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# Clinical utility of self-disclosure for adults who stutter: Apologetic versus informative statements



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## ABSTRACT

**Purpose:** The purpose of the present study was to explore the clinical utility of self-disclosure, particularly, whether disclosing in an informative manner would result in more positive observer ratings of the speaker who stutters than either disclosing in an apologetic manner or choosing not to self-disclose at all.

**Method:** Observers (N = 338) were randomly assigned to view one of six possible videos (i.e., adult male informative self-disclosure, adult male apologetic self-disclosure, adult male no self-disclosure, adult female informative self-disclosure, adult female apologetic self-disclosure, adult female no self-disclosure). Observers completed a survey assessing their perceptions of the speaker they viewed immediately after watching the video.

**Results:** Results suggest that self-disclosing in an informative manner leads to significantly more positive observer ratings than choosing not to self-disclose. In contrast, use of an apologetic statement, for the most part, does not yield significantly more positive ratings than choosing not to self-disclose.

**Conclusion:** Clinicians should recommend their clients self-disclose in an informative manner to facilitate more positive observer perceptions.

## 1. Introduction

Stuttering is not a psychological disorder or a disorder that is the result of atypical nervousness or anxiety (Alm, 2014); rather it is a multifactorial, neurophysiological disorder with a genetic predisposition (e.g., Ambrose, Yairi, & Cox, 1993; Dworzynski, Remington, Rijdsdijk, Howell, & Plomin, 2007; Kraft & Yairi, 2012). Nevertheless, stuttering is commonly portrayed in movies and television to depict characters who are nervous, weak, unintelligent and/or duplicitous (Johnson, 2008). Negative stereotypes toward people who stutter have been demonstrated across a variety of populations, including speech-language pathologists (e.g., Lass, Ruscello, Pannbacker, Schmitt, & Everly-Myers, 1989; Silverman, 1982; Turnbaugh, Guitar, & Hoffman, 1979; Woods & Williams, 1971; Yairi and Williams, 1970), teachers (e.g., Crowe and Walton, 1981; Lass et al., 1992; Woods and Williams, 1976; Yeakle and Cooper, 1986), university students (e.g., Betz, Blood, & Blood, 2008), parents (e.g., Crowe & Cooper, 1977; Woods & Williams, 1976), school-age children (e.g., Franck, Jackson, Pimentel, & Greenwood, 2003; Hartford & Leahy, 2007) and protective service workers (Li, Arnold, & Beste-Guldborg, 2016). Pervasive ignorance regarding the underlying nature of stuttering has contributed to marked stigmatization and discrimination (e.g., Boyle, 2013) and has increased the stereotype threat for persons who stutter.

Stereotype threat is the danger of extensive negative misperceptions about a particular group that leads to individual members of that group failing to reach their potential (Steele & Aronson, 1995). MacKinnon, Hall, and MacIntyre (2007) suggest that the

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formulation of negative stereotypes regarding persons who stutter evolve for at least two reasons. First, the observer projects the anxiety, nervousness, and/or uncertainty s/he experiences during moments of disfluency and assumes that those same feelings apply to the person who stutters during instances of stuttering. The second explanation for the stuttering stereotype is that the observer feels anxious and uncomfortable when s/he is listening to a person who stutters and assumes that the speaker who stutters is feeling the same way. Self-disclosure has been suggested as a strategy for persons belonging to groups at risk for stereotype threat including but not limited to the gay, lesbian, bisexual, transgender, and questioning (GLBTQ) community and people with mental illness with the outcomes indicating that disclosing to others leads to self-empowerment and decreases vulnerability to the stereotype threat (e.g., Corrigan, Kosyluk, & Rüschi, 2013). Research completed thus far demonstrates that this strategy can positively influence both children's (e.g., Byrd, Gkalitsiou, McGill, Reed, & Kelly, 2016; Frank, Jackson, Pimentel, & Greenwood, 2003; Hartford & Leahy, 2007) and adults' (e.g., Boyle, Dioguardi, & Pate, 2016; Boyle, Dioguardi, & Pate, 2017; Byrd, McGill, Gkalitsiou, & Capellini, 2017; Collins & Blood, 1990; Healey, Gabel, Daniels, & Kawai, 2007; Lee & Manning, 2010) perceptions of individuals who stutter. Together, these studies suggest self-disclosure is of benefit and that the nature of the statement may uniquely influence listener perceptions. Specifically, past research suggests that an apologetic self-disclosure statement may compromise the potential benefit of use of this strategy.

Collins and Blood (1990) showed videos of two males who stutter mildly, and two who stuttered severely to 84 female undergraduate college students. Participants were exposed to conditions wherein the speaker did and did not self-disclose about his stuttering when prompted at the end of the interview whether or not there was anything else that he would like to share. When the speaker self-acknowledged his stuttering, listeners rated him significantly more favorably on traits of intelligence, personality, and appearance. Additionally, results demonstrated the speakers who stuttered severely received significantly more positive ratings when they self-disclosed compared to when they did not self-disclose than the speakers who stuttered mildly.

Healey, Gabel, Daniels, and Kawai (2007) asked observers to rate a male speaker who stutters who did or did not self-disclose his stuttering during a video-recorded monologue. The speaker self-disclosed by stating "I should let you know that was kind of tough for me in spots. I stutter and I appreciate you bearing with me" at the end of the monologue or using the statement "...But before I start, I should let you know that I stutter so this might be hard in spots, so bear with me" at the beginning of the monologue (Healey et al., 2007, pp. 55–56). Raters scored the speaker's video on personality traits using a Likert scale and also described the speaker using open-ended comments. Results did not reveal overall differences in Likert scale ratings of the speaker when he did or did not self-disclose. However, the observers did not have the opportunity to compare observations. Instead, they either viewed the male speaker self-disclose or viewed a video where he did not self-disclose. Nevertheless, videos that contained a self-disclosure statement at the beginning of the dialogue received more positive listener comments than those where self-disclosure was presented at the end (Healey et al., 2007). This finding indicates that if self-disclosure is utilized, there may be more benefit to self-disclosing at the beginning of a communication interaction, which is consistent with findings from other studies (e.g., Lincoln & Bricker-Katz, 2008). Additionally, and of particular relevance to the present study, findings from Healey et al. (2007) suggest that the wording of the self-disclosure statement may affect how listeners perceive the speaker who stutters. Healey et al. (2007) stated that the self-disclosure statement they had their speaker employ might have appeared to be more of an apology for stuttering than an act of revealing it (e.g., "I appreciate you bearing with me"). They further argued that the apologetic nature of this statement may have compromised the potential positive influence of the speaker's self-disclosure on listeners' perceptions. Thus, the discrepancy between the findings reported by Collins and Blood (1990) and that of Healey et al. (2007) may have been the use of an affirming self-disclosure statement in the former and the use of an apologetic statement in the latter study.

Lee and Manning (2010) further contributed to the self-disclosure literature by completing two distinct experiments. In the first experiment, participants viewed one of the following: (1) a condition where the speaker stuttered and self-disclosed, (2) a condition where the speaker stuttered but did not self-disclose; (3) a condition where the speaker stuttered and employed stuttering modification, or (4) a condition where the speaker stuttered, self-disclosed, and used stuttering modification. In the second experiment, participants were provided with direct comparisons of a speaker who stuttered and self-disclosed versus a speaker who stuttered but did not self-disclose. The authors only found significant findings in the listener perceptions for the experiment that provided a direct comparison of the speaker self-disclosing versus the speaker not self-disclosing. The condition where the male speaker self-disclosed was rated moderately more favorably than the condition with no self-disclosure. Given that the listeners needed a comparison of no self-disclosure to one of self-disclosure to elicit significantly different perspectives regarding the speaker, the authors argued that the use of self-disclosure may not be practical – at least, not if the sole purpose is to change listener perception. However, Lee and Manning (2010) further stated that self-disclosure as a strategy may still provide to be beneficial for the speaker who stutters as the act of acknowledging stuttering facilitates acceptance and understanding.

More recently, Byrd et al. (2017) extended past research by employing an informative statement at the beginning of an exchange to determine whether this type of statement resulted in significantly more positive listener perceptions than no self-disclosure statement. Participants ( $N = 173$ ) were randomly assigned to view two of four possible videos (i.e., male self-disclosure, male no self-disclosure, female self-disclosure, and female no self-disclosure). The self-disclosure statement was informative, and non-apologetic in nature: "I sometimes stutter, so you might hear me repeat words or sounds, but if you have any questions or want me to say anything again, just let me know." Results demonstrated that listeners were significantly more likely to select speakers who self-disclosed their stuttering as more friendly, outgoing, and confident compared to speakers who did not self-disclose. Observers were also significantly more likely to select speakers who did not self-disclose as more unfriendly and shy as compared to speakers who used a self-disclosure statement. These data suggest that the informative, non-apologetic statement leads to positive perceptions in contrast to the previous research that employed an apologetic statement. However, whether or not a non-apologetic statement is significantly more beneficial than an apologetic one remains unknown, as Byrd and colleagues did not include both an apologetic and

an informative statement in their previous research.

The purpose of the present study was to improve our understanding of whether self-disclosing in an informative way would lead to more positive listener perceptions. Specifically, we asked whether participants would rate listeners who provide informative self-disclosure statements more positively than either self-disclosing in an apologetic manner or not self-disclosing. We also asked whether self-disclosing in an informative or an apologetic manner would lead to more positive listener perceptions than choosing not to self-disclose. Based on past research, we hypothesized that self-disclosure in a non-apologetic manner would yield significantly more positive listener perceptions than the two other conditions and that self-disclosing in an apologetic manner would not yield more positive perceptions than the condition wherein there was no self-disclosure. Results from this study provides needed clinical insight with regard to the type of self-disclosure statement that yields the most positive observer perceptions of persons who stutter.

## 2. Method

To address the research questions posed, videos of a male and a female speaker self-disclosing in either an informative or an apologetic way and not self-disclosing at all were created. Participants were randomly assigned one of these six videos to view and then completed a brief survey wherein they rated the speaker they observed on distinct traits.

### 2.1. Video stimuli

#### 2.1.1. Speakers

The adult male speaker had been stuttering since about 4 years of age and was 26 years, 5 months old at the time of filming. He was enrolled in speech-language pathology services when the videos were recorded and had experience with voluntary stuttering for approximately 8 years. The adult female speaker, who was 21 years, 5 months old during filming, was not a person who stutters; however, she was educated by the authors about the nature and purpose of voluntary stuttering, shown multiple videos of persons who stutter producing moments of stuttering and practiced extensively with feedback from all four authors before filming her videos. Neither speaker presented with a regional accent. Both speakers demonstrated normal articulation, vocal quality, resonance, nasality, speech rate, and speech loudness as judged by all four authors; three of whom are certified speech-language pathologists.

#### 2.1.2. Recording equipment

The stimulus videos were recorded by a staff member in the *Instructional Technology Services* at the first author's university, who had advanced editing and production skills as well as access to state of the art filming equipment. To record the videos, a Panasonic HMC-150, which is a digital HD solid-state video camera, was used. A Sennheiser EW 100-ENG G3 wireless lavalier microphone kit was used for high-quality audio. The videos were edited and exported using Apple's Final Cut Pro and uploaded to a secure content sharing platform.

#### 2.1.3. Setting

The adult male and female were filmed individually, sitting in a chair with the same white wall in the background. The dark blue and green-patched chair was barely visible in the frame. Both looked directly into the camera as they spoke to the same female interviewer who was audible but not visible on the screen. Each speaker was shown from the mid-chest up, alone on set.

#### 2.1.4. Script

Prior to hearing the adult male or female speak, observers heard the female interviewer say: "So glad you were able to make it in for the interview today – why don't we begin by having you tell me your name and a little bit about yourself." Then, the speakers introduced themselves by stating their first name to the interviewer and said: "I'm graduating next month. I'm excited for the opportunity to interview with your company today." Immediately following this introductory statement was either an informative self-disclosure statement, an apologetic statement, or no self-disclosure statement. In the *informative* condition, the speaker stated: "Before we get started, I want to let you know that I stutter. You may hear me repeat sounds or phrases, but if there is anything that I say that you do not understand, please don't hesitate to ask me." In the *apologetic* condition, the speaker said: "Before we get started, I should let you know that I stutter, so this might be hard in spots, so bear with me." The final statement for the *informative*, the *apologetic*, and the *no self-disclosure* statement was "I'm really honored to be here" and the video ended. Thus, for the *no self-disclosure* condition, participants viewed the speaker provide the introductory statement followed by the final statement.

#### 2.1.5. Disfluencies

The informative, apologetic, and no self-disclosure scripts were coded for the speakers with insertions of stuttering-like disfluencies in red to control for a nearly identical production of stuttering across the three scripts. These disfluencies included single sound repetitions produced with tension, audible sound prolongations, and inaudible sound prolongations, and occurred at the same locations in the introduction and final statement portions of each script. Across all three scripts, the total number of stuttering-like disfluencies per total number of words was 10.4% to 12% with 3 to 4% of each type of stuttering-like disfluency produced in each sample.

#### 2.1.6. Preparation and video selection

Both speakers were given the coded scripts one week prior to filming and instructed to practice with the goal of reciting it

naturally from memory. On film day, each speaker practiced saying the scripts several times from memory before recording. Feedback was given throughout the filming process in regard to speech rate and naturalness of production. Four videos of each of the three scripts that included the comparable number and types of voluntary stuttering-like disfluencies and a speech rate perceptually judged to be within normal range for adults, were selected for further analysis. These recordings were then independently reviewed at a later time by all four authors, who selected the final three videos that were maximally similar across scripts and between the speakers.

## 2.2. Survey

The first author's university Institutional Review Board approved the study, which was distributed to participants via Qualtrics. Prior to beginning the survey, an informed consent form was obtained for each participant. This document informed participants of the general purpose of the study, the anonymity of responses, the risks and benefits, and the freedom to stop the survey at any time. The first author's contact information was also provided. Next, participants clicked on "> >" arrows to view their randomly assigned video recording. The speaker in the video was either the male or female self-disclosing in an informative or apologetic manner or not self-disclosing at all. The videos were systematically randomized so that each participant viewed only one of the six possible recordings. This ensured that participants evaluated the speaker in only one condition rather than viewing the same speaker more than once in different conditions – a circumstance that would not be likely in everyday life (see Lee & Manning, 2010).

Participants then clicked on the "> >" arrows to complete 6 demographic questions followed by a survey, which consisted of two parts. Part I included 10 questions that used a Likert scale to assess the observer's perception of the speaker's personality traits. Participants rated the speaker on the following personality traits: friendly, outgoing, intelligent, confident, distracting, unfriendly, shy, unintelligent, insecure, engaging. Each question was structured as follows: "How friendly was the speaker?" Below each question was a scale with numbers 1–7. One was labeled "not at all," four was labeled "neutral" and seven was labeled "very." Part II consisted of 5–11 open-ended questions to gather additional knowledge about the participant's personal experience with persons who stutter. The number of questions presented was contingent upon the participant's responses regarding if they knew a person who stutters and if they are a person who stutters. For example, one question asked: "Have you ever stuttered?" If the participant selected "yes," three additional questions were asked regarding the presence of a diagnosis by a licensed speech-language pathologist, the persistence of their stuttering, and their use of self-disclosure. The survey was available online for 4 months. Each participant had 1 week to complete the survey from the time s/he initiated it. The complete survey can be found in Appendix A.

## 2.3. Participants

Participants were recruited through individual and mass emails and Facebook messages, word of mouth, and in-person contact. Participants were provided the general purpose of the study (i.e., to further knowledge in the field of communication sciences and disorders) to avoid any source of bias beforehand. Individuals were informed that the survey contained a short video at the beginning and then questions to follow. The link to the survey questionnaire was embedded at the end of the email message and responses were collected via Qualtrics. Participants completed the survey remotely using a device (i.e., smartphone, iPad, computer) of their choosing, but were instructed to do so alone in a quiet setting.

To be eligible to participate in this study, respondents had to be at least 18 years of age, had to complete the survey in its entirety, and could not be a confirmed or suspected person who stutters. A total of 559 surveys were initiated and 351 surveys were completed in full. Of those 351 completed surveys, 13 were excluded because the participant reported either a prior formal diagnosis of stuttering or that they had stuttered at some point in their lives resulting in a final participant number of 338 (N = 106 males; N = 232 females; age range = 18–90 yrs.;  $M = 29.4$  yrs.). From our final participant corpus, 92.3% were native English speakers. In addition, 87% of participants reported they had encountered someone who stutters in their lifetime and 63.3% reported a personal relationship someone who stutters. Participants used a Likert scale (1 = "not well at all" to 7 = "very well") to rate how well they knew that person. Out of the 63.3% of participants who reported to know a person who stutters personally, 7% knew that person "not well at all," 14% knew the person "very well," and 22% provided a moderately well rating.

## 3. Results

A linear model ran in R Studio, version 3.2.3 (RStudio Team, 2015) was used to analyze the data with observer gender, video gender, video type (i.e., informative, apologetic, no self-disclosure), and prior experience with stuttering as the independent variables and the personality traits (friendly, outgoing, intelligent, confident, more distracting, unfriendly, shy, unintelligent, insecure, less distracting) as the dependent variables. The resulting linear model was evaluated through an ANOVA summary from the 'Car' package in R (Fox & Weisberg, 2011), utilizing Type III Sums of Squares. Mean ratings (maximum score is 7) are reported along with standard errors of the mean. Post-hoc pairwise comparisons using the 'lsmeans' package in R (Lenth, 2016) were performed when there was a significant  $F$  value and Bonferroni correction was applied to correct for Type I error. Partial eta squared ( $\eta^2$ ) was used to obtain the effect sizes of significant  $F$  values and Cohen's  $d$  for significant pairwise comparisons using the package 'effsize' version 0.7.1 in R (Torchiano, 2017). A value of  $\eta^2 = 0.01$  indicates a small effect size, a value of  $\eta^2 = 0.06$  a medium effect size and a value of  $\eta^2 = 0.14$  indicates a large effect size when using Anova (Cohen, 1988). Furthermore, Cohen's  $d = 0.20$  indicates a small effect size, Cohen's  $d = 0.50$  a medium effect size and Cohen's  $d = 0.80$  indicates a large effect size. Detailed information regarding the observers' ratings for each personality trait based on the presence and type of self-disclosure, observer and speaker gender, and

**Table 1**

Observers' choices for personality traits based on presence of self-disclosure, observer gender, and observer prior experience with stuttering.

Dependent variable		Df	F value	Significance
Friendly	Observer gender	1	0.003	0.956
	Self-disclosure	2	4.852	0.008*
	Video gender	1	0.003	0.956
	Prior stuttering experience	1	0.963	0.327
Outgoing	Observer gender	1	0.553	0.457
	Self-disclosure	2	8.031	0.0004*
	Video gender	1	0.451	0.503
	Prior stuttering experience	1	1.347	0.247
Intelligent	Observer gender	1	4.365	0.037*
	Self-disclosure	2	5.162	0.006*
	Video gender	1	0.819	0.366
	Prior stuttering experience	1	0.892	0.346
Confident	Observer gender	1	9.587	0.002*
	Self-disclosure	2	13.648	≤0.0001*
	Video gender	1	0.053	0.818
	Prior stuttering experience	1	0.570	0.451
Engaged	Observer gender	1	5.373	0.021*
	Self-disclosure	2	4.445	0.012*
	Video gender	1	0.442	0.507
	Prior stuttering experience	1	3.884	0.050*
Unfriendly	Observer gender	1	1.151	0.284
	Self-disclosure	2	1.227	0.294
	Video gender	1	1.740	0.188
	Prior stuttering experience	1	0.005	0.942
Shy	Observer gender	1	10.989	0.001*
	Self-disclosure	2	2.880	0.058
	Video gender	1	0.057	0.812
	Prior stuttering experience	1	1.157	0.283
Unintelligent	Observer gender	1	5.235	0.022*
	Self-disclosure	2	1.662	0.191
	Video gender	1	0.463	0.497
	Prior stuttering experience	1	0.011	0.918
Insecure	Observer gender	1	9.717	0.002*
	Self-disclosure	2	8.257	0.0003*
	Video gender	1	0.566	0.452
	Prior stuttering experience	1	1.762	0.185
Distracted	Observer gender	1	0.778	0.378
	Self-disclosure	2	0.183	0.833
	Video gender	1	1.458	0.228
	Prior stuttering experience	1	3.505	0.062

observer prior experience with stuttering is presented in Table 1. All possible 2-way interactions were performed but none were found to be significant and, thus, were removed to retain the efficiency of the overall model.

### 3.1. Friendly

A significant main effect was found for self-disclosure,  $F(2,333) = 4.852, p = 0.008, \eta^2 = 0.03$ , controlling for speaker/observer gender and prior experience with stuttering. No other significant main effects were found. Pairwise comparisons indicated that observers were significantly more likely to rate the informative self-disclosure statement as friendlier ( $M = 5.91, SE = 0.11$ ) when compared to the apologetic ( $M = 5.52, SE = 0.10$ ),  $t(333) = 2.729, p = 0.020$ , Cohen's  $d = 0.35$ , and also when compared to the absence of a self-disclosure statement ( $M = 5.54, SE = 0.12$ ),  $t(333) = 2.638, p = 0.026$ , Cohen's  $d = 0.39$ . No significant difference was found between the use of an apologetic self-disclosure statement and the lack of use of a self-disclosure statement,  $t(333) = 0.020, p = 0.99$ .

### 3.2. Outgoing

Controlling for speaker/observer gender, and prior experience with stuttering, a significant main effect was found for self-disclosure,  $F(2,333) = 8.031, p \leq 0.001, \eta^2 = .05$ . No other main effects were significant. Pairwise comparisons indicated that observers were significantly more likely to rate the speaker as more outgoing when s/he used an informative statement ( $M = 5.21, SE = 0.12$ ) significantly more than when the speaker did not self-disclose ( $M = 4.55, SE = 0.12$ ),  $t(333) = 4.006, p \leq 0.001$ , Cohen's  $d = 0.54$ . No significant difference was observed in ratings of outgoing when comparing the use of the informative statement to the use of an apologetic statement ( $M = 4.89, SE = 0.11$ ),  $t(333) = 2.051, p = 0.123$ . Additionally, no significant difference was found between use of an apologetic statement and the absence of a self-disclosure statement,  $t(342) = 2.049, p = 0.124$ .

### 3.3. Intelligent

A significant main effect was found for self-disclosure,  $F(2,333) = 5.162$ ,  $p = 0.006$ ,  $\eta^2 = 0.03$ , controlling for speaker/observer gender and prior experience with stuttering. Pairwise comparisons indicated that observers were significantly more likely to rate the speaker as more intelligent when the speaker used an informative self-disclosure statement ( $M = 5.66$ ,  $SE = 0.10$ ) compared to when s/he did not self-disclose ( $M = 5.22$ ,  $SE = 0.11$ ),  $t(333) = 3.180$ ,  $p = 0.005$ , Cohen's  $d = .43$ . No difference was found in ratings when the speaker used an informative statement versus when they used an apologetic statement ( $M = 5.51$ ,  $SE = 0.10$ ),  $t(333) = 1.140$ ,  $p = 0.766$ , nor between when the speaker used an apologetic statement versus when they did not self-disclose,  $t(333) = 2.098$ ,  $p = 0.110$ . In addition, a significant main effect for observer gender,  $F(1,333) = 4.365$ ,  $p = 0.037$ ,  $\eta^2 = 0.01$ , was also found, controlling for self disclosure, speaker gender and prior experience with stuttering. Female observers ( $M = 5.59$ ,  $SE = 0.07$ ) were more likely to rate the speakers higher compared to male observers ( $M = 5.33$ ,  $SE = 0.10$ ),  $t(333) = 2.089$ ,  $p = 0.038$ . No other main effects were significant.

### 3.4. Confident

Controlling for speaker/observer gender and prior experience with stuttering, a significant main effect was found for self-disclosure,  $F(2,333) = 13.648$ ,  $p \leq 0.001$ ,  $\eta^2 = 0.08$ . Pairwise comparisons indicated that observers were significantly more likely to rate the speaker as more confident when s/he used an informative self-disclosure statement ( $M = 5.65$ ,  $SE = 0.13$ ) than when they used an apologetic statement ( $M = 5.19$ ,  $SE = 0.13$ ),  $t(333) = 2.572$ ,  $p = 0.032$ , Cohen's  $d = 0.37$ , as well as compared to when they did not self-disclose ( $M = 4.68$ ,  $SE = 0.14$ ),  $t(333) = 5.224$ ,  $p \leq 0.001$ , Cohen's  $d = 0.70$ . A significant difference was also found between the use of an apologetic statement versus not using a self-disclosure statement,  $t(342) = 2.771$ ,  $p = 0.018$ , Cohen's  $d = 0.32$ , with observers rating the speakers who used an apologetic statement as more confident than those who did not self-disclose. In addition, there was a significant main effect for observer gender, when controlling for self-disclosure statement type, speaker gender, and prior experience with stuttering,  $F(1,333) = 9.587$ ,  $p = 0.002$ ,  $\eta^2 = 0.03$ . Female observers provided significantly higher ratings for confidence ( $M = 5.42$ ,  $SE = 0.09$ ) compared to male observers ( $M = 4.92$ ,  $SE = 0.14$ ),  $t(333) = 3.096$ ,  $p = 0.002$ , Cohen's  $d = 0.34$ . No other main effects were found to be significant.

### 3.5. Unfriendly

When observers were asked how unfriendly the speaker was, no significant main effects were observed regarding their ratings.

### 3.6. Shy

A main effect for observer gender was significant, when observers were asked to rate how shy the speaker was,  $F(1,333) = 10.989$ ,  $p = 0.001$ ,  $\eta^2 = 0.03$ , controlling for video type, video gender and prior experience with stuttering. Male observers were more likely to rate the speaker as more shy ( $M = 3.20$ ,  $SE = 0.15$ ) compared to female observers ( $M = 2.62$ ,  $SE = 0.10$ ),  $t(333) = 3.315$ ,  $p = 0.001$ , Cohen's  $d = 0.37$ . There were no other significant main effects.

### 3.7. Unintelligent

When observers were asked to rate how unintelligent the speaker was, there was a significant main effect for observer gender,  $F(1,333) = 5.235$ ,  $p = 0.023$ ,  $\eta^2 = 0.02$ , when controlling for video type, video gender and prior experience with stuttering. Male speakers were more likely to rate the video speaker as more unintelligent ( $M = 2.14$ ,  $SE = 0.12$ ) compared to female observers ( $M = 1.81$ ,  $SE = .08$ ),  $t(333) = 2.288$ ,  $p = 0.023$ , Cohen's  $d = 0.26$ . No other main effects were found to be significant.

### 3.8. Insecure

When controlling for speaker/observer gender and prior experience with stuttering, a significant main effect for self-disclosure was found,  $F(2,333) = 8.257$ ,  $p \leq 0.001$ ,  $\eta^2 = 0.05$ . Pairwise comparisons indicated that observers rated the speakers who used an informative statement ( $M = 2.39$ ,  $SE = 0.14$ ) as significantly less insecure than the speakers who did not self-disclose ( $M = 3.20$ ,  $SE = 0.15$ ),  $t(333) = 4.063$ ,  $p \leq 0.001$ , Cohen's  $d = 0.50$ . No differences were found when comparing observer ratings of speakers who used an apologetic statement ( $M = 2.75$ ,  $SE = 0.14$ ) versus speakers who self-disclosed in an informative way,  $t(333) = 1.914$ ,  $p = 0.169$  and when comparing the ratings of the speakers who used the apologetic statement versus those who did not self disclose,  $t(333) = 2.238$ ,  $p = 0.078$ . In addition, there was a significant main effect for observer gender,  $F(1,333) = 9.717$ ,  $p = 0.002$ ,  $\eta^2 = 0.03$ , controlling for video type, video gender, and prior experience with stuttering. Male observers were more likely to rate the videos as more insecure ( $M = 3.05$ ,  $SE = 0.15$ ) compared to female observers ( $M = 2.51$ ,  $SE = 0.10$ ),  $t(333) = 3.117$ ,  $p = 0.002$ , Cohen's  $d = 0.34$ . No other main effects were observed.

### 3.9. Engaged

When observers were asked how engaged they were when viewing the speaker, there was a significant main effect for self-

disclosure,  $F(2,333) = 4.445$ ,  $p = 0.012$ ,  $\eta^2 = 0.03$ , controlling for speaker/observer gender and prior experience with stuttering. Based on pairwise comparisons, observers were more likely to report being more engaged when viewing the speaker who used an informative statement ( $M = 5.43$ ,  $SE = 0.12$ ) compared to speakers who did not self-disclose ( $M = 4.92$ ,  $SE = 0.13$ ),  $t(333) = 2.930$ ,  $p = 0.011$ , Cohen's  $d = 0.39$ . No significant differences were found in ratings of how engaged the observer was when comparing speakers who used the informative versus the apologetic statement ( $M = 5.27$ ,  $SE = 0.12$ ),  $t(333) = 0.940$ ,  $p = 0.999$ . There also was no difference when comparing speakers who used the apologetic statement to those who did not self-disclose,  $t(333) = 2.039$ ,  $p = 0.127$ . Additionally, when controlling for self-disclosure statement, speaker gender and prior experience with stuttering, there was a significant main effect for observer gender,  $F(1,333) = 5.373$ ,  $p = 0.021$ ,  $\eta^2 = 0.02$ . Female observers reported being more engaged ( $M = 5.38$ ,  $SE = 0.09$ ) compared to male observers ( $M = 5.03$ ,  $SE = 0.13$ ),  $t(333) = 2.318$ ,  $p = 0.021$ , Cohen's  $d = 0.26$ . Finally, a significant main effect for prior experience with stuttering was also noted,  $F(1,333) = 3.884$ ,  $p = 0.050$ ,  $\eta^2 = 0.01$ , controlling for observer and speaker gender and self-disclosure statement. Observers who reported prior experience with stuttering were more likely to report being more engaged ( $M = 5.35$ ,  $SE = 0.09$ ) compared to observers with no prior experience with stuttering ( $M = 5.06$ ,  $SE = 0.12$ ),  $t(333) = 1.971$ ,  $p = 0.050$ , Cohen's  $d = 0.20$ . No other significant main effects were observed.

### 3.10. Distracted

When observers were asked to rate how distracted they were when viewing the speaker, no significant main effects were found.

## 4. Discussion

Research has demonstrated self-disclosure can positively influence listener perceptions of persons who stutter. The purpose of the present study was to explore whether the use of an informative self-disclosure statement would generate more positive observer perceptions of the speaker than the use of an apologetic statement and/or no statement at all. Present findings suggest that self-disclosing in an informative manner yields more positive listener perceptions than not self-disclosing across most ratings and that observers rate speakers who use an informative statement as friendlier and more confident than speakers who use an apologetic statement. Additionally, in contrast to the use of an informative statement, the use of an apologetic statement did not result in more positive ratings than choosing not to self-disclose, with the exception of rating the confidence of the speaker. There also were a few traits for which the type of self-disclosure statement and/or the lack thereof did not significantly influence observer ratings. And, similar to past research, ratings for a few of the traits were mediated by gender. These findings will be discussed with specific focus on the utility of self-disclosure in clinical practice with adults who stutter.

### 4.1. Use of a self-disclosure statement versus no statement

When controlling for prior experience with stuttering as well as observer and speaker gender, observers rated speakers who used an informative statement as significantly less insecure and significantly more friendly, outgoing, intelligent, and confident than speakers who did not self-disclose. Observers also reported being more engaged when viewing speakers who self-disclosed in an informative manner than speakers who did not self-disclose. In contrast, when comparing ratings of speakers who used an apologetic statement to ratings of speakers who did not self-disclose, there was only a significant finding for confidence, with observers rating speakers who used an apologetic statement as more confident than speakers who did not self-disclose.

These findings suggest that use of an informative statement leads to more positive listener perceptions than choosing not to self-disclose, with medium effect sizes for outgoing, confident, and insecure. Clinicians are encouraged to stress to adults who stutter that use of this type of statement can result in listeners viewing them more positively across those traits that are more directly related to the stuttering stereotype. Results from the present study also suggest that, at least with regard to observers' ratings of the speaker's confidence, use of either an informative or an apologetic statement can lead to more positive perceptions. However, this difference, even though statistically significant, had a small effect size stressing that self-disclosing in an informative manner seems to be of the most significant benefit.

Findings from the current study support previous research regarding the positive effects of self-disclosure on listeners' perceptions of adults who stutter (e.g., Byrd et al., 2017; Collins and Blood, 1990; Lee and Manning, 2010). Collins and Blood (1990) found that the use of self-disclosure had a positive impact on listeners' perceptions of individuals who stutter in terms of intelligence, personality, and appearance. In addition, they stressed that individuals who stutter more severely seem to benefit more from the use of self-disclosure compared to individuals whose stuttering is mild in severity. The positive contribution of self-disclosure on listeners' perceptions of people who stutter was also demonstrated in Byrd et al. (2017), where observers were more likely to rate speakers who self-disclosed as more friendly, outgoing, and confident as well as less unfriendly and less shy. Additional research including speakers with different stuttering severities is needed in order to investigate how different types of self-disclosure statements (i.e., informative versus apologetic) and stuttering severity contribute to observers' perceptions of people who stutter.

As we hypothesized, results from the present study suggest that Healey and colleagues did not find significant benefits for the use of self-disclosure because their speaker used statements that were apologetic. However, it needs to be noted that different traits were assessed in their study (i.e., "sincere, likeable, trustworthy, emotionally well adjusted, shows character"). Also, the videos in which the speaker acknowledged his stuttering were split with half presenting the self-disclosure statement at the beginning of the video and the other half at the end. Future research should explore the influence of different forms of self-disclosure on a wider variety of traits,

particularly those traits that have yielded significance thus far as well as any additional traits that may mitigate role entrapment. The timing of when best to use self-disclosure, at the introduction of a first meeting, in the middle, or towards the end also warrants additional investigation.

Finally, in the present study, no differences were found in observer ratings of speakers who used an apologetic statement, speakers who used an informative statement, and/or speakers who did not self-disclose for ratings of unfriendly, unintelligent, shy, and distracting. These findings are encouraging as they suggest that the observers did not view the speakers who stutter as being unfriendly or unintelligent. However, with the exception of the ratings of unfriendly, there were other factors that influenced observer ratings and will be discussed in the following sections.

#### 4.2. Use of informative statement versus apologetic statement

Recall, we hypothesized that use of an informative statement would result in more positive ratings than use of an apologetic statement. Our present findings supported this hypothesis for ratings of friendly and confident, but this was not supported for the other ratings. Nevertheless, the use of an apologetic statement never resulted in significantly more positive ratings than the use of an informative statement. Furthermore, in contrast to the use of the apologetic statement, the use of the informative statement resulted in significantly more positive ratings than choosing not to self-disclose, with medium effect sizes. Thus, when advising adults who stutter regarding the utility of self-disclosure, clinicians should advise the value of self-disclosure, particularly when the statement is informative. That being said, additional research is warranted regarding whether providing more and/or varying the information within the self-disclosure statement may yield distinct benefits (See Boyle et al., 2017, for further discussion). Future research should explore the value of providing more of an educational statement or a more biological description of their stuttering when self-disclosing.

Another factor that may influence the potential benefit of using self-disclosure is the environment within which the speaker uses it. For the present study, the speaker self-disclosed at the beginning of a job interview. We selected this environment, as it was more ecologically valid than previous studies, wherein the speaker was reading aloud, and it holds direct clinical relevance to many of the adults we serve. Clinicians who are advising adults who stutter as to whether or not they should self-disclose when seeking employment can use the present findings as support for doing so in an informative manner. However, clinicians should be cautious when advising use across all environments as the present study findings may be limited to the potential employment setting. Additional research is needed regarding other settings wherein this strategy may or may not be of benefit.

#### 4.3. Effects of observer gender and prior experience with stuttering

Controlling for self-disclosure and speaker/observer gender, prior experience with stuttering significantly influenced the ratings of engaged. Observers who had more experience with stuttering were more likely to report being more engaged while listening to the speaker. These findings demonstrate the value of knowing someone who stutters, consistent with past research (e.g., Klaasen, 2001; Schlagheck, Gabel, & Hughes, 2009; cf., Gabel, Tellis, & Althouse, 2014). With regard to this rating, it can be inferred that past experience resulted in the listener being desensitized to the behaviors of stuttering and more focused on the content and the speaker rather than the speaker's stuttered speech. However, the magnitude of this result's effect size was small. Future research should explore whether the extent of the relationship (e.g., acquaintance, family member, etc.) and the accuracy of their understanding of stuttering mediates the influence of prior experience with stuttering.

Observer gender significantly influenced the ratings of how shy, unintelligent and insecure the speaker was, when controlling for self-disclosure, speaker gender and prior experience with stuttering. Male observers were more likely to rate speakers as more shy, unintelligent and insecure than female observers. Interestingly, gender also played a role in ratings of being engaged, confidence and intelligence, with female observers providing higher ratings than male observers. These findings seem to suggest that males may be more likely to rate speakers more negatively than female observers, and that female observers may be more likely to rate speakers more positively, at least for some characteristics. However, all the effect sizes for the significant results on gender were small.

#### 4.4. Additional considerations

Unipolar scales have been employed in previous self-disclosure studies (e.g., Healey et al., 2007). Nevertheless, use of a unipolar scale as opposed to a bipolar scale may have compromised the present findings. First, one could argue that this scale may have been difficult to interpret. However, the survey was piloted prior to distribution by 22 undergraduate and graduate students; none of the pilot participants reported confusion regarding the questions posed and/or the rating scale employed. Additionally, in the free response section of the survey, none of the 300+ participants reported difficulty completing and/or interpreting the scale. It is also critical to note that although the scales were not bipolar (e.g., friendly-unfriendly), we did employ separate unipolar scales for the positive and negative version of the trait (one for friendly, one for unfriendly, etc.). Thus, participants were evaluating a speaker's positive and negative traits in a balanced manner. Additionally, we included a scale that provided the neutral option on both the negative and positive version of the trait, as we wanted to allow for the possibility that the listener may not have sufficiently observed the presence of the trait to rate it positively or negatively. Had we employed the term moderately at the midpoint this would have indicated that the listener thought the speaker demonstrated that trait to a certain degree, but would not permit the rating of ambivalence that the neutral midpoint allows. Further, the selection of "not at all" is not equivalent to "neutral," as "not at all" suggests the person does not present with the trait to any degree (for example, the speaker was "not at all friendly"), whereas neutral

suggests that the observer did not observe anything of significance to note with regard to that trait. In other words, the rating of neutral does not indicate that listener is suggesting that the person did not present with that trait at all, but that within that observation there was nothing that influenced the speaker to rate the listener as presenting with that trait to a lesser or to a more significant degree. Future research should employ the same study using a bipolar scale to determine if the scale utilized yields disparate findings. Present results should be interpreted with caution given to the unipolar nature of the scale employed.

Additionally, the length of the videos participants viewed may have compromised the findings of the present study. Results may have differed if the observers had viewed the entire interview. However, significant research employing thin slice paradigms demonstrate that observers make split second judgements during initial interactions. Research further suggests that these split-second judgements are typically anchored to stereotypes and the first impressions that are formed within those initial introductory moments, significantly influence impressions throughout the remainder of the exchange (e.g., [Ambady et al., 2000](#); [Ames, Kammrath, Suppes, & Bolger, 2010](#); [Prickett, Gada-Jain, & Bernieri, 2000](#)). These data suggest that we could have employed a splice of less than 500 ms and still yielded meaningful differences in observer ratings. Nevertheless, we extended our clip in duration beyond the standard thin-slice to allow for an initial verbal exchange that either did or did not include a self-disclosure statement. We also selected to focus on the initial opening exchange given the data to suggest those initial moments influence perceptions of the entire interview. Additionally, we included this initial segment because self-disclosure data suggest that self-disclosing at the beginning as opposed to the end is preferred.

Another potential confound is that we did not employ a condition wherein there was no stuttering. Given the past literature to suggest that listeners are more likely to rate speakers who stutter severely more positively when they self-disclose, we chose not to include a condition with either mild and/or no stuttering. Future research should explore whether self-disclosing in an informative manner is uniquely beneficial to persons who stutter more severely. In addition, future research should explore the perspective of the person who stutters with regard to the benefit of use. Perhaps, as was suggested by [Lee and Manning \(2010\)](#), the clinical utility internally for the person who stutters warrants investigation. Perhaps, those persons who stutter more severely may perceive more benefit. Future research should examine this possibility.

The viewing of a recording is another limitation of the present study. Observers viewed a video that was designed to immerse them as best as possible in an interview exchange with a person who stutters. Future research should explore whether simulating this experience wherein the observer completes an interview with person who stutter may yield different findings. Yet another consideration in this regard is the nature of the exchange. Different scenarios may produce unique benefits to use of self-disclosure. For example, use at the beginning of an interview may differ from use prior to giving a speech, etc. We are presently exploring observers' perceptions immediately following distinct in-person interactions across different scenarios with persons who stutter who either do not self-disclose or self-disclose in a variety of ways.

## 5. Conclusion

Self-disclosure is a tool that can be used to reduce stereotype threat. Results from the present study suggest that self-disclosing in an informative manner within a job interview setting leads to significantly more positive observer ratings than choosing not to self-disclose. Present results also suggest that the use of an apologetic statement, for the most part, does not yield significantly more positive ratings than choosing not to self-disclose. Thus, when advising adults who stutter regarding the clinical utility of self-disclosure, clinicians should recommend they self-disclose in an informative manner if they are seeking more positive perceptions from listeners than they would receive if they chose not to self-disclose at all. That being said, disclosing stuttering may not be beneficial to all situations and/or to all persons who stutter as the decision to use it and the potential responses (both internal and external) may vary. Additional research is needed regarding whether or not there are other versions of the self-disclosure statement that could be more beneficial than the informative statement employed in the present study, and also whether the setting in which the speaker uses the statement makes a significant difference.

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**Appendix A**

Survey Questions

Demographic Questions

Are you a native English speaker?

- Yes
- No

Are you 18 years old or older?

- Yes
- No

What is your age (in years)?

What is your gender?

What is your race (e.g., White, African-American, etc.)?

What is your ethnicity (e.g., Latino or non-Latino)?

How friendly was the speaker?

Part I

For each of the following questions please rate the speaker in the video on a 1-7 scale (1=not at all, 4=neutral, 7=very).

How friendly was the speaker?

	Not at all			Neutral			Very
Friendly	1	2	3	4	5	6	7

How outgoing was the speaker?

	Not at all			Neutral			Very
Outgoing	1	2	3	4	5	6	7

How intelligent was the speaker?

	Not at all			Neutral			Very
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Intelligent 1 2 3 4 5 6 7

How confident was the speaker?

Not at all Neutral Very

Confident 1 2 3 4 5 6 7

How distracted were you when you were trying to listen to the speaker?

Not at all Neutral Very

Distracted 1 2 3 4 5 6 7

How unfriendly was the speaker?

Not at all Neutral Very

Unfriendly 1 2 3 4 5 6 7

How shy was the speaker?

Not at all Neutral Very

Shy 1 2 3 4 5 6 7

How unintelligent was the speaker?

Not at all Neutral Very

Unintelligent 1 2 3 4 5 6 7

How insecure was the speaker?

Not at all Neutral Very

Insecure 1 2 3 4 5 6 7

How engaged were you when listening to the speaker?

Not at all Neutral Very  
Engaged 1 2 3 4 5 6 7

#### Part II

For each of the following questions please provide an answer to the best of your ability.

Have you ever met someone who stutters?

Yes  
No

Have you ever personally known someone who stutters (other than yourself, if you are a person who stutters)?

Yes  
No

Have you ever stuttered?

Yes  
No

Have you been diagnosed as an individual who stutters by a licensed speech-language pathologist?

Yes  
No

Do you still stutter?

Yes  
No

How long have you stuttered?

Do you ever self-disclose about stuttering? (Example of self-disclosure: *just so you know I sometimes stutter.*)

Have you ever been taught specifically about stuttering (e.g., in school or at speech therapy)? Please describe.

Have you ever had any informal experiences with stuttering (e.g., reading a book about stuttering; watching a movie about stuttering, such as *The King's Speech*)? Please describe.

Please provide 1-3 comments about your perceptions of **the speaker.**

Please provide 1-3 comments about your perceptions of the **speaker's communication.**

If you have any additional comments, please feel free to write them in the space below.

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