To Disclose or not to Disclose? An Examination of the Moderating Effects of Preventive Self-Disclosure of Tourette Syndrome on Social Acceptability

by

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A Thesis presented to The University of Guelph

In partial fulfilment of requirements for the degree of Master of Arts in Psychology

Guelph, Ontario, Canada

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ABSTRACT

TO DISCLOSE OR NOT TO DISCLOSE? AN EXAMINATION OF THE MODERATING EFFECTS OF PREVENTATIVE SELF-DISCLOURE OF TOURETTE SYNDROME ON SOCIAL ACCEPTABILITY

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Individuals with Tourette syndrome (TS) experience a variety of social consequences, including social stigma and rejection, due to their “odd” ticcing behaviour. Research has shown that self-disclosure of a prior TS diagnosis mitigates the negative influence of social rejection associated with perception of tic behaviour on peers’ ratings of social acceptability. However, no studies have examined whether these positive effects of disclosure persist across the breadth of severity that characterizes tic symptomatology. In the present study, 346 participants rated the social acceptability of a male actor portraying tics in a short video segment that varied in a 2 participant sex (male, female) X 3 actor symptom severity (none, mild, severe) X 2 actor disclosure (present, absent) between-subjects design. Disclosure was shown to mitigate social rejection, however some differences were observed between males and females. In line with previous research, findings from the current study support self-disclosure of TS as a positive strategy to mitigate tic-related social rejection. Implications and limitations of these findings are discussed.
Acknowledgments

I would like to thank my advisor, Karl Hennig, for his continued and valuable support throughout my graduate research.

I would also like to thank my beautiful family, Eva and Gilad, for being my source of endless blessings and joy.
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INTRODUCTION

Tourette syndrome (TS) is a childhood onset neurological condition that affects approximately 1% of the general population (Robertson, Eapen, & Cavanna, 2009). TS presents as seemingly “odd” inexplicable and stigmatized behaviour in the form of verbal and motor tics (i.e., stereotyped vocalizations and movements). While research has shown that tic severity is associated with decreased social acceptability for the performer, some evidence suggests that disclosure of TS may mitigate this relationship. It is unknown, however, whether disclosure similarly mitigates decreased social acceptability when tics are negligible or mild. It is possible that disclosure of a TS diagnosis by those with negligible or mild tics may be self-defeating. The general purpose of the current study is to investigate the impact of disclosure of TS on the social acceptability of individuals whose tics are negligible or mild.

Tourette Syndrome, Social Acceptability and Rejection

A diagnosis of Tourette syndrome (TS) requires that a person present multiple motor tics and at least one vocal tic that persist for more than one year (American Psychiatric Association, 2000). Tics are repetitive, stereotyped behaviours that serve no useful function, and often present as unusual. Tics are commonly categorized as either simple or complex (e.g., Singer, 2005). A common example of a simple motor tic would be a facial grimace, while a complex motor tic could involve head shaking along with facial movements. A simple vocal tic might present as a bark or yelping sound, whereas a complex vocal tic might include the utterance of word or phrase. Complex tics may even resemble purposeful behaviours, although they are driven by spontaneous urges rather than a purposeful goal (Leckman, Walker, & Cohen, 1993). Tics range broadly in severity. A mild tic may be as subtle as a sniffing sound or blink, while a severe tic may involve flailing body parts or self-harm (e.g., head banging against a wall, self-striking). Tic
severity varies widely between individuals (Leckman et al., 2006). Social rejection associated with tics is thought to be due to their “odd” appearance (Findley, 2001). Considerable evidence indicates that individuals who perform tics are found to be less socially acceptable (that is, more socially rejected) than individuals without tics. In the prevailing literature, social acceptability is measured through items assessing negative social judgments (e.g., “How handicapped do you think this person is”) and social affiliation (e.g., “How much do you think you would want to sit next to this person in class?”). For example, Friedrich and colleagues (1996) demonstrated that when a videotaped child actor simulated tics, same-aged peers were less accepting of the actor than when no tics were displayed. Similar results have been reported in studies using adolescents (Boudjouk et al., 2000), and adults (Woods, Fuqua, & Outman, 1998). Woods and colleagues (1998) demonstrated a negative association between tic severity and social acceptability whereby participants rated an actor portraying an individual with TS as being less socially acceptable when the actor displayed severe tics than when he displayed mild tics.

Research investigating social rejection associated with TS symptoms has noted pervasive and deleterious social and clinical consequences for affected individuals. For instance, Stokes et al. (1991) found that children with TS are perceived by both classmates and teachers to be more withdrawn and less popular than children without TS. Shady et al. (1995) found that adults diagnosed with TS can face ridicule and discrimination from both co-workers and superiors about their tics, and may experience low job satisfaction. Beyond these negative judgments, social rejection of individuals with behavioural disorders has been found to exacerbate existing symptoms (e.g., Hansen, Giacoletti, & Nangle, 1995; Overton & Medina, 2008). The profound consequences of social rejection for individuals with tics highlights the importance of finding appropriate interventions that improve the social acceptability of persons with TS.
Social Rejection and Preventative Disclosure in Tourette’s Syndrome

One potential strategy for reducing social rejection associated with behavioural conditions is preventative disclosure. In the case of TS, this strategy would entail the diagnosed individual informing another person of their diagnosis before being asked about their tics. Two recent studies have tested the efficacy of this approach. Marcks, Berlin, Woods, and Davies (2007) proposed that individuals who preventatively disclose their TS will reduce the negative attitudes of others towards tics. They investigated whether preventative disclosure increased participant-rated social acceptability (that is, decreased social rejection) of a hypothetical peer, described in a short story vignette, who experienced tics. The authors found that, relative to nondisclosure, preventative disclosure by the hypothetical peer with TS significantly increased social acceptability.

In the second study, Olufs and colleagues (2013) featured an actor who simulated tics during a short videotaped sequence. They found that when the actor both provided education about TS and personally self-disclosed his or her condition, participants rated the actor as more socially acceptable than when TS was not disclosed. The authors concluded that people affected by tics could reduce tic-related social rejection by preventatively disclosing their TS, and encouraged individuals with TS to disclose their condition to others with whom they have regular contact. The current study will similarly employ a videotaped actor portraying tics to investigate differences in social acceptance given disclosure versus nondisclosure.

Sex Differences in Social Rejection and Preventative Disclosure

While social rejection faced by individuals with TS is well established, less clear is whether males and females are equally affected. Research examining the effects of sex on the social acceptability of individuals with TS has produced mixed results. The sex of the person
performing tics was found to moderate the relation between tic severity and social acceptability such that observers considered females who performed tics to be more socially acceptable than males (Woods et al., 1998). With respect to the sex of the observer, some studies have found a significant effect on social acceptance (Woods & Marcks, 2005) while other studies have found no relationship (Olufs, 2013). Outside of the TS literature, evidence suggests that individuals tend to rate a same-sex peer as being more socially acceptable than an opposite-sex peer (Friman et al., 1993; Wisely & Morgan, 1981).

Despite a general support in the literature for the social benefits of personal self-disclosure, the question of whether disclosure benefits males and females equally remains unanswered. Contrary to the findings of Woods and colleagues (1998), neither Marcks and colleagues (2007) nor Olufs and colleagues (2013) found that the sex of the individual with TS (i.e., portraying tics) significantly influenced the effects of disclosure of TS on social acceptability. Research examining the effects of observer (i.e., participant) sex is also equivocal. Both Marcks and colleagues (2007) and Olufs and colleagues (2013) found no relation between participant sex and participant ratings of social acceptability. However, Woods and Marcks (2005) reported that participant sex was associated with ratings of social acceptability, while the sex of the target individual performing tics (an actor) was unrelated.

**Limitations of previous research**

In addition to unresolved questions surrounding sex differences in social rejection of TS and the effect of disclosure on social acceptability, a major limitation of previous research investigating the relation between tics and social acceptability is the examination of only one level of tic severity. This limitation is specifically mentioned by Marcks and colleagues (2007) and alluded to by Olufs and colleagues (2013). The story vignette in Marcks and colleagues
(2007; see Appendix A for details) described the character’s tic symptomatology in a manner indicative of a severe presentation (e.g., “often makes unusual noises”, “frequently jerks neck”). The video used by Olufs and colleagues (2013) featured an actor displaying only severe tics (14 tics per minute) according to the definition used by Woods and colleagues (1998). This limitation leads to the question of whether self-disclosure is also an effective strategy towards reducing social rejection for those who display mild tics.

Tic severity is known to vary widely between individuals with TS, with a majority of the TS population experiencing mild symptoms (Robertson, 2011). In some cases, mild tics can be subtle to the point where they are largely unnoticed by others (Leckman et al., 2006). Thus, the social benefits of self-disclosure found by previous research can be extended only to a minority of the TS population. Although the strategy of self-disclosure may appear to be most relevant to those with severe tics, as they are most likely to be noticed, it may be that the effects of preventative self-disclosure on social rejection are different when tics are less noticeable to others. It is possible that disclosure of a TS diagnosis in absence of obvious symptoms will be self-defeating, i.e., that a person who displays no obvious tics but nonetheless discloses a behavioural condition may still invoke negative stigmatization associated with TS. To illustrate, an interaction effect is depicted in Figure 1 whereby disclosing TS when tics are absent decreases social acceptability relative to not disclosing, whereas disclosure reduces the social rejection (i.e., mitigates the decline in social acceptability) associated with mild and severe tics.

It is common for people to experience a stable decline in tic severity in the years following a diagnosis of TS, which often occurs in childhood. Tic severity is known to change over the lifespan, often peaking in late adolescence before steadily declining (Leckman et al, 2001). Approximately one third of children diagnosed with TS are asymptomatic by the time
they reach early adulthood (Bloch & Leckman, 2009). Thus, a substantial proportion of individuals who have previously received a TS diagnosis display no noticeable tics. However, evidence shows that social rejection is a stable social category (Bredgen et al., 2001; Coie et al., 1990). It is possible that even for individuals who have experienced a decline in their tics, their previous TS diagnosis remains as a part of their identity. It follows that, if a person outgrows their tics such that they become unnoticeable, it may be socially advantageous not to disclose their TS in order to avoid the risk of being socially rejected. As such, research should investigate whether the general disclosure approach advocated by Olufs et al. (2013) is also applicable for the substantial portion of the TS population whose tics are no longer obvious.

In summary, given limitations to previous research linking knowledge of TS to negative social judgments (e.g., rejection), it is important to consider whether the putative social benefits of universal disclosure will outweigh the potential detriments of negative social judgments arising from knowledge of a mental health condition. As such, studies investigating self-disclosure as an intervention for social rejection of persons displaying TS symptoms should explore the effects of self-disclosure across the full normal range of symptoms if results are intended to inform individuals’ decisions as to whether or not to disclose their TS.

**Hypotheses of the Current Study**

The general purpose of this study is to measure the effects of personal self-disclosure of Tourette syndrome (TS) on social acceptability at different levels of symptom (i.e., tic) severity. In other words, this study aims to explore whether previously discovered social benefits of disclosure exist throughout the typical range of TS symptoms. Four main hypotheses will be examined:
Hypothesis 1. Tic severity will negatively predict social acceptability. Confirming previous research, it was predicted that as tics increase in severity, social acceptability would decrease when disclosure of TS was not provided (see hypothesized results in Figure 1). In light of previous equivocal findings regarding an association between observer (i.e., participant) sex and ratings of social acceptability, sex differences were further examined. However, due to the inconsistency of previous findings, no specific predictions were made in the current study as to the direction of possible sex differences in social acceptance.

Hypothesis 2. Disclosure will moderate the relation between tic severity and decreasing social acceptability. While increased tic severity was expected to predict lower social acceptance (Hypothesis 1), disclosure of a TS diagnosis (versus not disclosing) was expected to reduce social rejection related to tics. However, a disclosure-moderated reduction of social rejection was not expected to occur at all levels of tic severity (see Hypothesis 3). As such, no main effect of disclosure was predicted. Consistent with the rationale for Hypothesis 1, main and moderating effects of sex were tested.

Hypothesis 3. Disclosure in absence of observable tics will decrease social acceptability compared with not disclosing. While it was expected that disclosure of a TS diagnosis would mitigate the negative effect of tic severity on social acceptability, the central hypothesis of the current study was that a non-linear relationship would emerge between tic severity and social acceptability when was TS disclosed. Stated differently, it was hypothesized that where tics were not observable, disclosure of a TS diagnosis would actually serve to decrease a person’s social acceptability relative to not disclosing. As for Hypothesis 1 and 2 above, sex differences were further examined.
METHOD

Participants

Participants in the current study were 346 (78% female) undergraduate students with a mean age of 20.2 years (2.45 SD) drawn from the subject pool of a university in Southwestern Ontario. The ethnic composition was predominantly (over 88%) White/Caucasian. All participants provided informed consent and were given course credit for their involvement. Male and female participants were randomly assigned to one of six severity/disclosure conditions in a 2 participant sex (male, female) X 3 actor symptom severity (none, mild, severe) X 2 actor disclosure (present, absent) between-subjects design. This study was granted ethical approval from the University Research Ethics Review Board.¹

Procedure

This study involves two parts. Participants first viewed a brief (approximately two minutes long) videotaped vignette, then completed a series of questionnaires. The vignette features a male actor portraying an undergraduate student during a short interview. The vignette’s script is based on a perspective-taking task developed by Davis, Conklin, Smith, and Luce (1996), but has been revised to the current topic of study (i.e., disclosure of Tourette syndrome; TS). Six different versions of the vignette, each using a common script, were created corresponding to each of the three symptom severity (none, mild, severe) and two disclosure (present, absent) conditions. Symptom severity for the mild and severe conditions was based on the parameters used by Woods and colleagues (1998; see Appendix A, Table 1 for a detailed description). The disclosure conditions were created by presenting one of two different endings in each of the three symptom severity conditions. Specifically, in the disclosure condition,

¹ January 23, 2015 (Certificate # 14NV036)
vignette concluded with an additional segment whereby the actor discloses a history of TS. After the video viewing task, participants completed questionnaires measuring the social acceptability of the actor and familiarity of TS symptomatology. Following completion of the questionnaires, all participants were debriefed regarding the study’s purpose. Males and females that were assigned to the no tic/nondisclosure condition comprised the study’s control groups. Responses by these control groups were considered to be baseline measurements of actor social acceptability.

This study utilized a male actor to portray TS symptomatology due to anticipated logistic restrictions in data collection; adequate measurement of sex effects due to the actor (i.e., whether males and females are perceived differently under the conditions in this study) would require double the amount of participants \( n = 480 \) in order to retain statistical power for subsequent analyses, and we believe that it would be difficult to recruit such numbers in the timeframe required for completing this study. Due to the higher number of males affected with TS than females (4:1; Freeman et al., 2000), a male actor was chosen as the “typical” individual with TS.

In this study, mild tics were operationally defined as occurring at the rate of 2 tics per minute, with arm movements originating approximately one inch (~2.5 cm) from the performer’s body, while severe tics occurred at the rate of 12 tics per minute, with arm movements originating approximately five inches (~12.5 cm) from the performer’s body. A complete operational definition of tic behaviour for the current study, adapted from Woods, and colleagues (1998), can be seen in Table 2. Previous research examining actual TS populations supports the authenticity of this definition (Woods et al., 2008).
Measures

*Social Acceptability.* Social acceptability (versus social rejection) was measured using the Social Acceptance Scale (SAS; Woods et al., 1997). The SAS is a 15-item questionnaire developed as a specific measure of social acceptability for individuals with habit disorders, such as TS. Participants rate the social acceptability of the actor on a 7-point Likert-type scale ranging from 1 (*very untrue*) to 7 (*very true*), with higher numbers reflecting a more positive evaluation. A sample item reads, “How much do you think you would want this person as your friend?” Past research examining the psychometric properties of the SAS found that this scale has adequate internal consistency ($\alpha = .88$; Woods et al., 1997), 1-week test-retest reliability ($r = .87$; Long et al., 1999), and predictive and concurrent validity. Cronbach’s alpha in the current sample was .86.

*Number of tics observed.* As a manipulation check, participants were asked to indicate the number of tics they saw the actor perform.

*Demographics.* Participants identified their age, sex, and ethnicity.

Analytic Strategy

*Preliminary analyses.* Data from both dependent variables examined in this study, social acceptability and number of tics observed, were tested for normality by examining skewness and kurtosis. Data with skewness or kurtosis coefficients (i.e., the ratio of the skewness/kurtosis to the standard error of skewness/kurtosis) greater than 2 were considered as non-normal.

The manipulation check of condition was conducted by correlating tic severity with number of tics observed, with the expectation that a positive, linear relationship would emerge (i.e., participants would see more tics with increasing severity condition). As tic severity in the present study was constructed as an ordinal variable, a nonparametric (Spearman’s) correlation
was determined to be the most appropriate method for this analysis. It should be noted that while tic severity in everyday life is likely a continuous variable, the current study design required artificial categories of severity to be created for the purpose of analysis.

Further to the manipulation check, an ANOVA was conducted for the purpose of comparing the number of tics observed across groups. The main intention of the ANOVA was to determine whether the manipulation check was consistent for males and females (i.e., whether males and females reported seeing different numbers of tics). For the sake of consistency, all ANOVA results throughout the study were reported as \( F \)-statistics when assumptions of normality and equality of variance were met. Comparisons using data which violated the equality of variance assumption were reported as \( t \)-statistics with unequal variances assumed.

**Hypothesis 1.** Previous research compared social acceptability ratings between two levels of tic severity, along with several other independent variables of interest, using an omnibus analysis (Woods et al., 1998). In the current study, a negative, linear relation between tic severity and social acceptability was predicted across the three severity conditions, whereby social acceptability would decrease steadily with each increasing severity condition. As such, a linear model would likely be more appropriate in detecting this predicted relation than an omnibus comparison of groups. Additionally, an understanding of the degree of the relation would be informative regarding the extent to which tic severity influences social acceptability. Accordingly, a correlational analysis was chosen to examine the relation between tic severity and social acceptability. Furthermore, a correlation would be more sensitive, and thus more powerful in detecting an effect, than an omnibus measure (e.g., ANOVA) in that the correlation would use a larger \( n \) (i.e., number of participants are collapsed across severity conditions) than the number of participants within to each cell to be compared in an omnibus test. Consistent with the
rationale for the manipulation check involving number of tics, Spearman’s rho was chosen for this analysis.

*Hypothesis 2.* An omnibus test approach was chosen to investigate the presence of moderation and interaction effects of disclosure of TS, participant sex, and tic severity on social acceptability. Additionally, while a linear relation was predicted between tic severity and social acceptability in the non-disclosure condition (Hypothesis 1), linearity was not specifically predicted in the disclosure condition (see Figure 1). As such, an ANOVA was determined to be the appropriate course of analysis for comparing differences in social acceptability ratings between each of 12 groups and for detecting potential linear and non-linear relationships within the independent variables.

Additional to the main hypothesis that disclosure will moderate the relation between tic severity and decreasing social acceptability (i.e., disclosure would increase social acceptability), planned comparisons were further conducted in order to investigate hypothesized sex differences. The purpose of these planned comparisons was to address equivocal results from past studies concerning the influence of sex on social acceptance. As such, the effect of disclosure was examined separately for males and females within each level of tic severity in order to investigate potential sex differences as thoroughly as possible. In other words, planned comparisons of sex were conducted independently of results from the main ANOVA.

*Hypothesis 3.* Following from the ANOVA used to test Hypothesis 2, the simple main effect of disclosure in the no tics condition was examined to test the specific prediction that disclosure of TS in absence of tics would actually decrease social acceptability (see Figure 1). This analysis was carried out as a planned comparison, both combined and separately by sex.
RESULTS

Preliminary Analyses

Initial analyses of normality indicated that social acceptability scores were normally distributed (i.e., skewness/kurtosis coefficients less than 2) in each of the 12 groups (see Table 3). Thus, normality appears to be an acceptable assumption for the social acceptability data.

Significant skewness and kurtosis were evident across groups for number of tics observed (see Table 2), indicating that the normality assumption was violated for these data.

Spearman’s rho was used to confirm manipulation across the three tic severity conditions, given both the lack of normality in the observed number of tics, and the ordinal (i.e., non-continuous) nature of tic severity. Participants reported an increase in the observed number of tics as the actual number of actor-produced tics increased over the none, mild, and severe conditions (see Tables 1 & 2). Examined as simple zero-order correlations, the number of observed tics was strongly associated with severity condition (none = 0, mild = 1, severe = 2) in both the disclosure and nondisclosure conditions, \( r_s = .64 \) and \( .54, p_s < .001 \), respectively.

A 2 sex (male, female) X 3 tic severity (none, mild, severe) X 2 disclosure (none, disclosure) between-subjects ANOVA was subsequently conducted to examine group differences in the number of tics observed. Levene’s test was significant, \( F(11, 331) = 9.23, p < .001 \), indicating that variances were not equal across groups. Overall, males and females observed similar numbers of tics across tic severity and disclosure conditions, \( t(98.6) = .67, p = .51 \). While males \( (M = 19.5, SD = 12.9) \) reported more tics than did females, \( (M = 11.6, SD = 7.6) \) in the severe tics/nondisclosure condition, this difference was not significant, \( t(11.7) = 1.95, p = .08 \). It should be noted that significant skewness and kurtosis existed within this condition (see Table 2).
Mean baseline measurements of the actor’s social acceptability (i.e., in the, no tic/nondisclosure) were 4.4 ($SD = .75$) and 4.5 ($SD = .78$), for males and females on a 7-point Likert scale, respectively. That is, participants generally viewed the actor as a “typical” student when he neither displayed tics nor disclosed a diagnosis of TS. When participants were asked to report how many tics they had seen in the no tic condition, both males, $M = 3.4$ ($SD = 3.5$), and females, $M = 3.6$ ($SD = 3.6$), reported seeing almost as many tics as the actor actually displayed in the mild tic condition (4 tics, see Table 2).

**Hypothesis 1. Tic severity will negatively predict social acceptability.**

A series of Spearman’s rank-order correlations were performed to determine the relation between tic severity and social acceptability in the nondisclosure condition. Overall, tic severity did not negatively predict social acceptability, $r_s(171) = -.07, p = .39$. Anticipating sex differences, further analyses were conducted separately by sex. A trend emerged for males whereby the actor was perceived as less socially acceptable (i.e., males demonstrated greater social rejection) with increasing tic severity in the nondisclosure condition, $r_s(40) = -.18, p = .28$. In contrast, females’ ratings of social acceptability did not decrease with actor tic severity, but remained relatively constant across severity conditions, $r_s(131) = -.05, p = .57$. Given the visually apparent non-linear shape of the relation between tic severity and social acceptability for males whereby social acceptance decreases sharply in the severe condition (see Figure 2), further results will be discussed in conjunction with the second hypothesis below.

**Hypothesis 2. Disclosure will moderate the relation between tic severity and decreasing social acceptability.**

It was expected that increasing actor tic severity would result in decreased social acceptability ratings (per Hypothesis 1 above), but that this decrease would abate in conjunction
with self-disclosure of TS. As such, further Spearman’s rank-order correlations were performed to examine the linear relation between tic severity and social acceptability in the disclosure condition. Overall, the relation between tic severity and social acceptability in the disclosure condition was not significant, $r_s(175) = .11, p = .14$, although it is worth noting that the magnitude of the relation did increase slightly from that in the nondisclosure condition. Examining separately by sex, the same trend can be seen for males, $r_s(36) = .28, p = .10$, and females, $r_s(139) = .07, p = .41$, whereby the magnitude of the relation increased even though the relation itself was not significant. In both combined- and separate-sex analyses, the direction of the relation changed from negative in the nondisclosure conditions (i.e., social acceptability decreased as tic severity increased), to positive in the disclosure conditions (i.e., social acceptability increased as tic severity increased).

To further examine the hypothesized moderation effect of preventative self-disclosure, a 2 sex (male, female) X 3 tic severity (none, mild, severe) X 2 disclosure (none, disclosure) between-subjects ANOVA was conducted with social acceptability as the dependent variable. Overall, significant differences in social acceptability were found between groups, $F(11, 334) = 1.92, p = .036, \eta_p^2 = .059$. Significant main effects were observed for disclosure, $F(1, 334) = 6.54, p = .011, \eta_p^2 = .019$, and participant sex, $F(1, 334) = 3.91, p = .049, \eta_p^2 = .012$, but not for tic severity, $F(2, 334) = .00, p = 1.00, \eta_p^2 = .000$. Two-way interactions between tic severity and disclosure, $F(2, 334) = 1.48, p = .23, \eta_p^2 = .009$, tic severity and participant sex, $F(2, 334) = .17, p = .85, \eta_p^2 = .001$, and disclosure and participant sex, $F(1, 334) = .00, p = .99, \eta_p^2 = .000$, were not significant. The three-way interaction between tic severity, disclosure, and participant sex was not significant, $F(2, 334) = 1.62, p = .20, \eta_p^2 = .010$. 
Given the difficulty in finding 3-way interactions, and considering previously recognized sex differences (e.g., Woods & Marcks, 2005), follow-up planned comparisons were conducted within each level of tic severity (none, mild, severe). Social acceptability ratings between disclosure and nondisclosure conditions were compared separately by sex. Results confirmed a moderating effect for disclosure, however this depended on the level of tic severity and the sex of the participant rater (see Figure 2). For males, disclosure of TS moderated social acceptability ratings by decreasing the actor’s social rejection (i.e., increasing social acceptability), but not until the tic symptoms were presented at a severe level, \( F(1, 334) = 5.66, p = .018, \eta^2_p = .017 \). Males’ social acceptability ratings of the actor were unaffected by disclosure in the mild symptom conditions, \( F(1, 334) = .01, p = .93, \eta^2_p = .000 \). In contrast, disclosure increased females’ social acceptance of the actor at the mild level of tic symptoms relative to nondisclosure, \( F(1, 334) = 8.10, p = .005, \eta^2_p = .024 \). A simple main effect of disclosure approached significance for females in the severe tics condition, \( F(1, 334) = 2.56, p = .11, \eta^2_p = .008 \). Participant ratings of social acceptability in the no tics condition are reported below in results for Hypothesis 3.

In summary, results indicated that both males and females were less socially rejecting of the actor’s tic behaviours where there was a disclosure of TS, compared to where no disclosure was made. As a result of the actor’s disclosure, mean social acceptability ratings for males and females increased to a similar level, \( Ms = 4.88 (SD = .12) \) and \( 4.76 (SD = .22) \), respectively. Females, however, responded by the mild tic condition, whereas the moderation effect was not found for males until the severe condition.
Hypothesis 3. Disclosure in the no symptom severity condition will decrease social acceptability relative to not disclosing.

Central to the current study was an examination of whether disclosure of a TS diagnosis where there were no tics presented, might actually decrease social acceptability relative to nondisclosure. Overall, disclosure did not decrease social acceptance compared with not disclosing a TS diagnosis where no tics were actually presented, $F(1, 334) = .37, p = .55, \eta^2_p = .001$. Examining separately by sex, disclosure did not decrease social acceptance in the no tic condition for either males, $F(1, 334) = .13, p = .72, \eta^2_p = .000$, or females, $F(1, 334) = .33, p = .57, \eta^2_p = .001$ (see Figure 2).

DISCUSSION

The general aim of the current study was to examine the effect of disclosure of Tourette syndrome (TS) on the social acceptability of individuals whose tics are negligible or mild. While hypotheses were largely supported, social acceptability was not found to decrease with disclosure in absence of observable tics.

H1. Tic severity will negatively predict social acceptability.

First, and partially confirming previous research, it was expected that tic severity would predict decreased social acceptability (i.e., increased social rejection). Overall, no main effect of tic severity was observed for social acceptability. When examined separately by sex, males’ ratings of actor social acceptability decreased as tic severity increased, indicated by a nonsignificant trend. Females’ social acceptability ratings did not decrease with increasing tics, remaining stable across severity conditions. Female participants were equally accepting of the actor at all levels of tic severity when he did not disclose a prior diagnosis of TS, indicating that they viewed him as a “typical” student regardless of any unexplained TS symptoms. This result
is in contrast to the finding of Woods et al. (1998), who reported an overall negative relationship between tic severity and social acceptability that was not affected by participant sex. In light of the well-established relationship between the observation of tics and social rejection, it is not clear why the findings of Woods et al. (1998) were not replicated in current study.

With respect to the trend for sex differences seen in the current study, results add to the existing and rather ambiguous picture about the nature of sex differences in observers’ evaluations of social acceptability for individuals displaying tics. Two of the three studies investigating the negative impact of tics on social acceptability (i.e., social rejection) found no significant effect of participant sex (Marcks et al., 2007; Olufs et al., 2013). The third study, by Woods and Marcks (2005), included participant sex as a covariate in an omnibus analysis of the effects of several different types of educational interventions on social acceptability, although they did not quantitatively report this covariance. As such, it is difficult to interpret the present results within the context of previous findings. Although some social psychology research has found that same-sex peers are rated as more acceptable than opposite-sex peers (Friman et al., 1993; Wisely & Morgan, 1981), results from the present study suggested the opposite such that when tic severity increased, males became more socially rejecting than females of the male actor.

The reason for the sex differences observed in the current study is not clear. One explanation might be that females are generally less socially judgmental than males. Abundant research indicates that males tend to hold more negative attitudes towards peers with disabilities than females (McDougall et al, 2004; Rosenbaum, Armstrong, & King, 1988). Future studies should continue to investigate whether the same holds true regarding individuals with TS.
H2. Disclosure will moderate the relation between tic severity and decreasing social acceptability.

It was predicted that the relation between tic severity and decreasing social acceptability would be moderated by disclosure of TS. Results confirmed this prediction for males, whereby social acceptance of the actor increased significantly with disclosure when tics were severe, compared with increasing social rejection in the nondisclosure condition. Interpretation of the results for females appears somewhat more complicated, as females’ social acceptance increased significantly from baseline given disclosure at a milder level of tics (i.e., in the mild tics condition), but did not decline from baseline in any of the conditions.

In general, males tended to be socially rejecting of the actor when TS was not disclosed but socially accepting when TS was disclosed, at a level of acceptance similar to females’. Specifically, males tended to socially reject the actor when portraying severe tics if he did not disclose a TS diagnosis. Conversely, males’ social acceptance of the actor increased with nearly equal magnitude given disclosure when tics were severe. A non-significant trend was found whereby, in the presence of severe tics, social acceptability increases sharply from the mild tics condition to the severe tics with disclosure and decreases sharply from the mild tics condition to the severe tics without disclosure. Moreover, disclosure had no effect on social acceptability in the no tics and mild tics condition, indicating that males do not seem to evaluate the actor differently when he discloses TS if tics are unnoticeable.

Overall, these results were partly consistent with past findings whereby disclosure decreased social rejection of the individual performing tics (e.g., Marcks et al., 2007; Olufs et al., 2013), except that in the present study, disclosure seemed to cause the actor to be even more socially acceptable when he displayed severe tics than when he displayed no tics. The medium
effect size of disclosure in the present study suggests that, at least for the population studied (university students), disclosing TS may facilitate social affiliation with the discloser to a small degree. It is interesting to note that social acceptability was highest for males observing severe tics when the actor disclosed TS. The observed results are difficult to interpret in the context of previous research, as no study has previously examined the moderating effect of disclosure on social acceptability at more than one level of tic severity. For example, neither Marcks et al. (2007) nor Olufõ et al. (2013) used a “no tic” condition in their study design. Future studies replicating the current design may be able to confirm or disconfirm the moderation effect of disclosure observed for males. It is likely that, due to the small number of males per cell (ranging from 6 to 16; see Table 3), statistical power in the analyses involving males was not sufficient to detect significant effects that may exist in the TS population. Based on Cohen’s (1992) reported guidelines for determining adequate statistical power, the omnibus analyses conducted in the present study required at least 32 individuals per cell in order to detect a medium effect size (power = .8, $\alpha = .05$). As such, future studies should ideally include a greater number of male participants in order to increase statistical power lacking in the present research.

As mentioned in Hypothesis 1, females did not socially reject the actor as tics increased in severity (i.e., from the no tic to severe tic conditions) without disclosure. When the actor did disclose, females’ social acceptance increased significantly compared with nondisclosure, but only when tic severity was mild. When tics were severe, the difference in females’ social acceptance between the disclosure and nondisclosure conditions approached significance. In other words, it is apparent that the moderation effect of disclosure emerged at a lower level of tic severity for females than for males, whereby females’ social acceptance increased in the mild condition before levelling off in the severe condition, even though the effect of disclosure in the
severe condition was not significant. It is possible that including a greater number of female participants may have resulted in a significant moderation effect for disclosure given severe tics. Overall, these results suggest that disclosure has a significant effect for females’ social acceptance, although further research is needed to establish the significance of this trend in the presence of severe tics. Similar to males, results for females are partially consistent with past research in that disclosure of TS improves social acceptability. However, self-disclosure appeared to increase social acceptance for females even above baseline ratings, rather than mitigate tic-related social rejection in the manner observed for males in the current study and described by previous research.

In short, a clear difference between males and females was observed with respect to how disclosure moderates the relation between tic severity and social acceptability. One explanation for this difference might be that females are more “sensitive” in responding to disclosure than males. As mentioned previously, neither males’ nor females’ social acceptance were significantly affected by disclosure in the no symptom condition (i.e., when tics were not observable; Hypothesis 3). However, females became significantly more socially accepting of the actor in the presence of mild tics, whereas males’ social acceptance was not affected either way (that is, neither socially accepting nor socially rejecting) until faced with severe tics. A general explanation for the greater “sensitivity” of females’ social acceptance to disclosure may be that social acceptance is associated with other factors, such as liking, that are known to increase with self-disclosure (Collins & Miller, 1994). The relation between liking and self-disclosure has been shown to be more robust for females than for males (Dindia & Allen, 1992). It follows that, in the current study, the more pronounced effect of disclosure on females’ social acceptance versus males’ may reflect greater liking experienced by females in conjunction with
disclosure. Such a conclusion cannot be firmly drawn because liking was not explicitly measured in this study. However, an association between liking and social acceptance can be inferred as some of the questions from the social acceptance scale included loose measures of liking, e.g., “How much do you think you would want this person as your friend?” and “How much do you think you would like this person?”. To test this explanation, future research should investigate the effects of related variables, such as liking, on the interaction between observer sex and social acceptability of individuals with TS.

In summary, disclosure of TS increases social acceptance for both males and females, although females’ social acceptance improves at a milder level tic expression than males’. Additionally, failure to disclose when tics are severe increases males’ social rejection. These findings suggest some implications of clinical importance. Overall, self-disclosure appears to be a beneficial social strategy when trying to manage others’ social judgments surrounding TS symptoms (i.e., tics). In line with previous research on self-disclosure (e.g., Olufs et al., 2013), results appear to encourage persons with TS, who might worry that their tics will arouse negative reactions from others, to disclose their TS in order to pre-empt potential social rejection. This advice may be particularly applicable when interacting with males, who appear likely to socially reject an individual with severe tics if TS is not disclosed.

**H3: Disclosure in the none and/or mild symptom severity condition will decrease social acceptability relative to not disclosing.**

Central to the current study, it was predicted that at no symptom and mild levels of tic severity, disclosure would actually undermine actor social acceptability by providing knowledge of a stigmatizing mental health condition, i.e., Tourette syndrome (TS) to observers. Our findings did not support this. Contrary to our prediction, disclosure of TS had no effect on either male or
female participants’ social acceptance of the actor. Furthermore, females’ ratings of actor social acceptability actually increased in the mild condition when disclosure was provided (Hypothesis 2). Such results imply that self-disclosure – at any degree of tic severity – is a safe strategy. In other words, social acceptability will not be affected if one discloses tics in absence of symptoms, suggesting that while there is no clear benefit to doing so, no risk to social acceptability exists either. One caveat to this interpretation is the potential influence of the context under which disclosure is made. Previous studies have cautioned against disclosing personal information under inappropriate circumstances, suggesting that sharing “too much, too soon” may increase the risk to the discloser of negative social evaluations (Altman & Taylor, 1973). Often, strict social norms dictate which circumstances are appropriate or inappropriate for disclosure (Derlega & Grzelak, 1979). In the current study, the actor disclosed his previous diagnosis of TS within the context of an interview whereby he shared personal reflections about his recent experiences as a university student. The lack of negative response (i.e., social rejection) to disclosure in the current study implies that the participants, who were also students, found the actor’s disclosure to be contextually appropriate. Future studies should explore the extent to which the context of disclosure (e.g., relevance of disclosure to interaction, etc.) moderates the relation between disclosure and social acceptability.

Notwithstanding these results, an argument against providing disclosure where there are no or very few symptoms may yet be made from the current findings, albeit indirectly. Although no direct evidence supported the hypothesis that disclosure is self-defeating where there were no tic behaviours (analogous to unnoticeable tics in everyday life), results from the manipulation check indirectly suggest the presence of potentially undesirable social consequences. When participants were asked, “How many tics would you say that you saw the interviewee perform?”,
those assigned to the no symptom condition reported seeing an average of nearly four tics during
the course of the video segment (comparable to the number of tics actually displayed in the mild
condition), even though no tics were in fact performed by the actor. It is possible that including
this question created a demand characteristic and a press for participants to report that they
observed tics that were in fact not present. In essence, it may be the case that observers became
sensitized to the presence of tics when asked to remember how many they saw, causing them to
incorrectly perceive the actor’s TS symptoms as being more severe than they actually were. By
analogy, it could be that self-disclosure of a TS diagnosis could create a demand characteristic in
which observers see “odd” behaviours that might otherwise not be seen as odd. Thus, given what
is known about the association between the observation of tics and social rejection, participants’
ratings of social acceptability in the current study may not have represented the entirety of
potential negative outcomes. While not a direct test of the current study’s main hypothesis, these
findings speak to the possibility that disclosing a TS diagnosis could result in observers “seeing”
more tics than are actually present. Although this increased perception did not explain tic
severity effects on social acceptability in the current study, future research should examine the
social consequences of sensitized perception of tic behaviour.

**Limitations and Future directions.**

Several limitations bear mention in the current study. First, the study sample included a
proportionally low number of male participants ($n = 76$). As such, the low number of males per
cell likely compromised the statistical power of analyses examining male participants. Future
studies should attempt to replicate the current findings using a higher number of male
participants.
Second, no female actor was used to demonstrate tics, as previously mentioned in the study’s procedure. Although the decision to use only a male actor as the “typical” individual with TS was justified on logistical grounds (i.e., adding an additional cell to a limited participant sample), useful comparative data may be gained by including a female actor. Furthermore, the question of whether the sex of an individual with TS influences social acceptability remains unanswered by previous research. Future studies should attempt to replicate the current methodology incorporating a female actor to explore possible actor sex effects on social acceptability.

Third, the current findings and their implications may be limited to the young, Canadian, university population, as the study’s sample consisted entirely of undergraduate students from a single university. It is possible that self-disclosure and tic severity may effect social acceptance differently in a workforce or grade school population, or a population not educated in a Western, postsecondary setting. Indeed, a substantial body of social psychology literature argues that results from many studies that have sampled from undergraduate student populations are not readily generalizable to other populations, even when the research question may seem broadly applicable (Henrich, Heine, & Norenzayan, 2010). The same may be true for studies investigating the effects of self-disclosure of TS. Previous studies investigating disclosure as an intervention to improve social acceptability of individuals with TS also used undergraduate samples (Marcks et al., 2007; Olufs et al., 2013). Future research should explore this topic in populations representing other facets of society.

Fourth, it may be that latent personal characteristics of the actor used in the present study contributed to participants’ ratings of social acceptability. Stated differently, the use of only one actor in this study raises the question of whether current findings generalize to other individuals.
with TS. From the results, it is not clear to which extent participants, both female and male, are providing ratings that reflect their impressions of this particular actor (attractiveness, behavioural mannerisms other than tics, etc.). Future studies should employ a variety of different actors to control for latent confounding effects of individual actor characteristics.

These limitations aside, results from the current study lend support to a growing body of research that supports self-disclosure as an effective strategy to reduce negative social judgements associated with TS symptoms.
REFERENCES


doi:10.1176/appi.books.9780890423349


doi:10.1037//0033-2909.112.1.155


http://dx.doi.org/10.12968/hmed.2011.72.2.100


Table 1.
*Behavioural operationalization of tic severity (adapted from Woods et al., 1998).*

<table>
<thead>
<tr>
<th>Condition (tic severity)</th>
<th>Frequency* (tics per min.)</th>
<th>Range of Movements (motor tics)</th>
<th>Vocal Tics</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>0</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Mild</td>
<td>2</td>
<td>Half grimace begins 1 in. from the body</td>
<td>Soft “Uh!”</td>
</tr>
<tr>
<td>Severe</td>
<td>12</td>
<td>Half grimace begins 5 in. from the body</td>
<td>Loud “Uh!”</td>
</tr>
</tbody>
</table>

* represents an average equal number of motor and vocal

** head and shoulder on same side of body twitch towards each other
Table 2.

Descriptive and Normality Data for Number of Tics Observed by Condition.

<table>
<thead>
<tr>
<th>Disclosure</th>
<th>Tic Severity</th>
<th>n</th>
<th>Mean Number of Tics Observed(^1)</th>
<th>Skewness(^2)</th>
<th>Kurtosis(^2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Males</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>None</td>
<td>15*</td>
<td>3.4 (3.5)</td>
<td>1.52 (.58)(^+)</td>
<td>1.96 (1.12)(^+)</td>
</tr>
<tr>
<td></td>
<td>Mild</td>
<td>13</td>
<td>5.3 (3.6)</td>
<td>1.48 (.62)(^+)</td>
<td>3.84 (1.19)(^+)</td>
</tr>
<tr>
<td></td>
<td>Severe</td>
<td>11</td>
<td>19.5 (12.9)</td>
<td>1.49 (.66)(^+)</td>
<td>2.53 (1.28)(^+)</td>
</tr>
<tr>
<td>Yes</td>
<td>None</td>
<td>16</td>
<td>4.4 (7.0)</td>
<td>2.05 (.56)(^+)</td>
<td>4.45 (1.09)(^+)</td>
</tr>
<tr>
<td></td>
<td>Mild</td>
<td>6</td>
<td>6.0 (3.1)</td>
<td>.79 (.85)</td>
<td>-.14 (1.74)</td>
</tr>
<tr>
<td></td>
<td>Severe</td>
<td>13*</td>
<td>13.6 (10.7)</td>
<td>.96 (.62)</td>
<td>-.31 (1.19)</td>
</tr>
<tr>
<td>Females</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>None</td>
<td>41</td>
<td>3.6 (3.6)</td>
<td>1.22 (.37)(^+)</td>
<td>1.48 (.72)(^+)</td>
</tr>
<tr>
<td></td>
<td>Mild</td>
<td>43</td>
<td>4.6 (3.9)</td>
<td>2.01 (.36)(^+)</td>
<td>5.89 (.71)(^+)</td>
</tr>
<tr>
<td></td>
<td>Severe</td>
<td>47</td>
<td>11.6 (7.6)</td>
<td>.55 (.35)</td>
<td>-.60 (.68)</td>
</tr>
<tr>
<td>Yes</td>
<td>None</td>
<td>43</td>
<td>3.6 (6.1)</td>
<td>2.65 (.36)(^+)</td>
<td>8.44 (.71)(^+)</td>
</tr>
<tr>
<td></td>
<td>Mild</td>
<td>52</td>
<td>5.6 (3.6)</td>
<td>1.86 (.33)(^+)</td>
<td>4.17 (.65)(^+)</td>
</tr>
<tr>
<td></td>
<td>Severe</td>
<td>43*</td>
<td>16.1 (8.3)</td>
<td>.23 (.36)</td>
<td>-.94 (.71)</td>
</tr>
</tbody>
</table>

Notes.
1 \((SD)\) = standard deviation
2 \((SE)\) = standard error of skewness / kurtosis
\(^+\) denotes significant result
* indicates number of participants that provided a response to item (as opposed to number of participants assigned to condition)
Table 3.

Descriptive and Normality Data for Social Acceptability by Condition.

<table>
<thead>
<tr>
<th>Disclosure</th>
<th>Tic Severity</th>
<th>n</th>
<th>Mean Social Acceptability Ratings(^1)</th>
<th>Skewness(^2)</th>
<th>Kurtosis(^2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Males</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>None</td>
<td>16</td>
<td>4.37 (.75)</td>
<td>1.00 (.56)</td>
<td>1.80 (1.09)</td>
</tr>
<tr>
<td></td>
<td>Mild</td>
<td>13</td>
<td>4.38 (.77)</td>
<td>.54 (.62)</td>
<td>-.83 (1.19)</td>
</tr>
<tr>
<td></td>
<td>Severe</td>
<td>11</td>
<td>3.96 (1.21)</td>
<td>.21 (.66)</td>
<td>-.54 (1.28)</td>
</tr>
<tr>
<td>Yes</td>
<td>None</td>
<td>16</td>
<td>4.48 (.57)</td>
<td>.88 (.56)</td>
<td>-.50 (1.09)</td>
</tr>
<tr>
<td></td>
<td>Mild</td>
<td>6</td>
<td>4.34 (.53)</td>
<td>-.09 (.85)</td>
<td>1.30 (1.74)</td>
</tr>
<tr>
<td></td>
<td>Severe</td>
<td>14</td>
<td>4.76 (.67)</td>
<td>.12 (.60)</td>
<td>-.43 (1.15)</td>
</tr>
<tr>
<td>Females</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>None</td>
<td>41</td>
<td>4.51 (.78)</td>
<td>-.10 (.37)</td>
<td>.10 (.72)</td>
</tr>
<tr>
<td></td>
<td>Mild</td>
<td>43</td>
<td>4.38 (.87)</td>
<td>-.02 (.36)</td>
<td>.38 (.71)</td>
</tr>
<tr>
<td></td>
<td>Severe</td>
<td>47</td>
<td>4.49 (.99)</td>
<td>.58 (.35)</td>
<td>-.38 (.68)</td>
</tr>
<tr>
<td>Yes</td>
<td>None</td>
<td>43</td>
<td>4.62 (.86)</td>
<td>.38 (.36)</td>
<td>-.03 (.71)</td>
</tr>
<tr>
<td></td>
<td>Mild</td>
<td>52</td>
<td>4.88 (.85)</td>
<td>.13 (.33)</td>
<td>-.09 (.65)</td>
</tr>
<tr>
<td></td>
<td>Severe</td>
<td>44</td>
<td>4.77 (.76)</td>
<td>.26 (.36)</td>
<td>-.74 (.70)</td>
</tr>
</tbody>
</table>

Notes.
\(^1\) \((SD)\) = standard deviation
\(^2\) \((SE)\) = standard error of skewness / kurtosis
++ denotes significant result
Table 4.

*Spearman Rank Correlations for Tic Severity and Social Acceptability by Participant Sex and Disclosure.*

<table>
<thead>
<tr>
<th>Disclosure</th>
<th>n</th>
<th>$r_s$</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Males</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>40</td>
<td>-.18</td>
<td>.28</td>
</tr>
<tr>
<td>Yes</td>
<td>36</td>
<td>.28</td>
<td>.10</td>
</tr>
<tr>
<td>Females</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>131</td>
<td>-.05</td>
<td>.57</td>
</tr>
<tr>
<td>Yes</td>
<td>139</td>
<td>.07</td>
<td>.41</td>
</tr>
<tr>
<td>Overall</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>171</td>
<td>-.07</td>
<td>.39</td>
</tr>
<tr>
<td>Yes</td>
<td>175</td>
<td>.11</td>
<td>.14</td>
</tr>
</tbody>
</table>
Figure 1. Hypothesis 1: Social acceptance decreases with symptom (tic) severity in the NonDisclosure condition (open square). Hypothesis 2: Social acceptability decreases less in the Disclosure condition (closed square). Hypothesis 3: Qualifying Hypothesis 2, there is a decrease in social acceptance in the Disclosure condition where there are no symptoms (see ellipse above).

Figure 1
Figure 2. Participant ratings of social acceptability as a function of tic severity, disclosure, and participant sex. While the full measure of social acceptability ranges from 0-7, the presented scale (y-axis) reflects the range of participants responses.
APPENDIX A.

Measures.

Open-ended Questionnaire

1. What was your general impression of this person?
Social Acceptance Scale

Instructions. Please complete the following questionnaire based on the person in the videotape you just watched.

1. How much do you think you would want this person in a class with you?
   
   1  2  3  4  5  6  7
   
   very much  not at all

2. How much do you think you would want to sit next to this person in class?
   
   1  2  3  4  5  6  7
   
   not at all  very much

3. How smart do you think this person is?
   
   1  2  3  4  5  6  7
   
   very smart  not smart at all

4. How much do you think you would want this person as your friend?
   
   1  2  3  4  5  6  7
   
   not at all  very much

5. How much would you want this person to live next door to you?
   
   1  2  3  4  5  6  7
   
   very much  not at all

6. How fun do you think this person is?
   
   1  2  3  4  5  6  7
   
   not at all fun  very fun

7. How happy do you think this person is?
   
   1  2  3  4  5  6  7
   
   very happy  not happy at all

8. How attractive do you think this person is?
   
   1  2  3  4  5  6  7
   
   not at all attractive  very attractive

9. How much do you think you would like this person?
   
   1  2  3  4  5  6  7
   
   very much  not at all

10. How much do you think you would want to socialize with this person?
    
    1  2  3  4  5  6  7
    
    not at all  very much
11. How natural did you think this person looked?
   1 2 3 4 5 6 7
   very natural  very unnatural

12. I thought this person was...
   1 2 3 4 5 6 7
   not handicapped  handicapped

13. How relaxed did you think this person looked?
   1 2 3 4 5 6 7
   very relaxed  very tense

14. How approachable did you think this person looked?
   1 2 3 4 5 6 7
   not at all approachable  very approachable

15. How comfortable did you think this person looked?
   1 2 3 4 5 6 7
   very comfortable  very uncomfortable
Explicit Questionnaire

A tic is a type of movement or vocalization, usually spastic in nature, that appears as unusual behaviour and serves no useful purpose. Tics can be simple (like a twitch) or complex (like a coordinated movement).

1. How many tics would you say that you saw the interviewee perform? _________
Demographics

1. What is your gender? □ Male □ Female □ Other

2. What is your current age? ______

3. Which of the following best describes your ethnicity? (Check as many as apply)

□ European /White
□ Black/African/Caribbean
□ Latin, (Costa Rican, Mexican, Honduran, etc.)
□ Southeast Asian (Chinese, Japanese, Korean, etc.)
□ West Asian (Iranian, Afghani, etc.)
□ South Asian (East Indian, Pakistani, etc.)
□ Aboriginal/First Nations/Métis
□ Arab (Iraqi, Jordanian, etc.)
□ Other, please specify: ___________
Script for video vignette (adapted from Davis et al., 1996)

Legend:

<table>
<thead>
<tr>
<th>R = Respondent</th>
<th>I = Interviewer</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Tics:</strong></td>
<td></td>
</tr>
<tr>
<td>Vocal, simple = VS</td>
<td>Motor, arm/hand = MA</td>
</tr>
<tr>
<td>Vocal, complex = VC</td>
<td>Motor, shoulder/head = MS</td>
</tr>
<tr>
<td>Motor, facial = MF</td>
<td></td>
</tr>
</tbody>
</table>

SCENARIO: None = 0 tics per min.

I: And how about socially? How do you think you’ve adjusted so far to university life?

R: Well things are pretty good, I go out a fair amount, and parties in here are usually great compared to the ones in high school.

I: Why do you say “usually”?

R: Well I don’t know, I’ve never really considered myself a shy person; I’ve had my fair share of friends and I’ve gone to parties before. But sometimes it’s different here. I guess the parties are so big and it’s impossible to know everyone like in high school. Like last week, I went to this huge party and I don’t think I knew three people there. I just felt so weird... and self-conscious, like I really stuck out, you know? Some people just seem able to go out to a party and not know anybody, and make themselves feel really comfortable. Just like they were with their friends; but it’s not quite that easy for me. Like I said before I don’t think I’m shy, I’m just more comfortable with good friends – and I can be myself, you know? More outgoing.

I: Have you made some good friends during your first year here at university?

R: Yeah, there’s a good group of people that I usually hang out with, just a couple other guys from the team. It still isn’t quite the same as high school though. Back home, I had a really close group of friends and we hung out all the time but, they wound up going to schools in other provinces and I don’t get to see them as much anymore. And when I came to school here I didn’t really know anybody. So, I’ve got friends here but it’s not quite the same as high school. You know, its really nice sometimes to have old familiar friends to talk to, but I guess it just takes time, that’s all.
R: Well, if we’re discussing my social life, I guess I should also mention that I have Tourette Syndrome. I was diagnosed a long time ago, when I was a kid. Most of my friends from home know, but here – I guess I tell people when I want to them to have a much more complete understanding of me, and the things that I do.

END
Legend:

<table>
<thead>
<tr>
<th>R = Respondent</th>
<th>I = Interviewer</th>
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<tbody>
<tr>
<td><strong>Tics:</strong></td>
<td></td>
</tr>
<tr>
<td>Vocal, simple = VS</td>
<td>Motor, arm/hand = MA</td>
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<tr>
<td>Vocal, complex = VC</td>
<td>Motor, shoulder/head = MS</td>
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<tr>
<td>Motor, facial = MF</td>
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SCENARIO: **Mild** = 2 tics per min. (avg. of 1 motor and 1 vocal tic per min.)

I: And how about socially? How do you think you’ve adjusted so far to university life?

R: Well things are pretty good, I go out a fair amount, and parties in here are usually great compared to the ones in high school. [VS]

I: Why do you say “usually”?

R: Well I don’t know, I’ve never really considered myself a shy person; I’ve had my fair share of friends and I’ve gone to parties before. But sometimes it’s different here. [MF]

I guess the parties are so big and it’s impossible to know everyone like in high school. Like last week, I went to this huge party and I don’t think I knew three people there. [VS] I just felt so weird... and self-conscious, like I really stuck out, you know? Some people just seem able to go out to a party and not know anybody, and make themselves feel really comfortable. Just like they were with their friends; but its not quite that easy for me. Like I said before I don’t think I’m shy, I’m just more comfortable with good friends – and I can be myself, you know? More outgoing.

I: Have you made some good friends during your first year here at university?

R: Yeah, there’s a good group of people that I usually hang out with, just a couple other guys from the team. It still isn’t quite the same as high school though. Back home, I had a really close group of friends and we hung out all the time but, they wound up going to schools in other provinces and I don’t get to see them as much anymore. [MA] And when I came to school here [VS] I didn’t really know anybody. So, I’ve got friends here but it’s not quite the same as high school. You know, its really nice sometimes to have old familiar friends to talk to, but I guess it just takes time, that’s all.
R: Well, if we’re discussing my social life, I guess I should also mention that I have Tourette Syndrome. I was diagnosed a [VS] long time ago, when I was a kid. Most of my friends from home know, but here -- I guess I tell people when [MF] I want to them to have a much more complete understanding of me, and the things that I do.
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SCENARIO: **Severe** = 12 tics per min. (avg. of 6 motor and 6 vocal tics per min.)

I: And how about socially? How do [VS] you think you’ve adjusted so far to university life?

R: Well things are pretty good, I go out a fair amount, and parties in here are usually great compared to the ones in high school. [VC]

I: Why do you say “usually”? [MF]

R: Well I don’t know, I’ve [VS] never really considered myself a shy person; I’ve had my fair share of friends and I’ve gone to parties before. But sometimes it’s different here. [MF] [MF]

I guess the parties are so big and it’s impossible to know everyone like in high school. [MS] Like last week, I went to this huge party and I don’t think I knew three people there. [MS] [VS] I just felt so weird... and self-conscious, like I really stuck out, you know? Some people just seem able to go out to a party and not know anybody, and make themselves feel really comfortable. [VS] Just like they were with their friends; [VS] [MF] but its not quite that easy for me. Like I said before I don’t think I’m shy, I’m just more comfortable with good friends – and I can be myself, you know? [VS] More outgoing. [MA]

I: Have you made [MA] some good friends during your first year here at university?

R: Yeah, there’s a good group of people that I usually hang out with, just a couple other guys from the team. [MS] It still isn’t [VS] quite the same as high school though [VS]. [MF] Back home, I had a really close group of friends and we hung out all the time but, they wound up going to schools in other provinces and I don’t get to see them as much anymore. [MF] [MF] [MA] And when I came to school here [VS] I didn’t really know anybody. So, [VS] I’ve got friends here but it’s not quite the same as high school. [VC] You know, its really nice sometimes to have old familiar friends to talk to, but I guess it just takes time, [MA] that’s all.
R: Well, [VS] if we’re discussing my social life, I guess I should also mention that I have Tourette Syndrome. I was diagnosed a [VS] long time ago, when I was a kid. Most of my friends from home know, [VS] but here -- I guess I tell people when [MF] [MF] I want to them to have a much more complete understanding of me, and the things that I do.

END
APPENDIX B.


Vignette With Altered Items Indicated Parenthetically

You and a friend have agreed to meet for lunch. Your friend is accompanied by a (female/male) friend named Jamie, whom you have never met (however, you remember your friend saying a while back that Jamie has Tourette Syndrome). Talking with Jamie, you find that you have similar interests and like to do many of the same things. During lunch, you notice a few things about Jamie. (She/He) often makes unusual noises such as grunting and throat clearing. You also notice that (she/he) frequently jerks her/his neck and blinks her/his eyes in a quick and hard manner. When these things happen, other people look over at Jamie.
APPENDIX C.

Screen shot from video vignette.