitudes but not when responding about helping attitudes.

### *Tic and Habit Behaviors*

Habit disorders involve repetitive behaviors that do not serve a recognizable purpose and may have negative social consequences for an individual who exhibits them; they include CTDs and Trichotillomania (Woods & Miltenberger, 1996). Social acceptance literature has consistently shown that children and adults with a habit are viewed as less socially acceptable than peers without a habit disorder. This lack of social acceptance appears to be related to the tic behaviors themselves, not the impact of having a chronic medical condition (Bawden et al., 1998).

Friedrich, Morgan, & Devine (1996) found that children rate a child demonstrating TS symptoms as being less favorable than when the same child does not demonstrate tics. Being provided with information about TS and the child did not improve the children's rating of the child with TS symptoms. The children also perceived their classmates as being less accepting of the child exhibiting TS than they themselves where, suggesting the children may have been minimizing their actual social rejection of the child with TS symptoms.

Similar results were found for junior high youth (Boudjouk, Woods, Miltenberger, & Long, 2000). Adolescents viewed two video segments of same-aged actors portraying one of two habit conditions (motor tics or trichotillomania) or no habit

condition while engaging in a conversation. Results showed that the adolescents who viewed the peer not engaging in a habit behavior rated that peer as being more socially acceptable than the peers engaging in either habit disorder. The impact of habit behaviors on social acceptance are also found in adults and may impact an individual's employment. Long, Woods, Miltenberger, Fuqua, and Boudjouk (1999) examined college student's perceptions of the habit behaviors of an individual with a cognitive disorder. Participants viewed either a male or female exhibit one of four habit behaviors (motor tic, vocal tic, trichotillomania, or fingernail biting) or no habit behavior. Individuals who engaged in a habit disorder were less likely to be hired for the job than those who did not engage in a habit disorder.

The tic or habit behavior alone does not impact the social acceptability of an individual; the topography and frequency of the habit behavior also impacts the social acceptability of the perceived. Woods, Fuqua, and Outman (1998) examined the impact of the frequency and severity of habit behaviors on social acceptance. Each of the habit behaviors examined (motor tic, vocal tic, TS, or trichotillomania) were portrayed in combinations of low versus high frequency and mild versus severe severity. Results showed that males and females exhibiting low frequency and mild severity habit behaviors were rated as more socially acceptable than those exhibiting high frequency or severe severity habit behaviors. In addition, motor tics were viewed as more acceptable than vocal tics, TS, or trichotillomania. Increased tic severity and degree of impairment related to tic behaviors has been associated with higher rates of peer victimization and social impairment in children (Storch et al., 2007; Conelea et al., 2011).

The gender of the perceiver and the perceived individual with the CTD has shown mixed results in the impact of CTDs. Significant gender interactions have been found in the literature on the social acceptability of those with habit disorders, but the findings are not consistent across studies. In one study, males with motor tics were not rated as less acceptable than the control males while the females with motor tics were viewed as less socially acceptable than the control females (Boudjouk et al., 2000). These results suggest that females who display motor tics may be more at risk for social rejection from peers than male counterparts. Other studies, however, have found that males who exhibited a habit behavior are viewed as less socially acceptable than males who did not exhibit tics; this result was not found for females (Long et al., 1999; Woods et al., 1999). In addition, it has been shown that the gender of the perceiver may have an impact on the social acceptability of an individual with a habit disorder, with females being more willing to socially engage another female with a habit disorder than a male with a habit disorder (Woods et al., 1999). Therefore, the impact of the gender of both the perceiver and the individual with tic behaviors on social acceptability needs to be examined further.

#### The Role of Empathy in Acceptance

Empathy has been defined as “an affective response that stems from the apprehension or comprehension of another’s emotional state or condition” (Eisenberg & Fabes, 1988, p. 702). Empathy has been described as having two components: a cognitive ability that allows for the understanding of the emotions of another person (Hogan, 1969) and as an affective trait that allows for the experiencing of the emotions of others (Mehrabian & Epstein, 1972). Therefore, empathy includes recognizing the emotions of others, understanding those emotions, and experiencing those emotions personally. Social

understanding is related to empathy and involves making inferences about others' emotions, thoughts, and intentions (Porath, 2003). Social understanding is important in peer relationships, as children's understanding and interpretation of their peer's behaviors significantly contributes towards their own reactions and behaviors towards different types of peers (Graham & Hoehn, 1995). A child's ability to empathize with others can impacts their understanding of and behavior towards their peers, and is therefore important to consider in understanding the social acceptance of children.

It is well-established that children with higher levels of empathy demonstrate more prosocial tendencies towards peers (Miller & Jansen op de Haar, 1997). Prosocial behavior is related to empathy, as it is dependent on understanding others, emotion regulation, and social initiative (Miller, Eisenberg, Fabes & Shell, 1996). It is thought that those with higher empathy respond with prosocial behaviors to help alleviate the negative emotions in others, either for selfish reasons (to decrease personal distress) or for altruistic reasons (to decrease other's emotional distress). Therefore, those with high empathy engage in prosocial behaviors to benefit others, as the positive emotions experienced by the beneficiary of those prosocial behaviors would also be experienced or understood by the highly empathetic person (Batson, Fultz, & Schoenrade, 1987). It has been shown that children higher in empathy tend to show a greater understanding of peers' behaviors compared to less empathetic peers, as empathetic children rated the behaviors of shy peers as less intentional and showed more empathy for these peers than for prosocial peers (Findlay, Girardi, & Coplan, 2006). This suggests that empathetic children are more socially sensitive in terms of their own prosocial behaviors and their understanding of the social behaviors of others.

Just as high empathy has been shown to be related to prosocial behavior, decreased empathy has been associated with antisocial behavior (Miller & Eisenberg, 1988). Individuals who are lower in empathy fail to respond to or engage in behaviors to reduce the distress and discomfort in others, as they do not experience or understand the emotional states of others (Hare, 1999). It has been shown that children who are less empathetic and less able to understand the thoughts and feelings of others are more likely to have adjustment problems (Gleason, Jensen-Campbell, & Ickes, 2009). Children with lower empathy also tend to engage in more aggressive behaviors (Cohen & Strayer, 1996; Miller & Eisenberg, 1988) and direct bullying behaviors (Kaukiainen et al., 1999). Male and female children who engage in high frequency bullying have been shown to have lower emotional empathy, and low empathy has been associated with increased violent bullying in males and indirect bullying in females (Jolliffe & Farrington, 2006).

It has been suggested that shyness is related to an inability to regulate one's own negative emotions (Eisenberg et al., 1998). Children who are unable to self-regulate their emotions may become overwhelmed by their emotions, and may experience personal distress rather than sympathy when they see others are experiencing negative emotions (Eisenberg & Fabes, 1998). This suggests that shy children are capable of feeling empathy towards others, but are unable to express their empathetic feelings due to their personal distress over negative emotions (Eisenberg et al., 1998). Therefore, shy children may not be as willing to engage in prosocial behaviors typically associated with empathy as a way to escape personal distress associated with emotional or stressful situations (Findlay, Girardi, & Coplan, 2006). Overall, this suggests that shy, aggressive, and accepted children all experience different levels of empathy and express their empathetic

responses differently. In addition, empathy is associated with prosocial behavior, which may contribute to their social acceptance of their peers.

### Changing Attitudes Towards Children with TS

While much of the population knows someone who has a mental illness, a significant proportion of those individuals do not know much about mental illness. This is an important point, as it has been shown that negative attitudes towards those with a psychological disorder is directly related to a lack of knowledge about mental health disorders (Wolff, Pathare, Craig, & Leff, 1996<sup>b</sup>). Therefore, researchers have examined how the education of others about disorders, both medical and psychological, may increase positive attitudes and behavioral intentions towards those with a disability. Two primary methods have been used to provide information to others. One method is the education of others about the disorder through educational videos, vignettes, or handouts. The other method is self-disclosure, where the individual describes their disorder and their experiences living with their disability.

Research has been conducted on using education to inform people about medical disorders. Bell and Morgan (2000) examined children's attitudes towards obesity with or without medical information explaining the child's obesity. Results showed that children viewed the average-weight child as more acceptable than the obese child whether or not medical information was provided. The medical information provided did have a positive effect on increasing positive attitudes towards the children with obesity, but only for the younger children, as information had a negative effect on social acceptance in older children. It was suggested that younger children, who already attributed less fault towards the child with obesity, were more open and accepting of the medical information. This

increased their acceptance of the child with obesity. On the other hand, older children tend to attribute more blame towards the child with obesity. In addition, conformity with peer groups tend to become more important as children age; therefore, the medical information may have further distinguished the child from other peers, making them even less acceptable. Similar results were found in the United Kingdom. In one study, students showed more negative attitudes towards physical disabilities when they were provided with information about cerebral palsy. The opposite pattern was found when children were provided with information about Down's syndrome, as the information led towards more positive attitudes towards intellectual disabilities (Laws & Kelly, 2005).

Peer education videos have shown some promise in improving the attitudes of others towards individuals with TS. Woods (2002) provided empirical support that providing individuals with education about TS through a video increases social acceptability and positive behavioral intentions towards an individual with TS. College students either viewed an educational video about TS or did not view a video, followed by a video of a male or female actor displaying tics. The students were then asked to rate their attitudes towards the actor and a measure of social proximity was conducted. The results showed that those who viewed the educational video viewed the actor portraying TS as more socially acceptable and chose to sit closer to him or her than those who did not view the educational video. In a second study, the TS-specific video was compared to an educational video about depression and no educational video. Results showed that only those who viewed the TS-specific educational video showed an increase in positive attitudes towards the individual with TS (Woods & Marcks, 2005). These results have also been demonstrated with children, as the use of a video-based education program was

shown to significantly increase students' knowledge about TS, their attitudes towards children with disabilities, and their behavioral intentions towards a child with TS (Holtz & Tessman, 2007). These studies demonstrate that it is possible to increase the social acceptability of both children and adults with TS through the use of TS-specific educational videos.

The severity of the tics of an individual with TS has been shown to impact the effectiveness of educational videos on increasing social acceptability of those with TS. Woods, Koch, and Miltenberger (2003) compared the acceptance attitudes of college students when they viewed an actor portraying mild tics or severe tics and then either watched a TS-specific educational video or received no education about TS. Results showed that students who viewed the TS-specific educational video showed more social acceptance of the individuals portraying TS; there was no difference in their overt behavior towards the individual with TS as measured through a social proximity measure. In addition, those with more severe tics were viewed as less socially acceptable than those with milder symptoms, regardless of whether or not an educational video was shown. This suggests that, while TS-specific education videos may increase the social acceptability of those with TS, individuals with severe tics may face more social stigmatization than those with mild tics, even after peers receive education about TS.

In addition to the use of education to provide information about medical and psychological disorders, Self-disclosure has been examined as a way to increase the social acceptance of and behavioral intentions towards individuals with a disability. Increased Self-disclosure during first impressions has been shown to increase the likeability of individuals (Voncken & Dijk, 2013). Individuals with chronic disabilities,

such as TS or a life-long medical condition, often face the difficult choice of whether or not they should disclose their condition to others. Individuals with visible symptoms, such as the tics that occur with TS, may feel they have little choice regarding whether or not they should disclose to others about their disorders. Others whose symptoms are effectively controlled by medication may face a tougher decision about whether or not they should disclose. The fear of disclosure is often related to the belief that others will respond negatively and distance themselves from the individual with the disorder (Joachim & Acorn, 2000).

According to Joachim and Acorn's (2000) theoretical framework of stigma and disclosure, those with chronic disorders have two options for deciding what, if any, information they provide to others about their disorder: nondisclosure and preventative disclosure. Individuals may engage in protective disclosure, a planned disclosure where the aim is to control how and when others are informed, what information is provided, and who is informed about their condition. Individuals may also engage in spontaneous disclosing, where they do not plan to disclose but do so in an emotional way (Charmaz, 1991). Individuals who engage in protective disclosure may do so through preventative disclosure, where they aim to prevent negative perceptions of them due to their disorder by informing others of their disorder (Troster, 1997) or through informing, where the individual takes an objective position of their disorder and makes an announcement about the condition (Charmaz, 1991). Preventative disclosure may reduce negative evaluations of an individual with a chronic disorder (Joachim & Acorn, 2000). Individuals with mental disorders have reported they often engage in selective disclosure, in which they are open with their partners and close family members but do not disclose their condition

to other acquaintances and coworkers. They report that disclosing their disorder to close family and friends led to more social support and less stigmatization, while disclosing to acquaintances often led to the opposite response, with less support and stronger stigmatization (Bos, Kanner, Muris, Janssen, & Mayer, 2009).

Studies have supported that disclosure of one's medical condition may lead to increased acceptance by peers. A series of studies conducted by Hastorf, Wildfogel, and Cassman (1979) demonstrated that individuals with a disability who acknowledge their disability were preferred to those who do not acknowledge their disability. Individuals who acknowledged their disability were preferred to those who did not disclose any personal information, those who disclosed something personal that was not related to their disability, and those who appeared to be nervous disclosing something personal unrelated to their disability. Using vignettes and a hypothetical situation about the preventative disclosure of cystic fibrosis, Berlin, Sass, Davies, Jandrisevits, and Hains (2005) found that preventative disclosure significantly reduced negative peer evaluations of being different, perceptions of hiding an eating disorder, and worry related to the individual in the vignette. This suggests that preventative disclosure may be useful for individuals with cystic fibrosis, as not disclosing their condition may lead to perceptions of being abnormal or having an eating disorder. Parents have also been shown to be receptive to preventative disclosure as it relates to their children's peers. The hypothetical preventative disclosure of a child's diabetes through a vignette was shown to significantly increase the view that the child had a medical problem while reducing the parents' suspicion that the child was engaging in illegal drug use. It also significantly reduced the restrictions the parents would place on their own child's interactions with the child with

diabetes (Berlin, Sass, Davies, Reupert, & Hains, 2005). These studies suggest that preventative disclosure may be a beneficial method of increasing the social acceptability of those with a visible chronic medical condition, such as diabetes or cystic fibrosis.

The use of preventative disclosure to increase the social acceptability of those with habit disorders, such as TS or trichotillomania, has also been examined. Marks, Woods, and Ridosko (2005) examined the effects of hypothetical preventative disclosure of trichotillomania. Results showed that those who read the vignettes where the individuals engaged in preventative disclosure of their trichotillomania had increased negative social perceptions of the individual compared to those who were not informed of the individual's disorder. However, in a separate study involving the hypothetical preventative disclosure of TS, results were positive. The preventative disclosure was shown to reduce attitudes of social rejection of the individual, minimize concern, and decrease the perception that the individual's behavior may be due to a drug or alcohol problem (Marcks, Berlin, Woods, & Davies, 2007). The positive effects for the preventative disclosure of TS versus the negative effect of the disclosure of Trichotillomania may be due to the fact that hair loss is not automatically identified as a psychological disorder but instead may be identified as a medical disorder, such as alopecia. Therefore, informing others of the psychological disorder may result in less social acceptance of the hair loss. However, TS is often viewed as having a neurobiological origin and is often viewed as a disorder an individual cannot control. In addition, there are few socially acceptable reasons an individual may be engaging in tics. If individuals are viewing TS as a medical disorder, this may be why the results regarding

the preventative disclosure of TS are more in line with the results of preventative disclosure of other medical conditions.

As shown above, peer education videos have been shown to increase positive attitudes towards individuals with TS, while the results of self-disclosing information through vignettes were more mixed. It may be that that the videos provide more information or hold the attention of others better than the vignettes used in the studies that provide medical information. Regarding habit disorders, educational views have more research support for increasing the social acceptability of those with TS than preventative disclosure, as disclosure led to increased positive attitudes towards individuals with TS, but increased negative attitudes and beliefs regarding those with Trichotillomania. Olufs, Himle, & Bradley (2013) examined the differential effects of receiving education about TS through either a commercially-produced educational video or through TS disclosure on increasing social acceptance attitudes, tolerance and positive behavioral intentions towards a young adult with TS in a college population. The self-disclosure condition for this study was different in that the TS disclosure given by the young adult with TS held the same information, and the same amount, as the commercially-produced video. In addition, participants watched a video of the adult with TS giving the TS disclosure rather than reading it in a vignette. Results showed that those who viewed the TS disclosure rated the adult with TS as more socially acceptable than those who received no education or received education through the commercially-produced video. In addition, they also showed more positive behavioral intentions towards the male with TS. This suggests that when the information is held constant in the commercially-produced educational video and the TS disclosure given by the individual,

TS disclosure may be more beneficial to individuals with TS in engaging in preventative disclosure with peers.

The studies described above demonstrate that the impact of preventative disclosure education, either through self-disclosure or education about the disorder from a third-party, is mixed. While preventative disclosure may not increase the social acceptability of all habit disorders, it may be effective for increasing the social acceptance of those with CTDs. There are several reasons that may explain why the TS-specific educational videos may have been more successful at improving attitudes towards those with TS. In the TS-specific education videos, participants are provided with a large amount of information about the disorder being studied. In contrast, in the Self-disclosure vignettes has remained limited to briefly informing the participants that the individual in the vignette has a particular disorder and perhaps a few sentences explaining how their behaviors are related to their disorder. The educational videos are able to provide more information to the viewer. When TS disclosure and educational videos hold the same amount and quality of information, TS disclosure has been shown to be effective at increasing social acceptance towards individuals with TS (Olufs, Himle, & Bradley, 2013). The research on the preventative disclosure of medical conditions has shown promise, which suggests preventative disclosure of disorders has the potential to increase positive attitudes towards individuals with medical conditions or psychological disorders.

#### Purpose of Current Research

The purpose of this dissertation was to further expand the research on the effects of educational interventions to modify peer attitudes and behaviors towards children with

TS in a school setting by comparing two forms of peer education, educational videos and TS disclosure, on increasing social acceptance attitudes and positive behavioral intentions towards a child with TS. This research expanded on the study by Olufs et. al. (2013) which found that TS disclosure was superior to educational videos in improving the social acceptability of individuals with TS in a college-aged population. The current study examines these relationships in a school-aged population, as children are highly affected by social rejection by peers. The educational interventions will include a commercially produced video (“Stop It, I Can’t; Seligman and James Stanfield Film Associates, 1984) and a TS disclosure video in which a male child actor describes his experience having TS. Currently, no studies have directly compared TS disclosure to educational videos in a school-aged population to evaluate the effectiveness of one intervention over another. The current study will compare the effectiveness of two educational strategies in the school-age population to increase positive attitudes and behavioral intentions towards those with TS. This is especially important in the school-age population, given the sensitivity of children to peer rejection.

It is important to determine whether TS disclosure or educational interventions are able to create a positive increase in peer acceptability. If one is superior to the other, it would be the preferred method for a child with TS to educate his or her peers about their disorder and how it impacts them. It may be better that a child with TS discusses their disorder with their peers, or it may be better for their teacher to show an educational video to the entire class without singling out the child with TS. If both are comparable, then the child with TS can decide how to best inform their peers.

In addition, this research examines which children are most likely to be influenced by educational interventions to increase their social acceptability and positive behavioral intentions towards a peer with TS. Children's empathy and social status (accepted, neglected, or rejected) will be examined to determine if it has an influence on whether or not they are willing to socially accept a peer with TS. By examining which children are more likely to be influenced by an educational video and are willing to accept a peer with TS, educational interventions can be targeted towards these children.

The current study hypothesized that, compared to a non-TS disclosure video, both a commercially-produced educational video and a TS disclosure video will lead to: 1) increased ratings of social acceptance; and 2) increased ratings of positive behavioral intentions towards a child with TS. In addition, it was hypothesized that accepted children, compared to neglected and rejected children, would show a greater increase in social acceptability ratings and positive behavioral intentions towards a peer with TS. Neglected children were hypothesized to show greater social acceptability ratings but lower positive behavioral intentions towards a peer with TS. Lastly, it is hypothesized that rejected children would show lower social acceptability ratings and fewer positive behavioral intentions towards a child with TS.

## CHAPTER II

### METHODS

#### Participants

Participants were 243 school-aged children in grades four (93) and five (149), enrolled in five rural school districts in the upper Midwest. The average class size was 14.47. The average age of participants was 10.2 ( $SD=1.3$ ) years. The sample consisted of 115 males (47.3%) and 128 females (52.7%). Participants were predominantly Caucasian (62.1%), followed by multi-racial (20.9%), Hispanic (9.9%), African American (2.1%), American Indian (1.2%) and Asian (.4%). School districts were offered an educational seminar that discussed TS in the classroom and were given a report of the findings. An a priori power analysis was conducted for an ANOVA with four groups and seven dependent variables, with an effect size of .225 and a desired power of .80, 128 students were required for significant power. All participants were included in the analysis.

#### *Materials*

##### *TS stimulus video (TS)*

A 2-minute video of a male child actor, age 11, was viewed by the participants. Analysis of the data suggests the actor was viewed as being within the average range of attractiveness, as only 9.6% of children described the actor as ugly and only 7.2% of children described him as handsome. This would suggest that the actor was viewed as neither highly attractive nor unattractive, and neither a floor nor ceiling affect for

attractiveness occurred. The child actor portrayed someone with TS by engaging in a motor tic (arm jerking towards chest) and vocal tics (grunting) while reading a book. The actor portrayed a “moderate” degree of tics, in which the motor and vocal tics occurred at a rate of 14 tics per minute. The vocal tics occurred at a medium volume and the motor tics began approximately three inches from the body. This rate of tics is based on the study by Woods, Koch, and Miltenberger (2003), who examined both mild and severe tic symptoms. The moderate tic rate of this study was calculated by averaging the mild and severe rates of tic occurrences in their study. The actor displayed moderate tic severity instead of severe tics, as there has been evidence that other tic stimulus videos have focused too much on severe tic symptoms, which do not occur as often in the TS population (Holtz & Tessman, 2007). Three-fourths of the participants viewed the actor in the stimulus video.

The child actor and his parents were debriefed as to his role in the study and that the video would be shown to grade school students in the upper Midwest for research purposes. In order to better understand how to portray an individual with TS, the actor watched a video on the disorder, which included children and adolescents with TS engaging in tics and talking about their experiences. The parents of the child actor signed a consent form and the child actor signed an assent form, stating they understood their role in the study, including the risks and benefits of participating. The child actor was compensated for his performance with gift certificates to the stores of his choice.

In order to guarantee accuracy in the portrayal of an individual with TS, the stimulus video was rated by three professionals and rated the video on a five-point Likert

scale, with 5 being a very accurate portrayal and 1 being a very inaccurate portrayal. All three professionals rated the video as a four out of five.

*Control stimulus video (NTS)*

For the control condition, one-fourth of the participants viewed a 2-minute video of the same male child actor used in the stimulus video reading a book. He was not portraying either motor or vocal tics.

*Commercially-produced educational video (Professional TS Education)*

The video “Stop It, I Can’t” (Seligman and James Stanfield Film Associates, 1984) was used in the study as the education video. It is a 13-minute video that is sold and promoted by the National Tourette’s Syndrome Association. It provides information about TS and has a variety of children and adolescents with TS discussing their personal experience with the syndrome. Several studies have used it as an educational video to increase the social acceptability of those with TS with significant results (Woods, 2002; Woods, Koch, & Miltenberger, 2003; Woods & Marcks, 2005).

*TS disclosure educational video (Self TS Education)*

The same male child actor in the stimulus videotapes provided information about TS and his experiences as an individual with TS in a Self-disclosure video. In order to ensure that the educational video and TS disclosure video were matched on content, the educational video was transcribed into a script that was read by the child actor. The TS disclosure videos differed from the education video in the following ways: 1) the script was reworded slightly in order to improve the flow or presentation, 2) the information was presented to be consistent with a first-person account, 3) the script was changed to remain gender and age appropriate to the child actor, and 4) duplicate phrases and

experiences were removed. The TS disclosure video did not present any information that was not presented in the educational video. Therefore, the primary difference between the educational video and the TS disclosure video was the way the information was delivered, either by the child actor portraying TS symptoms or through the commercially-produced education video. The child actor continued to demonstrate tics during the TS disclosure video at a similar rate he did in the stimulus video.

#### *Non-TS Disclosure Video (No TS Education)*

The same male child actor in the stimulus videotapes provided information about himself that did not include information about TS or his experience with TS. He provided information about his family, school experiences, hobbies, and interests. The length of this non-TS disclosure video was roughly equivalent to the length of the TS disclosure video and included similar information used in the TS disclosure video. There were two versions of the non-TS disclosure videos, one where the male actor did not display tic symptoms during the video (for participants who saw the control-stimulus video) and one where the male actor did engage in tic behaviors (for participants who viewed the TS-stimulus video).

### *Measures*

#### *Demographics questionnaire*

Each child participant was given a demographic questionnaire in order to adequately characterize the sample. The questionnaire included questions regarding participant's age, gender, grade, and experience with TS and related repetitive behavior disorders. Participants were asked if they themselves have or know someone with TS or

another habit disorder. Lastly, they were asked about their knowledge and familiarity with TS.

#### *Social Group Questionnaire*

The Social Group Questionnaire is a self-report measure of social group membership which was designed by this author in an attempt to examine what social group a child was in: accepted, rejected, or neglected (Appendix A). It originally consisted of 21 questions, with seven describing traits and behaviors of children in each social group. Participants identified whether the statement is never, sometimes, often, or always true for them. Development and evaluation of the measure is further discussed in Appendix B.

#### *Peer Nomination Form*

Each child was administered a sociometric questionnaire that asked them to list the names of three children in their class they like the best and the three children they like the least. These instructions were followed by a discussion of the importance of confidentiality on the children's and the investigator's part, and children were told not to discuss the task during the survey or after class. Following the procedure set forth by Green, Forehand, Beck, & Vosk (1980), each child in the classroom was given a "positive sociometric" and "negative sociometric" score. The positive sociometric score was obtained by dividing the total number of times a child was chosen as being well liked divided by the total number of children in his or her class. The negative sociometric score was obtained by dividing the total number of times a child was chosen as being least liked divided by the total number of children in their class. Accepted children had positive sociometric scores  $>.24$  and negative sociometric scores  $<.06$ ; rejected children

had negative sociometric scores  $>.24$  and positive sociometric scores  $<.06$ ; neglected children were identified as those with positive and negative sociometric scores  $<.06$ ; and controversial children had positive sociometric scores  $>.24$  and negative sociometric scores  $>.24$ . Children whose sociometric scores did not result in categorization were classified as "unable to label". Peer nomination methods have been found to have split-half coefficient ranging from .72 to .98 (Kubany, 1957), internal consistency and test-retest reliability at .89 and .78 respectively, and validity coefficients range from .43 to .32 (Kane & Lawler, 1978).

*The Index of Empathy for Children and Adolescents* (Bryant, 1982)

The Index of Empathy for Children and Adolescents (IECA) is a self-report measure of empathy that consists of twenty-two "yes/no" questions. It is one of the only self-report questionnaires to examine empathy young children (De Wied et al., 2007). It conceptualizes empathy as empathetic attitudes and was designed for use with children and adolescents, with higher scores indicating higher empathy. It has been found to have an alpha coefficient of 0.79,  $t$  (Bryant, 1982), a mean discrimination index of .31 (del Barrio, Aluja, & Garcia, 2004), and test-retest reliability across a two-week interval ranged from .74 to .86 (Bryant, 1982). It is considered a reliable and well-validated measure of empathy in children (Eisenberg & Miller, 1987). In order to create categories of empathy for analysis, children with scores within 1SD of the mean were categorized as having "medium" levels of empathy. Children with scores greater than 1SD below the mean were categorized as having "low" levels of empathy, and children with scores greater than 1SD above the mean were categorized as having "high" levels of empathy.

### *Adjective Checklist* (Siperstein, 2006)

The Adjective Checklist was designed specifically for measuring children's attitudes towards individuals with disabilities. It consists of a list of 32 adjectives, with half having a positive value (eg., "healthy", "clever") and half having a negative value (e.g., "lonely", "cruel"). Construct validity has been confirmed and internal consistency reliability has been demonstrated through a coefficient alpha of .81 (Siperstein, 1980). The rater was asked to mark all the adjectives that describe the child actor in the video they saw. The checklist was then scored by subtracting the negative adjectives marked from the positive adjective marked and adding a constant of 20 (Siperstein & Gottlieb, 1977).

### *Friendship Activity Scale* (Siperstein, 1980)

The Friendship Activity Scale measures children's behavioral intentions towards a peer with disabilities. It consists of 17 items describing activities that children share with classmates and friends. In responding, children indicated whether they would include a hypothetical child (the child actor) in a specific activity by choosing one of four responses: no, probably no, probably yes, and yes. Reliability of the questionnaire has been shown to be satisfactory ( $\alpha=0.87$ ; Manetti, Schneider, & Siperstein, 2001).

### Procedures

School districts provided consent for research to be conducted in fourth and fifth grade classrooms. An information and informed consent sheet was handed out to students to give to their parents before the study was conducted. Parents were instructed to return the attached form if they wanted to withdraw their child from the study. If parents did not return the opt-out form, consent was assumed. Student participants also signed an

informed assent to participate in the study, which discussed the study and the importance of confidentiality.

A quasi-experimental design was utilized in this study. Each classroom, and therefore all the children in the classroom, was randomly assigned to one of the four groups. Of those four groups, three viewed the stimulus tape of the actor displaying tics, following which one group viewed the education video “Stop It, I Can’t” (TS + Professional TS Education), one group viewed the TS disclosure video (TS + Self TS Education), and one group viewed the non-TS disclosure video (TS + No TS Education). A fourth group viewed the video of the actor displaying no tic behaviors and the non-TS disclosure video (NTS + No TS Education).

Participants completed the study in their classrooms with their classmates. First, a discussion was held with the students regarding the importance of confidentiality and of not talking with one another about how they answered the questions. The participants then received the assent form, social group questionnaire, peer nomination form, and IECA. The forms had written directions printed on them and were read aloud to the participants. Afterwards, the class watched the stimulus video and the educational video for their assigned condition.

Upon the completion of the educational video, the participants received a second packet of questionnaires: the Adjective Check List, Friendship Activity Scale, and Demographics Questionnaire. The importance of confidentiality was reiterated. Participants were asked to answer all the questionnaires honestly. Lastly, participants were debriefed about the experience. Questions students had about research and TS were answered by the researcher.

## CHAPTER III

### RESULTS

#### *Hypotheses*

The current study hypothesized that, compared to a non-TS educational video condition, both a commercially-produced educational video and a TS disclosure education video will lead to 1) increased ratings of social acceptance; and 2) increased ratings of positive behavioral intentions towards a child with TS. In addition, it was hypothesized that 1) accepted children, compared to neglected and rejected children, would show a greater increase in social acceptability ratings and positive behavioral intentions towards a peer with TS; 2) neglected children were hypothesized to show greater social acceptability ratings but lower positive behavioral intentions towards a peer with TS; and 3) rejected children would show lower social acceptability ratings and fewer positive behavioral intentions towards a child with TS.

#### *Overview of Procedures*

Descriptive statistics for the variables used in the study are included in Table 1.

Table 1. Descriptive Statistics of Variables Utilized

	Range		<i>M</i>	<i>SD</i>	Skewness	Kurtosis
Social Group Questionnaire	24.00	60.00	45.20	5.65	-.43(.16)	.61(.32)
Positive Sociometric Score	.00	.83	.18	.15	1.23 (.16)	2.38 (.31)
Negative Sociometric Score	.00	.85	.17	.16	1.26 (.16)	1.69 (.31)
IECA	5.00	22.00	14.14	3.07	-.52 (.16)	.28 (.31)
Adjective Checklist	8.00	36.00	24.93	5.97	-.21 (.16)	-.61(.31)
Friendship Activity Scale	17.00	68.00	49.40	11.75	-.67 (.16)	-.10 (.31)

This study was a clustered quasi-experimental design, so a violation of the assumption of independence occurred. While classrooms were randomly assigned to an education condition, students in each class were not randomly assigned to a condition and viewed the series of videos as an entire class. Therefore, individual students were not randomly assigned to groups. Pre-analysis data screening revealed missing data for the Friendship Activity Scale and IECA items. Missing item values were replaced with each participant's mean item score for each scale, provided the participant had answered at least 75% of items for each scale. If participants did not answer at least 75% of items, their total score was not included in the analysis. Examination of normality was conducted for the Adjective Checklist and Friendship Activity Scale using the Kolmogorov-Smirnow test, and it was found to be significant for both scales. For the Adjective Checklist, a negative skew was identified and the distribution was platykurtotic. For the Friendship Activity scale, a negative skew was identified and again the distribution demonstrated platykurtosis. Data transformations did not improve normality, and therefore no data transformations were conducted in the final analyses. Finally, the assumption of homogeneity of variance was also violated for both the Adjective Checklist and the Friendship Activity Scale, as Levene's test was statistically significant, suggesting that the variances were not equal. Given that the data violated the

assumption of normality, this violation of homogeneity of variance is not unexpected, especially given that the Levene test may have a high Type 1 error rate when population distribution is skewed, as was the case with these results (Myers & Well, 2003). In addition, the quasi-experimental design of the study would also account for the possibility of heterogeneity of variance.

A series of t-tests for independent samples were conducted to determine significant relationships between the demographics of the participants and the social acceptability and behavioral intentions measures used in this study. Results indicated a significant difference in the positive behavioral intentions score for males ( $M=51.08$ ,  $SD=11.87$ ) and females ( $M=47.29$ ,  $SD=11.41$ );  $t(240)=2.71$ ,  $p<.05$ , two-tailed. The magnitude of the difference in the mean (means difference = 4.05, 95% *CI*: 1.02 to 6.99) was small (Cohen's  $d=.3$ ). Therefore, it was not considered a concern for covariance. Results indicated a significant difference in the social acceptability score for students who identified as being White ( $M=25.07$ ,  $SD=5.69$ ) compared to students who identified as Hispanic ( $M=21.19$ ,  $SD=5.21$ );  $t(175)=3.24$ ,  $p<.05$ , two-tailed. The magnitude of the difference in the mean (means difference = 3.87, 95% *CI*: 1.52 to 6.23) was large (Cohen's  $d=.71$ ). Results also indicated a significant difference in the social acceptability score for students who identified as Hispanic ( $M=21.19$ ,  $SD=5.21$ ) compared to students who identified as Multi-ethnic ( $M=25.85$ ,  $SD=5.81$ );  $t(58)=3.22$ ,  $p<.05$ , two-tailed. The magnitude of the difference in the mean (means difference = 4.66, 95% *CI*: 1.76 to 7.56) was large (Cohen's  $d=.84$ ). While the difference between the students who identified as Hispanic and those who identified as White or Multi-ethnic was large, there were no other differences between ethnic group identification. Therefore, ethnicity could have

been considered a covariate. However, due to the lack of normality, Kruskal-Wallis tests needed to be conducted, and covariates cannot be analyzed with this nonparametric test. Lastly, results indicated a significant difference in the social acceptability score for students' knowledge of TS, with those reporting they heard of TS ( $M=24.08$ ,  $SD=5.83$ ) rating the child actor as less acceptable than those who reported knowing a lot about TS ( $M=27.10$ ,  $SD=5.65$ );  $t(125)=2.17$ ,  $p<.05$ , two-tailed. The magnitude of the difference in the mean (means difference =  $-3.01$ , 95%  $CI$ :  $-5.75$  to  $-.27$ ) was medium (Cohen's  $d = .52$ ). Once again, it was not used as a covariate due to the use of nonparametric Kruskal-Wallis tests for analysis of the data. No other significant differences were found.

As this was a quasi-experimental design, the classrooms were randomized rather than the individual students. Therefore, a series of between-subjects analysis of variance (ANOVAs) was performed to test whether there were differences between the classrooms in students' social acceptability ratings and positive behavioral intentions towards the child actor for each education condition. In the TS + Professional TS Education condition, a significant effect was found for classroom on students' positive behavioral intentions towards the child actor,  $F(4, 65)=3.11$ ,  $p<.05$ . The effect size comparing the means was large ( $\eta^2=.16$ ). There was no significant effect for classroom on students' social acceptance ratings of the actor,  $F(4, 65)=1.74$ ,  $p=.15$ . In the TS + Self TS Education condition, a significant effect was found for classroom on student's social acceptability ratings of the child actor,  $F(3, 56)=2.77$ ,  $p=.05$ . The effect size comparing the means was large ( $\eta^2=.13$ ). There was no significant effect for students' positive behavioral intentions towards the child actor,  $F(3, 55)=2.46$ ,  $p=.07$ . In the TS + No TS Education condition, a significant effect was found for classroom on students' positive

behavioral intentions toward the child actor,  $F(3,55)=3.47, p<.05$ . The effect size comparing the means was large ( $\eta^2=.16$ ). There was no significant effect for students' social acceptability rating of the child actor,  $F(3,57)=1.55, p=.21$ . In the NTS + No TS Education condition, a significant effect was found for classroom on student's positive behavioral intentions towards the child actor,  $F(2,45)=3.82, p<.05$ . The effect size comparing the means was large ( $\eta^2=.15$ ). No significant effect was found for students' social acceptability ratings of the child actor,  $F(2,45)=2.34, p=.11$ . These results suggest that there were significant differences in how students in each class rated the child actor, even when they were assigned to the same condition as other classrooms.

Due to non-normality of the data, a series of Kruskal-Wallis tests were performed as the non-parametric alternative to one-way between-groups analysis of variance. A series of Mann-Whitney U Tests were conducted to test for differences between independent groups for post-hoc analyses, as it is the non-parametric alternative to the t-test for independent samples. To control for Type 1 errors, a Bonferroni adjustment to the alpha value was conducted for the Mann-Whitney U Tests for the post-hoc analyses. Effect sizes were determined based on the results of the Mann-Whitney U Tests and the size was based on Cohen (1988) criteria of .1=small effect, .3=medium effect, and .5=large effect. Spearman rho correlations were also performed. Independent variables included: 1) education condition (TS + Professional TS Education vs. TS +Self TS Education vs. TS + No TS Education vs. NTS + No TS Education); 2) empathy of participant, as measured by the IECA (High Empathy vs. Medium Empathy vs. Low Empathy); and 3) social group category, as determined by Peer Nomination Form (Accepted vs. Rejected vs. Neglected vs. Controversial vs. Unable to Label). Dependent variables included: 1)

social acceptability, of actor as measured by Adjective Checklist; and 2) behavioral intentions, as measured by Friendship Activity Scale. All participants were included in the analysis. Significance levels were set at  $p \leq .05$ .

### *Social Acceptability*

A Kruskal-Wallis test revealed a statistically significant difference in social acceptance levels across four different video conditions (Gp1,  $n=70$ : TS + Professional TS Education, Gp2,  $n=60$ : TS + Self TS Education, Gp3,  $n=61$ : TS + No TS Education, Gp4,  $n=48$ : NTS + No TS Education),  $\chi^2(3, n=239) = 48.19, p < .05$  (see Table 2). A series of six Mann-Whitney U Tests were conducted to determine group differences. To control for Type 1 errors, a Bonferroni adjustment to the alpha value was conducted and the significance level was set at .008. The Mann-Whitney U Test revealed a significant difference in the social acceptance levels of those in the TS + Professional TS Education ( $Mdn=21, n=70$ ) and those in the TS + Self TS Education ( $Mdn=25, n=60$ ),  $U=1285, z=-3.81, p < .01, r=.33$  (medium effect). There was a significant difference in the social acceptance levels of those in the TS + Professional TS Education and those in the TS + No TS Education ( $Mdn=31, n=61$ ),  $U=728, z=-6.504, p < .01, r=.57$  (large effect). There was a significant difference in the social acceptance levels of those in the TS + Professional TS Education and those in the NTS + No TS Education ( $Mdn=25.5, n=48$ ),  $U=1102.5, z=-3.168, p < .01, r=.29$  (medium effect). There was a significant difference in the social acceptance levels of those in the TS + Self TS Education and those in the TS + No TS Education,  $U=1038.5, z=-4.112, p < .01, r=.37$  (medium effect). There was a no

significant difference in the social acceptance levels of those in the TS + Self TS Education and those in the NTS + No TS Education,  $U=1352$ ,  $z=-.545$ ,  $p=.59$ ,  $r=.05$ . There was a significant difference in the social acceptance levels of those in the TS + No TS Education and those in the NTS + No TS Education,  $U=992$ ,  $z=-2.88$ ,  $p<.01$ ,  $r=.28$  (medium effect). These results indicate that students in the TS + No TS Education video rated child actor as more socially acceptable than those in the other three conditions. Those in the TS + Education condition rated the child actor as less socially acceptable than those in the other three conditions. This suggests that students who viewed the child actor displaying symptoms of TS and received non-tic related information about the child actor rated the child as more socially acceptable than students in other conditions, while students who viewed the child actor displaying symptoms of TS and then viewed the commercially-produced education video rated the child actor as less socially acceptable than students in the other three conditions.

Table 2. Mann-Whitney U Tests for the Effect of Education on Social Acceptability

	TS + Professional (21.00)	TS+ Self (25.00)	TS + No TS (31.00)	NTS + No TS (25.50)
TS + Self TS Ed	4.00*	---	---	---
TS + No TS Ed	10.00*	6.00*	---	---
NTS + No TS Ed	4.50*	.5	5.50*	---

\* significant difference between the group means (seen in parentheses) at  $p\leq.008$

A Kruskal-Wallis test revealed a statistically significant difference in social acceptance ratings across social group categorizations of the students (Gp1,  $n=45$ : Accepted, Gp2,  $n=37$ : Rejected, Gp3,  $n=18$ : Neglected, Gp4,  $n=8$ : Controversial, Gp5,  $n=138$ : Unable to Label),  $\chi^2(4, n=246) = 12.79$ ,  $p<.05$  (see Table 3). A series of nine

Mann-Whitney U Tests were conducted to determine group differences. To control for Type 1 errors, a Bonferroni adjustment to the alpha value was conducted and the significance level was set at .005. The Mann-Whitney U Test revealed a significant difference in the social acceptance levels of those identified as Controversial ( $Mdn=31.00, n=8$ ) and those identified as Unable to Label ( $Mdn=24.00, n=138$ ),  $U=216.5, z=-2.89, p<.01, r=.24$  (small effect). No other significant group differences were found between Accepted ( $Mdn=25.00$ ), Rejected ( $Mdn=23.00$ ), Neglected ( $Mdn=27.00$ ), Controversial ( $Mdn=31.00$ ), or Unable to Label ( $Mdn=24.00$ ) groups of students. These results indicate that students identified as controversial rated the child actor as more socially acceptable when compared to students who were unable to be labeled. Otherwise, there were no significant differences in student ratings of social acceptance of the child actor across social groups. In addition, Spearman's rho revealed no statistically significant relationship between the students' social acceptability ratings of the child actor and their positive sociometric score ( $rs[246]=-.02, p=.77$ ) or negative sociometric score ( $rs[246]=-.07, p=.31$ ), as determined by the *Peer Nomination Form*.

Table 3. Mann-Whitney U Tests for the Effect of Social Category on Social Acceptability

	Accepted (25.00)	Rejected (23.00)	Neglected (27.00)	Controversial (31.00)	Unable to Label (24.00)
Rejected	2.00	---	---	---	---
Neglected	2.00	4.00	---	---	---
Controversial	6.00	8.00	4.00	---	---
Unable to Label	1.00	1.00	3.00	7.00*	---

\* significant difference between the group means (seen in parentheses) at  $p\leq.005$

A Kruskal-Wallis test revealed a statistically significant difference in social acceptance levels across empathy levels of the students (Gp1,  $n=42$ : Low Empathy, Gp2,  $n=168$ : Medium Empathy, Gp3,  $n=31$ : High Empathy),  $\chi^2(2, n=241) = 12.99, p < .05$  (see Table 4). A series of Mann-Whitney U Tests were conducted to determine group differences. To control for Type 1 errors, a Bonferroni adjustment to the alpha value was conducted and the significance level was set at .017. The Mann-Whitney U Test revealed a significant difference in the social acceptance levels of those identified as having low empathy levels ( $Mdn=21.5, n=42$ ) and those identified as having medium empathy levels ( $Mdn=26.00, n=168$ ),  $U=2286.5, z=-3.53, p < .01, r=.24$  (small effect). There was a significant difference in the social acceptance levels of those identified as having low empathy levels and those identified as having high empathy levels ( $Mdn=25.00, n=31$ ),  $U=415, z=-2.639, p < .01, r=.31$  (medium effect). There was no significant difference in the social acceptance levels of those identified as having medium empathy levels and those identified as having high empathy levels,  $U=2573.5, z=-.10, p=.92, r=.01$ . The results suggest that students with medium and high levels of empathy endorsed higher social acceptance of the child actor compared to those with low levels of empathy.

Table 4. Mann-Whitney U Tests for the Effect of Empathy on Social Acceptability

	Low (21.50)	Medium (26.00)	High (25.00)
Medium	4.50*	---	---
High	3.50*	1.00	---

\* significant difference between the group means (seen in parentheses) at  $p \leq .017$

Spearman's rho revealed a statistically significant relationship between the student's empathy ratings and the student's social acceptability rating of the child actor

( $r_s[241]=.255, p<.01$ ) (see Figure 1). This result indicates that the higher the student's empathy, the higher their rating of social acceptance of the child actor.

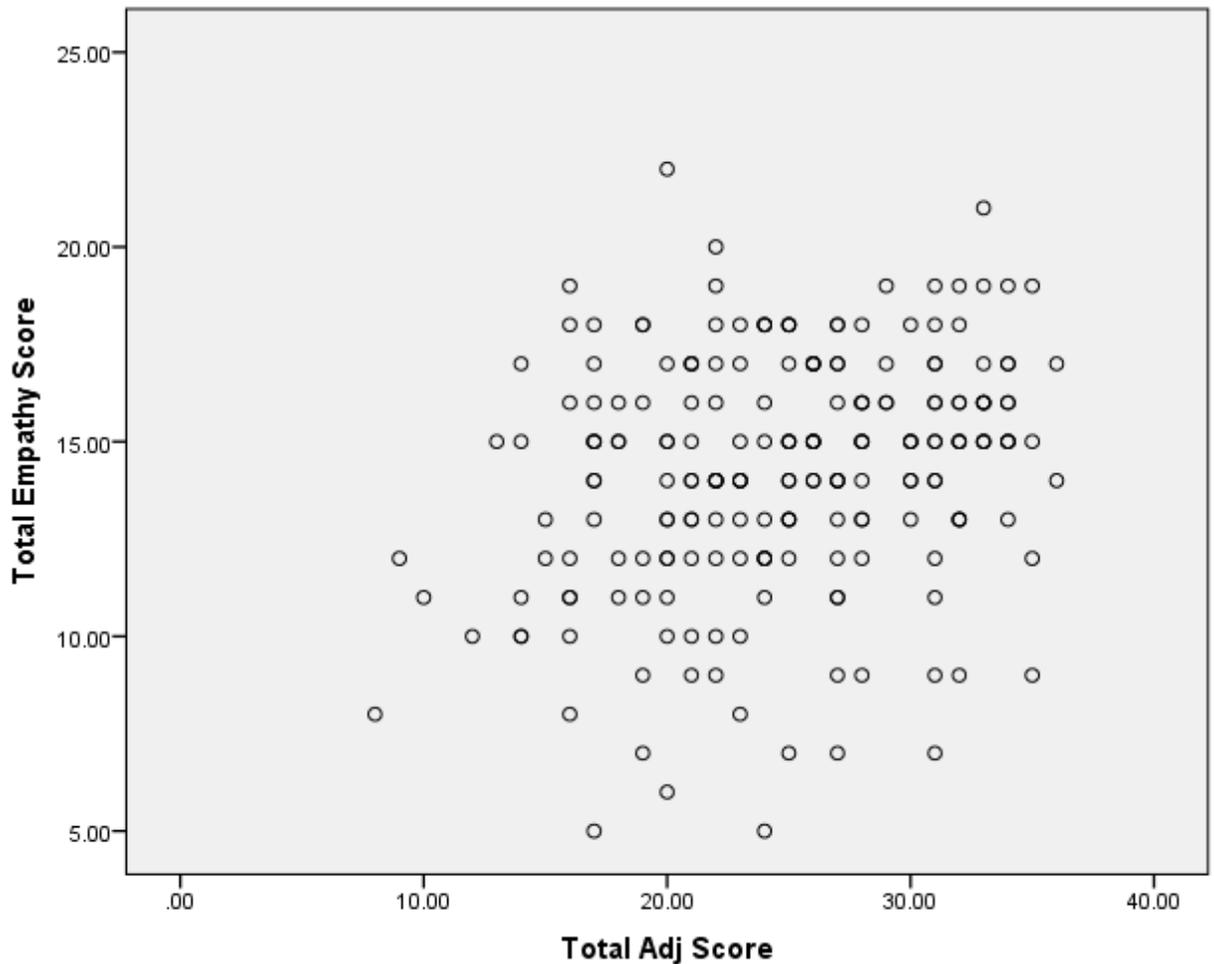


Figure 1. Spearman's Rho Test for the Relationship Between Student's Empathy and Social Acceptability of Child Actor

#### *Behavioral Intentions*

A Kruskal-Wallis test revealed a statistically significant difference in behavioral intentions levels across four different video conditions (Gp1, n=70: TS + Professional TS Education, Gp2, n=59: TS + Self TS Education, Gp3, n=59: TS + No TS Education, Gp4, n=48: NTS + No TS Education),  $\chi^2(3, n=236) = 37.69, p<.05$  (see Table 5). A series of Mann-Whitney U Tests were conducted to determine group differences. To control for

Type 1 errors, a Bonferroni adjustment to the alpha value was conducted and the significance level was set at .008. The Mann-Whitney U Test revealed no significant difference in the behavioral intentions levels of those in the TS + Education ( $Mdn=50.50$ ,  $n=70$ ) and those in the TS + Self TS Education ( $Mdn=54.00$ ,  $n=59$ ),  $U=1725$ ,  $z=-1.606$ ,  $p=.1081$ ,  $r=.14$ . There was no significant difference in the behavioral intentions levels of those in the TS + Education and those in the TS + No TS Education ( $Mdn=54.00$ ,  $n=61$ ),  $U=1922$ ,  $z=-.676$ ,  $p=.50$ ,  $r=.06$ . There was a significant difference in the behavioral intentions levels of those in the TS + Education and those in the NTS + No TS Education ( $Mdn=40.00$ ,  $n=48$ ),  $U=846.5$ ,  $z=-4.569$ ,  $p<.01$ ,  $r=.42$  (medium effect). There was no significant difference in the behavioral intentions levels of those in the TS + Self TS Education and those in the TS + No TS Education,  $U=1613$ ,  $z=-.69$ ,  $p=.492$ ,  $r=.06$ . There was no significant difference in the behavioral intentions levels of those in the TS + Self TS Education and those in the TS + No TS Education,  $U=1613$ ,  $z=-.69$ ,  $p=.492$ ,  $r=.06$ . There was no significant difference in the behavioral intentions levels of those in the TS + Self TS Education and those in the NTS + No TS Education,  $U=499$ ,  $z=-5.75$ ,  $p<.01$ ,  $r=.56$  (large effect). There was a significant difference in the behavioral intentions levels of those in the TS + No TS Education and those in the NTS + No TS Education,  $U=657.5$ ,  $z=-4.75$ ,  $p<.01$ ,  $r=.46$  (medium effect). These results suggest that students who viewed the child actor displaying symptoms of TS, regardless of type of peer education, indicated more positive behavioral intentions towards the child actor compared to those who viewed the child actor displaying no symptoms of TS.

Table 5. Mann-Whitney U Tests for the Effect of Education on Positive Behavioral Intentions

	TS + Professional (50.50)	TS+ Self (54.00)	TS + No TS (54.00)	NTS + No TS (40.00)
TS + Self TS Ed	3.50	---	---	---
TS + No TS Ed	3.50	0.00	---	---
NTS + No TS Ed	9.50*	14.00*	14.00*	---

\* significant difference between the group means (seen in parentheses) at  $p \leq .008$

A Kruskal-Wallis test revealed no statistically significant differences in positive behavioral intention ratings across social group categorizations of the students (Gp1,  $n=45$ : Accepted, Gp2,  $n=36$ : Rejected, Gp3,  $n=18$ : Neglected, Gp4,  $n=8$ : Controversial, Gp4,  $n=136$ : Unable to Label),  $\chi^2(4, n=243) = 8.31, p=.08$  (see Table 6). This suggests that the social group categorization of the students did not impact the student's ratings of their positive behavioral intentions towards the child actor. In addition, Spearman's rho revealed no statistically significant relationship between the students' positive behavioral intentions towards the child actor and their positive sociometric score ( $r_s[243]=.06, p=.39$ ) or negative sociometric score ( $r_s[243]=-.05, p=.46$ ), as determined by the Peer Nomination Form.

Table 6. Mann-Whitney U Tests for the Effect of Social Category on Positive Behavioral Intentions

	Accepted (50.32)	Rejected (47.90)	Neglected (55.06)	Controversial (54.69)	Unable to Label (48.43)
Rejected	2.42	---	---	---	---
Neglected	4.74	7.16	---	---	---
Controversial	4.37	6.79	.37	---	---
Unable to Label	1.89	.53	6.63	6.26	---

\* significant difference between the group means (seen in parentheses) at  $p \leq .005$

A Kruskal-Wallis test revealed a statistically significant difference in behavioral intentions levels across empathy levels of the students (Gp1,  $n=41$ : Low Empathy, Gp2,  $n=166$ : Medium Empathy, Gp3,  $n=31$ : High Empathy),  $\chi^2(2, n=238) = 23.64, p < .05$  (see Table 7). A series of Mann-Whitney U Tests were conducted to determine group differences. To control for Type 1 errors, a Bonferroni adjustment to the alpha value was conducted and the significance level was set at .017. The Mann-Whitney U Test revealed a significant difference in the behavioral intentions levels of those identified as having low empathy levels ( $Mdn=42.00, n=41$ ) and those identified as having medium empathy levels ( $Mdn=52.00, n=166$ ),  $U=1932, z=-4.29, p < .01, r=.30$  (medium effect). There was a significant difference in the behavioral intentions levels of those identified as having low empathy levels and those identified as having high empathy levels ( $Mdn=53.00, n=31$ ),  $U=241, z=-4.83, p < .01, r=.53$  (large effect). There was no significant difference in the behavioral intentions levels of those identified as having medium empathy levels and those identified as having high empathy levels,  $U=2176.5, z=-1.36, p=.17, r=.10$ . These results suggest that students with medium and high levels of empathy showed more

positive behavioral intentions towards the child actor compared to those with low levels of empathy.

Table 7. Mann-Whitney U Tests for the Effect of Empathy on Positive Behavioral Intentions

	Low (42.00)	Medium (52.00)	High (53.00)
Medium	10.00*	---	---
High	11.00*	1.00	---

\* significant difference between the group means (seen in parentheses) at  $p \leq .017$

Spearman's rho revealed a statistically significant relationship between the student's empathy ratings and the student's positive behavioral intentions towards the child actor ( $r_s[238] = .353, p < .01$ ) (see Figure 2). This result indicates that the higher the student's empathy, the more positive behavioral intentions they have towards the child actor.

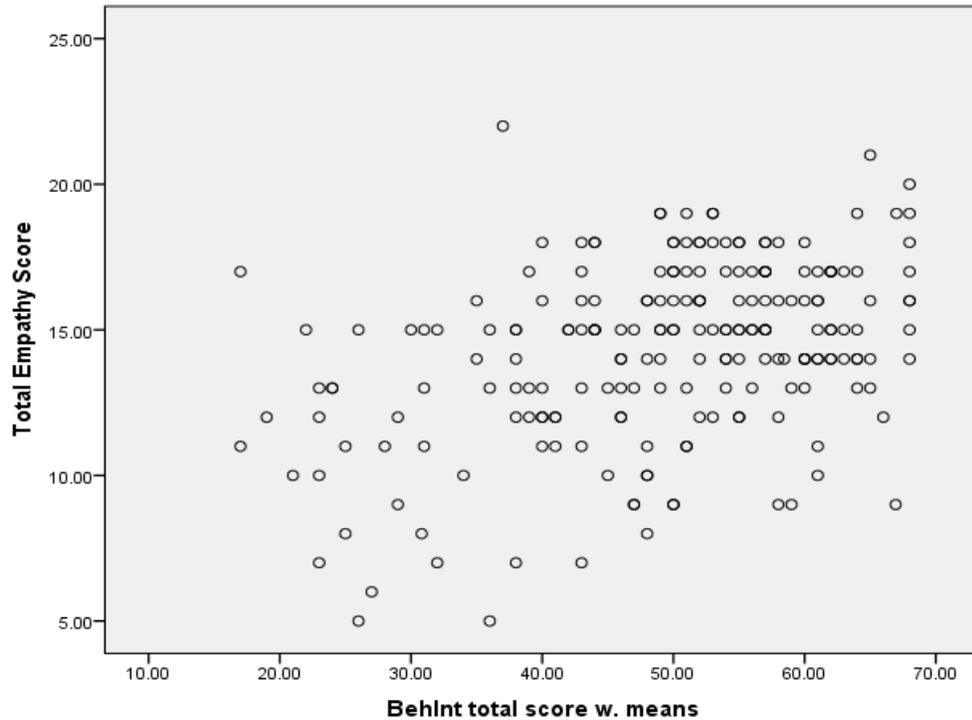


Figure 2. Spearman's Rho Test for the Relationship Between Student's Empathy and Behavioral Intentions Towards the Child Actor

*Social Group Questionnaire Results*

The relationships between the total perceived social acceptance and social acceptability ratings of and positive behavioral intentions towards the child actor were investigated using Pearson correlations. Preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity and homoscedasticity. There was a small correlation between total perceived social acceptance and social acceptability ratings of the child actor,  $r=.15, n=234, p<.05$ , with high levels of perceived social acceptance associated with high levels of social acceptance of the child actor. There was a small correlation between total perceived social acceptance and ratings of positive behavioral intentions towards the child actor,  $r=.14, n=235, p<.05$ , with high levels of

perceived social acceptance associated with higher levels of positive behavioral intentions towards the child actor.

The relationships between the perceived external social acceptance (Component 1) and social acceptance of and positive behavioral intentions towards the child actor were investigated using Pearson correlations. Preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity and homoscedasticity. There was a nonsignificant correlation of  $-.01$  ( $p=.928$ ) between perceived external social acceptance and social acceptability rating of the child actor and a nonsignificant correlation of  $-.11$  ( $p = .11$ ) between perceived external social acceptance and ratings of positive behavioral intentions towards the child actor.

The relationships between the perceived internal social acceptance (Component 2) and social acceptability rating of and positive behavioral intentions towards the child actor were investigated. Preliminary analyses were performed and found that the assumption of normality was violated. Therefore, a Spearman Rank Order Correlation ( $\rho$ ) was used as it is the non-parametric alternative to the Pearson correlation. There was a small correlation between perceived internal social acceptance and social acceptability ratings of the child actor,  $r_s=.15$ ,  $p<.05$ , with high levels of perceived internal social acceptance associated with high levels of social acceptance of the child actor. There was a medium correlation between perceived internal social acceptance and ratings of positive behavioral intentions towards the child actor,  $r=.28$ ,  $p<.05$ , with high levels of perceived internal social acceptance associated with higher levels of positive behavioral intentions towards the child actor.

## CHAPTER IV

### DISCUSSION

Tourette's Syndrome (TS) is a chronic disorder during which individuals experience both motor and vocal tics, and the median age of onset is age 6 to 7 years (APA, 2000). Therefore, children are often affected with this disorder at a critical time for social and peer development. Children with TS are at greater risk for having poorer social relationships than classmates (Stokes et al., 1991; Bawden et al., 1998) and often experience discrimination (Conelea et al., 2011), and they may lack appropriate social skills (Dykens et al., 1984) and exhibit increased internalizing symptoms (Carter et al., 2000) compared to same-aged, typically developing peers. These social deficits can result in impairment in social functioning (Conelea et al., 2011) and can reduce quality of life in children with CTDs (McGuire et al., 2013). Children with TS report significantly more peer victimization compared to peers, and over 25% of children with TS report clinically significant peer victimization, compared to 9% of peers (Storch et al., 2007). The impact of peer rejection is detrimental both in the short-term and in the long-term for children with TS. While children with TS often face peer rejection, little research has been done on the use of peer education to increase acceptance of children with TS. Research with adults has shown that peer education videos may improve attitudes towards individuals with TS (Woods, 2002), and self-disclosure regarding medical condition has also been shown to increase social acceptance and positive behavioral intentions towards

individuals with disabilities (Hastorf et al., 1979; Berlin et al., 2005; Marcks et al., 2007). In addition, video-based education programs have been shown to significantly increase student's knowledge of TS and their behavioral intentions towards a child with TS (Holtz & Tessman, 2007).

The purpose of this dissertation was to further expand the research on the effects of educational interventions to modify peer attitudes and behaviors towards children with TS in a school setting by comparing two forms of peer education, professionally-produced educational videos and TS disclosure videos, on increasing social acceptance attitudes and positive behavioral intentions towards a child with TS. Olufs et al. (2013) compared a commercially-produced education video to a TS disclosure video in a college-age population, and found that TS disclosure was superior to the commercially-produced video in improving the social acceptability of individuals with TS. The current study sought to expand on that research by examining the effects of peer education in a school-aged population. This is an important age range to examine with regards to the impact of peer education, as children are highly sensitive to peer rejection. It is important to determine whether self-disclosure regarding TS, a commercially-produced educational video, or non-TS information about the child alone result in an increase in peer acceptance of and positive behavioral intentions towards children with TS. If one is superior to the other, it would suggest that the method could be utilized in classrooms to increase the social acceptance of children with TS. If several are comparable, it would allow children with TS a choice in which methods they would prefer to use in their classroom with their peers. In addition, this research examined which children in a

classroom are most likely to be influenced by educational interventions, so interventions can be targeted towards specific students.

The current study hypothesized that, compared to the TS + No TS Education control condition, both the TS + Professional TS Education and TS + Self TS Education conditions would lead to 1) increased ratings of social acceptance; and 2) increased ratings of positive behavioral intentions towards a child with TS. In addition, it was hypothesized that 1) accepted children, compared to neglected and rejected children, would show a greater increase in social acceptability ratings and positive behavioral intentions towards a peer with TS; 2) neglected children were hypothesized to show greater social acceptability ratings but lower positive behavioral intentions towards a peer with TS; and 3) rejected children would show lower social acceptability ratings and fewer positive behavioral intentions towards a child with TS.

#### Effects of Education, Empathy, and Social Group

##### *Social Acceptability*

Students who viewed the child actor displaying symptoms of TS and received non-TS information about the child rated him as more socially acceptable than students in other conditions. Students who viewed the actor displaying symptoms of TS and then viewed the commercially-produced education video rated the child actor as less socially acceptable than students who viewed an education video in which the actor revealed personal information about himself. It may have been that the educational video was not engaging for the students. In the educational video condition, the participants were only shown the male in the video for the 2-minute stimulus video and therefore were not as exposed to the male actor. Therefore, the increased exposure to the child actor may have

increased student's social acceptance of him. These results did not support the hypothesis that both self-disclosure of TS and a commercially-produced video would be superior to non-TS disclosure. In addition, students with medium and high levels of empathy endorsed higher social acceptance attitudes towards the child actor compared to those with low levels of empathy. This indicates that the higher the student's empathy, the higher their social acceptance of the child actor.

Students who were identified as being controversial, and therefore were rated by other students as being both well-liked and disliked, rated the child actor as more socially acceptable compared to children who were not identified as belonging to any particular social group. It may be that controversial children are more sensitive to the rejection of their peers compared to children who do not fall into a specific social category, though research on controversial children is limited. It is possible that children who are rated as controversial understand what it is liked to be disliked, and therefore develop more empathy for peers. This should be examined in future research studies. However, no significant relationship was found between a student's social acceptance of the child and the proportion of the student's peer who identified them as being most liked or least liked in the class. This suggests that how liked or disliked a child is may not be related to how they will rate a child with a behavioral health disorder. The lack of findings did not support the hypotheses that children identified as accepted, rejected, and neglected would differ in their social acceptance of the child. Finally, children's social acceptance of the actor appeared to be associated with higher levels of perceived internal social acceptance and overall perceived social acceptance, while no relationship was found between perceived external social acceptance and acceptance of the child actor.

### *Behavioral Intentions*

Students who viewed the child actor displaying symptoms of TS, regardless of type of peer education, indicated more positive behavioral intentions towards the child actor compared to those who viewed the child actor displaying no symptoms of TS. This result did not support the hypothesis that self-disclosure of TS and the commercially-produced educational video would be superior to non-TS disclosure controls. Similar to the findings for social acceptance, students with medium and high levels of empathy endorsed more positive behavioral intentions towards the child actor compared to those with low levels of empathy. This indicates that the higher the student's empathy, the more positive behavioral intentions they have towards the child actor. In addition, students with higher levels of overall perceived social acceptance and perceived internal social acceptance tended to endorse increased positive behavioral intentions towards the child actor, while no significant relationship was found between perceived external social acceptance and behavioral intentions. Lastly, the social group the student was identified as belong to did not impact their behavioral intentions towards the child actor, and no relationship was found between students' positive behavioral intentions towards the child and the proportion of peers who identified them as being most liked or least liked in the classroom.

### *General Discussion*

In examining the combined results, it appears that children with TS may be able to increase their social acceptance by increasing their exposure to peers. This may best be accomplished by sharing about themselves with others, without necessarily having to discuss their TS. Commercially-produced educational videos do not appear to be an

effective method to inform others about TS and increase social acceptance. There does appear to be a difference between how students rate their social acceptance of a child with a disability and their behavioral intentions towards that same child. When examining behavioral intentions, it appeared to be the presence of the disability, not the type of peer education that resulted in increased positive behavioral intentions. This suggests that children may be willing to engage in more prosocial behaviors towards a peer with a disability than to a typically-developing peer. Empathy also appears to be an important variable, as increased empathy was associated with increased social acceptance of and positive behavioral intentions towards the child actor. An unexpected finding was the minimal impact social group status had on how students rated the child actor. This suggests that, overall, it may be increased exposure to the child with TS and peers' empathy levels that most impact how accepted a child with TS will be by their peers.

### Implications of Current Research

#### *Empathy and Social Group Identification*

One major finding of this research is that higher empathy levels results in increased social acceptance and positive behavioral intentions towards a child actor, regardless of educational condition. Children with higher levels of empathy tend to demonstrate more prosocial behaviors towards their peers (Miller & Jansen op de Haar, 1997) and this prosocial behavior results in positive emotions in the receiver that is also experienced by the empathizer (Batson et al., 1987). Similarly, children identified as being prosocial demonstrate greater empathic awareness compared to peers (Warden & Mackinnon, 2003). Operant conditioning principles would suggest that experiencing the positive emotions of the receiver would be rewarding and result in increased frequency of the

prosocial behavior. In addition, empathic children tend to show a greater understanding of peer's behaviors compared to less empathic children (Findlay et al., 2006), so it would be expected that they would better understand that the tics the child is displaying are outside his control. Low empathy, however, is associated with antisocial behavior (Miller & Eisenberg, 1988). Individuals with lower empathy tend not to experience or understand the emotional states of others (Hare, 1999), and therefore do not experience the positive emotions of the receiver of their behaviors. Therefore, according to operant conditioning principles, low empathizer's acts of prosocial behavior, if they occur, are not rewarding and therefore the behavior is likely to extinguish. Low empathizers rarely engage in behaviors to reduce the distress and discomfort in others (Hare, 1999). The results of this study support these findings, as children with higher empathy were found to demonstrate more prosocial behavioral intentions towards a child with TS than those with lower empathy.

Contrary to the hypotheses of this study, the social group students were identified as belonging to, either accepted, rejected, or neglected, had minimal impact on social acceptability and positive behavioral intentions. This was contrary to the hypotheses of this study regarding how accepted, rejected, and neglected children would rate a peer. It was expected that neglected children would have higher ratings of social acceptability and lower ratings of behavioral intentions, due to the theory that neglected children may be shy, and children who are categorized as being shy are less likely to show empathetic responses to peers due to their difficulty self-regulating their emotions when they see a peer in distress (Eisenberg & Fabes, 1998). Therefore, shy children are thought to be less likely to engage in prosocial behaviors because their anxiety would prevent them from

attempting to escape personal distress associated with emotional situations through prosocial behaviors (Findlay et al., 2006; Eisenberg et al., 1998). However, children categorized as neglected do not necessarily describe themselves as shy (Cantrell & Prinz) and are not categorized as being shy by peers (Dodge et al., 1982), and therefore theories of how shy children interact with peers may not be relevant in determining how neglected children will interact. In addition, the child actor does not appear to be distressed and was not experiencing a negative emotion, so children may not have felt a negative emotional response towards the child. Therefore, while children's empathetic responses may have been triggered, their anxiety may not have been triggered.

Children identified as accepted tend to be labeled in prosocial terms (Coie et al., 1982), and therefore it was expected they would endorse more prosocial attitudes and intentions. In addition, children high in empathy tend to be rated as more popular than their peers (Warden & Mackinnon, 2003) and those high in empathy tend to show a greater understanding of peer's behaviors compared to less empathic children (Findlay et al., 2006). The finding that students with higher empathy did endorse more social acceptance of and behavioral intentions towards the child actor, while students identified as accepted were not differentiated from peers, suggests that the relationship between empathy and accepted children may not be strong, and empathy is the more important factor to consider in peer relationships.

Rejected children tend to be less prosocial than accepted or neglected children (Cantrell & Prinz, 1985). However, rejected children approach peers in prosocial ways as often as popular children (Dodge et al., 1982). Therefore, they may endorse similar levels of positive behavioral intentions as other peers. In addition, social rejection may not be

directly related to lower empathy levels. While children who are socially rejected are more likely to be described as aggressive (Coie et al., 1982) and less prosocial (Cantrell & Prinz, 1985), they are also described as more disruptive (Coie et al., 1982), inattentive (Cantrell & Prinz, 1985), and off-task (Dodge et al., 1982). While low empathy has been associated with increased aggressive behaviors (Cohen & Strayer, 1996; Miller & Eisenberg, 1998), it has not been associated with disruptive and inattentive behaviors. Furthermore, children identified as being both nonaggressive and rejected have been shown to strongly endorse social goals, such as getting along with others and collaborative problem solving with peers (Crosby, Fireman, & Clopton, 2011). Therefore, rejected children may make up a diverse group of children, some of whom are more aggressive while others are more inattentive or disruptive, and their empathy levels may vary. This lends additional support that it is empathy, not the social group of the child that determines prosocial behaviors towards peers.

It is also important to note that there were methodological difficulties with the peer nomination form, as most children did not fall into one of the four categories (accepted, neglected, rejected, or controversial). The small class sizes made it difficult for children to meet criteria for inclusion in one of the groups, and therefore there may not have been enough children classified as belonging to each social group to reach statistical significance. A much larger sample size or larger classroom sizes may be necessary to further examine differences in peer acceptance between children identified as belonging to one of the four social groups.

Based on the social group questionnaire developed for this study, which should be interpreted with caution due to its early stages of development, there appears to be no

relationship between how students felt other children acted towards them and their attitudes towards the child actor. There was a relationship between how children viewed their social efforts and their school performance and their ratings of acceptance and prosocial intentions towards the child. This suggests that how children are viewed by their peers and their social group identification may not determine how they react towards a child with TS. Rather, what may be important in how children report they would interact with their peers is their desire to do well socially and academically, rather than how well their prosocial behaviors are received by peers. According to the Norm Activation Model (Schwartz, 1977), there are three variables that predict prosocial behaviors: personal norms, an individual's perception of obligation; awareness of consequences, what will happen to others if one does not act in a prosocial manner; and ascription of responsibility, individual's feelings of responsibility for the consequences if they do not engage in prosocial behaviors. The social group measure may have assessed personal norms, which would theoretically be related to positive behavioral intentions and social acceptance of others. According to Cognitive Dissonance Theory (Festinger 1957), those who value being prosocial and perceive themselves to act positively towards others would engage in prosocial behavior in order to reduce cognitive dissonance.

#### *Importance of Education and Exposure*

The type of education the students received appeared to impact social acceptance of the child actor, but not positive behavioral intentions towards the child. Educational conditions where the students were exposed to the child for a longer period of time while he provided information about himself resulted in higher social acceptance ratings

compared to the commercially-produced education videos. These results support those found in Olufs et. al. (2013), which found that disclosure of TS by a male actor was superior to a commercially-produced educational video about TS in increasing social acceptance attitudes towards the actor. The control condition utilized in the study consisted of participants only viewing the 2-minute stimulus video of the actor. There was no educational component and the participants were only exposed to the actor for a short period of time. This lends further support to the theory that length of exposure to an individual is an important factor in social acceptance.

The results of this study contradict research on commercially-produced educational videos. Professional peer education videos have been shown to improve attitudes towards those with TS (Woods, 2002), and Woods and Marks (2005) found that only the TS-specific education video resulted in an increase in social acceptance of individuals with TS. With children, the use of a video-based education program was found to increase students' knowledge of TS, their attitudes towards children with disabilities, and their behavioral intentions towards a child with TS (Holtz & Tessman, 2007). Once again, videos were effective in increasing social acceptance and behavioral intentions. However, in those studies only commercially-produced educational videos were used and there was no TS disclosure condition, suggesting it may have been the additional exposure to the child that contributed to the increased social acceptance attitudes of the students towards the child with TS symptoms in this study. This exposure may be more important than being provided with information about the disability, and should be examined in future studies.

This study also contradicts previous research on self-disclosure of medical and mental health disorders. It is theorized that preventative disclosure may reduce negative evaluations of individuals with disorders (Joachim & Acorn, 2000). Individuals with mental health disorders reported that disclosing their disorder to close family members led to more social support and less stigmatization (Bos et al., 2009), and disclosure of medical condition may lead to increased acceptance by peers (Hastorf et al., 1979; Berlin et al., 2005). Disclosure of TS led to increased positive attitudes (Marcks et al., 2007) compared to no education. However, these studies often utilized vignettes rather than disclosure from an actual person. The control conditions in these studies utilized a lack of information rather than non-TS information about the individual disclosing. Similarly, students rated a child demonstrating TS symptoms as less favorable than when the same child did not demonstrate tics, even when they received education about TS (Friedrich et al., 1996). However, this education was brief and included only a brief description of TS. These previous studies failed to examine extended TS disclosure and therefore exposure to the individual. Therefore controls also did not include extended social exposure. The results highlight the need for adequate control groups in future interventions regarding peer interventions. Children in control groups should receive as much exposure to the child with a disability as children receiving the interventions, and similar information should be provided in all groups. This suggests that exposure to the individual, rather than the content of the disclosure, may increase social acceptance.

The results of this study suggest that the more exposure peers have to a child with TS, the greater the social acceptance of the child with TS. Research has shown that children who were more exposed to children with disabilities through inclusive classrooms were

more likely to report feeling sorry if a child with a disability were to be excluded or treated unfairly and endorsed increased sympathy towards youth with disabilities (Gasser et al., 2013). Therefore, children with TS may benefit from increasing their exposure to peers and talking with peers about themselves. Children with TS may socially withdraw from situations, resulting in reduced peer acceptance. Children diagnosed with TS are at risk for social withdrawal (Bawden et al., 1998) and exhibit more internalizing symptoms than children in control sample (Carter et al., 2000). Children with TS have been found to have high rates of comorbid anxiety disorders, and individuals who are socially anxious tend to be judged as being less likeable after social interactions with others. Self-disclosure of personal information during first impressions has been shown to increase likeability of individuals with anxiety (Voncken & Dijk, 2013). As shy children, particularly male children, appear to be more negatively affected when they are rejected by peers (Howarth, Guyer, & Perez-Edgar, 2013), children with TS may be at increased risk for negative affective reactions to peer rejections. Therefore, children with TS may benefit from assertiveness training and social skills training in entering conversations and engaging in prosocial behaviors. Recently, a psychosocial treatment for CTDs was developed to help children with TS cope with the difficulties of having TS and the negative impact it can have on self-concept and psychosocial functioning (Storch et al., 2012), and this is an area of research that should be further explored.

The results of the study suggest that students who viewed the child with TS symptoms did not rate him as less socially acceptable than when the child did not display tic symptoms. In addition, the students identified having more positive behavioral intentions towards the child when he demonstrated tic behavior compared to when he did

not display tic behaviors. This suggests that peers may not reject children with CTDs due to the tic behaviors alone, but rather children with TS may face increased peer rejection due to other behaviors. It may be that it is the ADHD symptoms that are frequently comorbid with TS that result in the higher peer rejection rates for children with TS. Children with dual diagnoses of TS and ADHD exhibit more externalizing and internalizing disorders, as well as poorer social adaptations than typically developing children (Carter et al., 2000). Children with TS with comorbid externalizing behavior problems are at risk for peer relationship problems due to aggressive behaviors (Bawden et al., 1998). In addition, youth diagnosed with a CTD and a comorbid psychiatric disorder are more likely to avoid activities and social settings (Conelea et al., 2011). The relationship between social withdrawal and social rejection in children with TS needs to be more thoroughly examined. It may be that children with TS withdraw socially due to their concerns over the TS symptoms and feared reactions from their peers. However, these fears may not be realistic, as this study demonstrated that exposure to the child actor displaying TS symptoms increased social acceptance. Therefore, interventions for children with TS may benefit from including social skills and assertiveness training, to teach children how to approach peers and feel comfortable speaking with others.

#### *Impact of Presence of a Disability on Behavioral Intentions*

Another finding of the study was that the type of education did not appear to impact positive behavioral intentions towards the child actor. Instead, it was the presence of a disability that increased positive behavioral intentions, as students endorsed more prosocial behavioral intentions towards the child actor when he was displaying symptoms of TS compared to when he was not displaying symptoms. This suggests that the

presence of a disability would increase positive behavioral intentions of peers, including those towards a child with TS. This appears to be somewhat contrary to research on children with disabilities, as children have been found to prefer peers without disabilities to those with physical or intellectual disabilities and their attitudes towards peers with disabilities tend to be negative (Nowicki & Sandieson, 2002). However, the research is somewhat mixed, as some research suggests children actually show a high degree of acceptance of peers with a physical disability (Morgan & Wisely, 1996). Children tend to show more positive behavioral intentions towards peers with physical disabilities compared to cognitive disabilities, and also have more favorable stereotypic views of and sympathy towards children with physical compared to cognitive disabilities (Gottlieb & Gottlieb, 1977, Gasser et al., 2013). It may be that students viewed the child actor as having a physical disability rather than a cognitive or mental health disability. Children's attitudes towards those with a disability may also be influenced by how peers perceive the child's disability will affect their activities with the child (Nowicki & Sandieson, 2002). Therefore, the child actor's discussion about playing sports and participating in activities may have reduced possible concerns of the students that the child would not be able to engage in activities with the peers, resulting in higher positive behavioral intentions.

The content of the self-disclosure videos may also be important, as the child actor discusses having a difficult time with peers. When the child demonstrates symptoms of TS, there is an explanation present for why the child may have peer difficulties. When there is no explanation for the victimization, such as when the child was not displaying TS symptoms, there is no explanation for the social difficulties the child is experiencing

and therefore the students may have assumed the child has some other disability. This would explain why children would avoid the child if they did not understand why others don't want to play with him. Therefore, future studies should include an explanation for peer difficulties for the child in a control condition, such as a behavioral health condition (i.e. anxiety) or a medical condition (i.e. diabetes).

Children may be willing to interact and form friendships with peers with disabilities when the prosocial behaviors are viewed as easy to perform. If the behaviors are viewed as difficult, children will express fewer prosocial intentions towards the peer with the disability, even when they express positive attitudes towards the peer with the disability (Roberts & Smith, 1999). Moral appeals have been found to increase behavioral intent when personal cost is low, but are ineffective when personal cost is perceived to be high (Tyler, Orwin, & Schurer, 1982). This suggests that the disclosure videos may have been effective at making the point that being friends with children with TS does not require extra work and the personal cost is low for prosocial behaviors, and therefore it increased prosocial intentions. Another factor may be that children are more willing to help a peer with a physical disability than they are to develop a friendship with that peer (Weiserbs & Gottlieb, 1995). Therefore, the students in the classrooms may be willing to help the child actor and therefore scored positively on the behavioral intention scale, but they would not be willing to establish friendships with the child. Children have been found to consider the perceptions of others when responding about their friendship attitudes but not when responding about helping attitudes (Weiserbs & Gottlieb, 1995). This suggests that there may be some perceived social consequences of being friends with a peer with a disability, but less concern with helping a peer with a disability.

The students may have endorsed increased positive behavioral intentions towards the child actor displaying TS symptoms due to a response bias, in an attempt to appear more accepting of a child with a disability than they actually are. Friedrich et al., (1996) found that children perceived their classmates as being less accepting of a child exhibiting TS than they themselves were, suggesting the children may have been minimizing their actual social rejection of the child with TS symptoms. Content may be important, as this suggests that what child with TS talks about (peer difficulties, school) may not be well received when there is no perceived reason for the peer rejection. Future research should include a reason for why the child is experiencing social difficulties unrelated to TS, such as having an anxiety disorder or a medical condition like diabetes.

There was also a difference between students' social acceptance ratings of the child actor and their positive behavioral intentions toward the same child actor. Therefore, how socially acceptable the students rated the child did not necessarily mean they endorsed positive behavioral intentions towards that child. In addition, positive behavioral intentions do not necessarily mean that one will engage in prosocial behaviors in real life. For example, individual's willingness to sign an organ donation letter was found to only be moderately related to actual behavior (Radecki & Jaccard, 2006). Several studies have found that increased internal locus of control compared to external locus of control results in increased generosity (Fincham & Barling, 1978) and social interest (Stevick, Dixon, & Willingham, 1980). In addition, children with more internalized locus of control were less influenced by other's behaviors in situations (Stevick et al., 1980). Individual's attitudes, moral norms, and sense of behavioral control has been shown to predict prosocial behavioral intentions, and behavioral intentions predict actual

behaviors. Therefore, ways to increase actual prosocial behaviors should also be examined in future peer-intervention studies. This could be done by establishing interventions to increase children's internal locus of control regarding helping behaviors and engaging in positive behaviors towards a peer with an identified disorder. The child could be made to feel personally responsible for befriending the child with TS, such as a peer mentoring program. The intervention could emphasize that each child is responsible for his or her actions, and therefore makes a choice to accept or reject the child with TS.

#### *Social Group Measure*

During this study, an attempt was made to develop a self-report measure to determine a child's social group status. While the current measure was unable to distinguish accepted, neglected, or controversial children from each other, a measure may be able to separate rejected children from their peers. It may be difficult to identify neglected children, as the definition of neglected children is not as clearly delineated as those identified as accepted or rejected children. For example, neglected children are neither strongly liked nor disliked by peers (Dodge et al., 1982). While they are not viewed as disruptive or aggressive like rejected children, they also are not viewed as being as cooperative as accepted peers (Dodge et al., 1982). Some studies have shown neglected children are indistinguishable from accepted peers (Cantrell & Prinz, 1985). Therefore, it would be difficult to separate neglected children from accepted children. Neglected children are accurate in that children don't dislike them, they do well in school, and theoretically they have average levels of empathy, and these are all factors which would have been used to differentiate neglected children from other children.

There was a large amount of variance on the social group measure, suggesting that children were variable in their responses and did not align with one social group.

### Limitations

There were several limitations to this study. First, the study utilized a quasi-experimental design and it was conducted in the classroom setting. Therefore, while the classrooms were randomly assigned the individual students in the classrooms were not randomly assigned. Analysis of the data suggests that there were differences between classrooms in the same condition on their attitudes towards the child actor. While the classroom setting provided a more naturalistic setting for the study, as the intervention is classroom-based, student may have been influenced by their peers. In addition, different teachers may have different classroom rules or may have addressed acceptance and bullying in some way, which may have led to different results. Therefore, future studies should either include more classrooms so the variance between classrooms can be better accounted for, or individual students should be randomized to the condition.

A second limitation of the study was that it was conducted in small classrooms in rural school districts in the upper Midwest. The population was primarily Caucasian and Hispanic, and therefore was lacking in diversity. The study may have produced different results if it had been conducted in a different geographical area or a more urban or suburban school district. A larger representation of the general population should be included in future studies. In addition to the geographical area, the smaller class sizes were also a limitation for this study. The small class sizes limited the application of the peer nomination form, as in some cases having one peer list the participant as being most liked or least liked moved them from the popular, neglected, or rejected category into the

"unable to label" category. Therefore, approximately half of the students in the study were not identified as belonging to a particular social group. Larger class sizes would have allowed more children to potentially be classified as accepted, rejected, neglected, or controversial.

A third limitation of the study was that it only utilized self-report measures. Therefore, there was no control for how the students would actually treat a peer with TS. Instead, their self-reported intentions and attitudes were identified. As the study did not have a control for response bias, there may have been a desire to rate student in a socially desirable way. This was a similar concern in the study conducted by Olufs et al. (2013). One study examining acceptance of children with TS symptoms found that it may be important for children to be viewed as being accepting of a child with TS (Friedrich et al., 1996). Therefore, future studies should incorporate behavioral measures and direct observations of students' reactions. An actual child with TS could be utilized in future studies, and peers' interactions with the student could be observed prior to and after the intervention. This study could also be conducted with children with TS in their actual classrooms, and direct observation of their peers could be conducted before and after the intervention.

#### Future Directions

Further research should be conducted on methods for increasing peer's social acceptance and positive behavioral intentions towards a child with TS. This study demonstrated that education does have an impact on social acceptance and behavioral intentions that children endorse. While the hypotheses were not supported in this study, it appears that when the child displaying symptoms of TS shared personal information that

was not TS-related, the children judged him as most socially acceptable of the experimental conditions. When the child displaying symptoms of TS shared information about TS, he was not rated as being significantly different in his social acceptance compared to when he was not engaging in TS behaviors. Therefore, there is some evidence that self-disclosure of personal information and exposure to children with TS would result in peer acceptance levels similar to typically-developing peers. This would be an improvement over the current state, where children with TS experience significantly higher levels of peer rejection. Further studies should be conducted on the content of the self-disclosure, and if there are certain aspects of what the child self-discloses that may increase acceptance.

Future interventions should include an empathy training component, as increased empathy was associated with improved social acceptance of and increased prosocial behavioral intentions towards the child actor. The most effective way to increase social acceptance of children with TS and other disorders may not be through education about the disorder, but rather through interventions aimed at increasing student's overall affective empathy. Several studies have demonstrated improved empathy following empathy training programs. For adolescent females in a residential program, empathy training increased affective empathy, but not cognitive empathy (Pecukonis, 1990). Empathy training for sixth grade students, which consisted of recognizing, evaluating, and naming emotions and social promotion, was found to decrease bullying behavior and increase empathy skills (Sahin, 2012). Sharing behavior has been found to increase with role playing and case discussion for children in Kindergarten through third grade, with case discussion being more effective with older children and role-playing more effective

in younger children (Wei & Li, 2001). This suggests that empathy training may be possible with school-aged children.

It may be beneficial to conduct the empathy intervention with children when they are younger, before the age of seven. Children with behavior problems do not appear to differ from their peers in their concern for others at age four, but they show decreased concern for others by age six to seven years old (Hastings, Zahn-Waxler, Robinson, Usher, & Bridges, 2000). This suggests a critical period during which students show reduced concern for peers, as their empathy skills may lag behind peers. Following recommendations by Maxwell and DesRoches (2010) regarding school-based interventions to increase empathy and social-emotional learning, the intervention should focus on affect empathy (the state of emotional involvement and the amount of distress one feels when others are distressed) rather than cognitive empathy (insight into another's thoughts and behavioral intentions). This is to avoid the assumption that understanding another's point of view leads to concern for others. It is possible to understand where another is coming from and what they are feeling and not experience an empathetic response or attempt to relieve another's distress. Research has suggested that using imagery while reading fiction increases empathy for the characters and prosocial behaviors following the reading (Johnson, Cushman, Borden, & McCune, 2013). Therefore, interventions may be improved by having children read a story about a child with TS and use visual imagery and case discussion to increase empathy for the child. Empathy interventions should be compared to TS disclosure interventions in the future.

It will also be important to further examine if the peer rejection children with TS face is due to their own self-withdrawal from social situations or due to being actively rejected by their peers. Children with TS may be self-isolating, possibly due to anxiety or depression over their TS symptoms. If this is the reason for the peer rejection, social skills training may be an important intervention for increasing social acceptance of children with TS. If the reason children with TS are actively rejected is due to both social withdrawal and peer victimization, a combination of social skills training and peer interventions would be important to examine. The impact comorbid disorders have on peer rejection of children with TS should also be further examined to determine if it is TS or the comorbid disorders that are resulting in increased rates of peer rejection.

Future studies should include real children with TS in their classrooms to examine the long-term, natural effects of peer interventions. In the current study, only self-report measures were utilized. Behavioral observations should be made to determine the impact of interventions both in the short-term and long-term. It will be important to examine the impact of peer interventions with a child with TS who is in the classroom and with whom peers are already familiar. Pre-intervention functioning and peer relationships could be assessed, along with post-intervention functioning of the child and the behaviors of his or her peers. The intervention's acceptability to a child with TS could also be assessed.

### Conclusion

This study suggests that exposure to a child with TS may improve social acceptance of the child by peers. Children rated a child with TS symptoms as being most socially acceptable when he discussed his life and his interests, without discussing TS. It may be that children with TS typically withdraw socially from

peers, resulting in the higher peer rejection rates for children with TS. Therefore, it may be beneficial for children with TS to become comfortable introducing themselves and talking with peers. This could be accomplished through social skills training or self-disclosure of their disorder to the classroom. Regarding the students in the classroom, their empathy levels were shown to be related to their social acceptance of the child with TS and their positive behavioral intentions towards him. Therefore, the effectiveness of peer interventions may be improved by including an empathy training component. It may also be more a more effective intervention to have empathy training in classrooms rather than a specific intervention for a child with a disorder. It may also be beneficial for interventions to target peers with higher empathy levels and increase their sense of responsibility for being accepting and acting prosocially towards a child with TS. While commercially-produced educational videos may not be effective in increasing peer acceptance of children with TS, it does appear that Self-disclosure may improve social acceptance of a child with TS and is an important intervention strategy for future research.

## APPENDICES

Appendix A  
Social Group Questionnaire

Please answer the questions based on how often the statement is true for you. If the statement is never true for you, circle **never**. If it is sometimes true, circle **sometimes**. If it is often true for you, circle **often**. If it is always true for you, circle **always**. Please answer honestly.

1. **Other kids like me.**

Never      Sometimes      Often      Always

2. **I don't understand what the teacher is talking about in school.**

Never      Sometimes      Often      Always

3. **I try to do nice things for people**

Never      Sometimes      Often      Always

4. **I like to work alone on projects**

Never      Sometimes      Often      Always

5. **I like to be the class clown in school.**

Never      Sometimes      Often      Always

6. **When I go up to kids to work in a group, they want me in their group.**

Never      Sometimes      Often      Always

7. **I get in trouble with my teacher in school.**

Never      Sometimes      Often      Always

8. **Other kids ignore me**

Never      Sometimes      Often      Always

9. **Other kids don't like me.**

Never      Sometimes      Often      Always

10. **I get good grades in school.**

Never      Sometimes      Often      Always

**11. I don't like to be called on in class.**

Never      Sometimes      Often      Always

**12. When I go up to kids on the playground they don't want to play with me.**

Never      Sometimes      Often      Always

**13. Even though I don't have many friends, I like the ones I have.**

Never      Sometimes      Often      Always

**14. I try to be a good student in school and set a good example for my classmates.**

Never      Sometimes      Often      Always

**15. I don't like to go up to other kids to ask them to play.**

Never      Sometimes      Often      Always

**16. It is hard for me to pay attention in school.**

Never      Sometimes      Often      Always

**17. I feel bad when I know someone is feeling bad.**

Never      Sometimes      Often      Always

**18. When I see someone who is hurt I try to stay away.**

Never      Sometimes      Often      Always

**19. It is hard for me to control my temper.**

Never      Sometimes      Often      Always

**20. I do okay in school.**

Never      Sometimes      Often      Always

**21. When I see a kid who is hurt I try to help them.**

Never      Sometimes      Often      Always

## Appendix B Social Group Questionnaire Development and Evaluation

The Social Group Questionnaire was developed by this author as a self-report measure of social group membership. It attempted to determine the social group of the child: accepted, rejected, or neglected. It originally consisted of 21 questions, with seven items describing traits and behaviors of children in each social group. Content validity was established by reviewing relevant research describing children identified as being accepted, rejected, or neglected and deriving items from the research. Items for the accepted children were based on findings that children rated as liked by their peers tend to be rated in prosocial terms, including being cooperative, calm, and supportive of peers (Coie et al., 1982), along with doing well academically (Green et al., 1980). Items for rejected children were based on research that children labeled as rejected tend to be described as disruptive (Coie et al., 1982), inattentive and less prosocial (Cantrell & Prinz, 1985), and engaging in more task-inappropriate behaviors and being actively rejected by peers (Dodge et al., 1982). The items for the neglected children were based on research that children are neither disliked or liked by peers (Dodge et al., 1982), and are described as neither being shy or outgoing, nor being distressed with their peer group (Cantrell & Prinz, 1985). The 21 items were reviewed by four experts in the field of psychology and were determined to be face valid.

Cronbach's alpha for the 21 items on the Social Group Questionnaire was .65. Items with corrected item – total correlation coefficients less than .15 were excluded from the analysis (4 items). This resulted in 17 items ( $\alpha=.68$ ) on the Social Group Questionnaire. Once again, items with corrected item-total correlation coefficients less

than .15 were excluded from the analysis (1 item). This resulted in 16 items ( $\alpha=.69$ ) included for factor analysis on the Social Group Questionnaire.

The remaining 16 items of the Social Group Questionnaire were subjected to an exploratory principal components analysis (PCA) using SPSS version 20 and following guidelines for analysis suggested by Pallant (2011). Prior to performing PCA, the data was analyzed to determine its suitability for factor analysis. A correlation matrix revealed 21 coefficients of .3 or above. There were 235 total cases for the 16 items, and the resulting 14.7 to 1 ratio is greater than the recommended 10 to 1 ratio (Nunnally 1978). The Kaiser-Meyer-Olkin (KMO) value was .77 and Bartlett's Test of Sphericity (Bartlett, 1954) reached statistical significance.

Principal component analysis showed the presence of five components with eigenvalues exceeding 1, explaining 22.76%, 17.1%, 7.94%, 6.83%, and 6.26% of the variance respectively. Examination of the screeplot (Figure 3) revealed a clear break after the second component, and using Cattell's (1966) scree test two components were retained for further investigation. The two component solution was supported by the results of Parallel Analysis, which showed only two components with eigenvalues higher than the corresponding criterion values for a randomly generated data matrix of the same size.

The two-component solution explained a total of 39.78% of the variance, with Component 1 contributing 22.76% and Component 2 contributing 17.01%. An Oblimin rotation was performed, and the rotated solution revealed both components showing a number of strong loadings. Examination of the Component Matrix revealed 1 of the 16 items did not have a loading greater than .3, so it was excluded from analysis. A two-

component solution was conducted without the low-loading item, and the two-component solution explained 42.17% of the variance, with Component 1 contributing 24.05% of the variance and Component 2 contributing 18.12% of the variance. Oblim rotation was performed, and the rotated solution revealed the presence of simple structure (Thurstone 1947), with both components showing a number of strong loadings and most variables loading substantially on one component. For items that had factor loadings greater than .3 on both components, the Component it had a higher factor loading on was the component with which the item was determined to belong. The interpretation of the two components identified 5 external social items loading strongly on Component 1 and internal social group items loading strongly on Component 2 (Table 8). There was a weak positive correlation between the two factors ( $r=.10$ ). This suggests that the two components are not related and the Oblimin rotation was appropriate to use in analyzing the details. The results of this analysis support that the Social Group Questionnaire may include two separate unique scales.

Further analysis was completed on the two Components of the Social Group Questionnaire. Cronbach's alphas for the 5 perceived external social acceptance and 10 perceived internal social acceptance items were .82 and .73 respectively. Overall, the 15-items of the social group questionnaire included in the final analysis were found to have high inter-item reliability ( $\alpha=.75$ ).

A series of one-way between-groups analysis of variance was conducted to explore the impact of social group, as identified by the Peer Nomination Form, on students' ratings on the Social Group Questionnaire (SGQ) (Total, Component 1, and Component 2). Participants were divided into five groups (Group 1:Accepted; Group 2:

Rejected, Group 3: Neglected, Group 4: Controversial; Group 5: Unable to Label). There was a statistically significant difference at the  $p < .05$  level in students' ratings on the Total SGQ,  $F(4, 230) = 5.09, p < .05$ . Post-hoc comparisons using the Tukey HSD test indicated that the mean score for rejected children ( $M = 41.78, SD = 5.54$ ) was significantly lower than children rated as accepted ( $M = 46.72, SD = 5.10$ ), neglected ( $M = 47.41, SD = 3.48$ ), or unable to label ( $M = 45.33, SD = 5.74$ ) by their peers. There was no significant difference between children rated as controversial ( $M = 45.71, SD = 5.77$ ). There was also a statistically significant difference at the  $p < .05$  level in students' ratings on Component 1 of the SGQ ( $F(4, 233) = 9.54, p < .05$ ). Post-hoc comparisons using the Tukey HSD test indicated that the mean score on Component 1 for rejected children ( $M = 11.92, SD = 3.10$ ) was significantly lower than children rated as accepted ( $M = 15.35, SD = 1.96$ ), neglected ( $M = 14.53, SD = 2.40$ ), controversial ( $M = 15.63, SD = 3.29$ ), or unable to label ( $M = 14.81, SD = 2.91$ ) by their peers. There was no statistically significant difference in students' ratings on Component 2 of the SGQ ( $F(4, 233) = 1.74, p = .14$ ).

Results of the exploratory principal component analysis, reliability analysis, and the series of ANOVAs suggest that 6 items of the 21-item Social Group Questionnaire did not contribute to the measure. The 15-items of the Social Group Questionnaire were found to load onto two components, suggesting two separate, unrelated scales may make up the Social Group Questionnaire. One scale, Component 1, appeared to consist of students' self-ratings of how their peers viewed them. This was labeled the "perceived external social acceptance" scale. It consisted of 5 items: other kids like me; when I go up to kids to work in a group, they want me in their group; other kids ignore me; when I go up to kids on the playground they don't want to play with me; other kids don't like me.

The other scale, Component 2, appeared to consist of students' self-rating of what they tried to do socially and their school performance. This was labeled the "perceived internal social acceptance" scale. It consisted of 10-items: I don't understand what the teacher is talking about in school; I try to do nice things for people; I get in trouble with my teacher in school; I get good grades in school; I try to be a good student in school and set a good example for my classmates; It is hard for me to pay attention in school; I feel bad when I know someone is feeling bad; It is hard for me to control my temper; I do okay in school; When I see a kid who is hurt I try to help them.

The analysis of the ANOVAs suggested that children identified by peers as being rejected tended to rate themselves lower on the 15-item total perceived social acceptance scale and the 5-item perceived external social acceptance scale of the Social Group Questionnaire than children identified by peers as belonging to a different social group. This suggests that a Social Group Questionnaire may be able to distinguish rejected children from other peers. It did not appear able to distinguish accepted from neglected or controversial children. There appears to be some utility for this measure in regards to separating rejected children from other peers. Children who are rejected by peers describe themselves as being lonelier than peers (Asher & Wheeler, 1985) and are at increased risk for poor socioemotional development (Bierman, 1987), and adolescents rejected by peers tend to exhibit more internalizing and externalizing symptoms, along with social difficulties (Waldrip et al., 2008; Parker & Asher 1987). Therefore, identification of these children for research purposes would be highly beneficial.

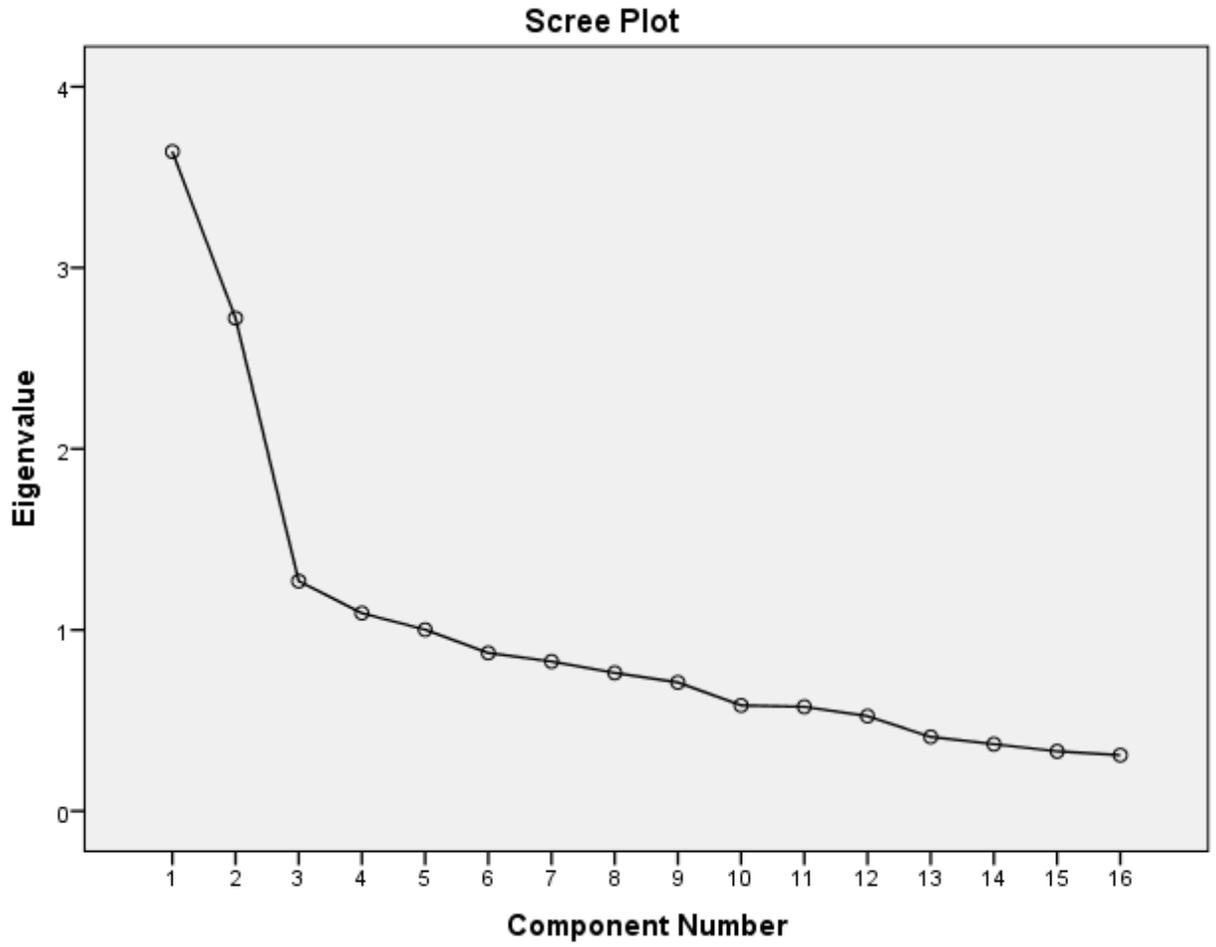


Figure 3. Screeplot for Principal Component Analysis of Social Group Questionnaire

Table 8. Pattern and Structure Matrix for PCA with Oblimin Rotation of Two Factor Solution of Social Group Items

Item	Pattern coefficient		Structure coefficient		Communalities
	Component 1	Component 2	Component 1	Component 2	
8. Kids ignore*	<b>.755</b>	-.066	<b>.748</b>	.011	.564
9. Kids don't like*	<b>.798</b>	.047	<b>.802</b>	.129	.646
12. Kids don't play*	<b>.755</b>	.020	<b>.757</b>	.097	.573
7. Trouble w.teacher**	.077	<b>.689</b>	.147	<b>.697</b>	.492
16. Hard attn**	.161	<b>.544</b>	.217	<b>.560</b>	.339
2. Don't understand**	.107	<b>.378</b>	.146	<b>.389</b>	.163
19. Hard ctrl temper**	.145	<b>.378</b>	.183	<b>.393</b>	.175
1. Kids like me*	<b>.684</b>	-.025	<b>.682</b>	.045	.465
6. Kid's want group*	<b>.690</b>	.087	<b>.699</b>	.157	.496
21. Try to help **	<b>-.304</b>	<b>.667</b>	-.236	<b>.636</b>	.497
14. Try good student**	-.148	<b>.667</b>	-.080	<b>.652</b>	.447
3. Try do nice things**	-.147	<b>.610</b>	-.084	<b>.595</b>	.376
20. Do OK school **	<b>.399</b>	<b>.531</b>	<b>.453</b>	<b>.571</b>	.484
17. Feel bad others**	<b>-.316</b>	<b>.441</b>	-.271	<b>.409</b>	.266
10. Get good grades**	<b>.305</b>	<b>.470</b>	<b>.353</b>	<b>.502</b>	.343

Note: major loading for each item are bolded. Component 1\* Component 2\*\*

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