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Differential Effects of Verbal and Written Disclosure on Perceptions of a Child Who Stutters

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by
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ABSTRACT

This study measured perceptions of a 12-year-old boy who stutters, relative to perceived speech skills and personal characteristics, as a function of seven potential stuttering disclosure conditions, featuring either a personal verbal disclosure, written disclosure, or no disclosure, delivered by various authors (i.e., self/child, mother, teacher). 641 participants college-aged adults were randomly assigned to one of seven stuttering disclosure groups: no disclosure control, verbal self-disclosure, written self-disclosure, verbal mother disclosure, written mother disclosure, verbal teacher disclosure, or written teacher disclosure. Participants in the control group viewed a brief video of a 12-year-old male who stutters reciting a short passage. Participants in the experimental groups viewed a disclosure statement followed by the same video used in the control condition. Immediately following the video, participants completed a survey quantifying their perceptions of the child who stutters relative to his speech skills and personal characteristics. Results from this study are consistent with previous research indicating positive changes in perceived characteristics of a child who stutters following a verbal disclosure, with perceived improvement particularly through verbal self-disclosure and verbal teacher disclosure. Positive perceptual changes were also perceived within the written mother-disclosure group, while written self-disclosure presented more perceived negative perceptions. Overall, the verbal disclosure was associated with more positive perceptual shifts of a child who stutters when compared to the written stuttering disclosure. While the use computer-mediated communication (CMC) is rapidly growing, research reveals that traits related to social anxiety are positively correlated with online communication. Additionally, the use of CMC removes multiple facets of communication

that can lead to inaccurate or negative interpretations of a speaker, therefore making the use of CMC less desirable when compared to verbal communication for the disclosure of stuttering.

TABLE OF CONTENTS

LIST OF TABLES AND FIGURES

TABLE OF ACRONYMS

PWS	People Who Stutter
CWS	Children Who Stutter
AWS	Adults Who Stutter
CMC	Computer-Mediated Communication

INTRODUCTION

Stuttering is typically defined as an involuntary fluency disorder (Craig et al., 2009) characterized by an atypical disruption in the forward flow of speech (Conture, 2001). Stuttering is identifiable by both its overt and covert characteristics (Bloodstein & Ratner, 2008). Overt characteristics pertain to manifestations observed in a person's speech, typically including repetitions, prolongations, and inaudible postural fixations. In contrast, the covert characteristics of stuttering pertain to a person's use of social engineering to avoid the detection of stuttered speech, such as word avoidances, substitutions, and circumlocutions (Bloodstein & Ratner, 2008).

As a result of overt and covert stuttering behaviors, negative stereotypes are frequently assigned to people who stutter (PWS) (Byrd et al., 2017). Stuttering stereotypes have the potential to negatively affect listeners' perceptions of non-speech related characteristics of PWS (Lass et al., 1992). One such example is data documenting that children who stutter (CWS), as young as 3 years of age, have been labeled as more guarded, nervous, shy, tense, afraid, and insecure when compared to a CWS (Betz et al., 2008). These stereotypes can also lead to negative preconceptions of school-age CWS from school administrators (Lass et al., 1994), teachers (Lass et al., 1992), and even speech-language pathologists (Lass et al., 1989).

These stereotypes, and their ramifications, have also been shown to continue into adulthood (Collins & Blood, 1990). Adults who stutter (AWS) are frequently negatively stereotyped, falling into categories such as nervous, anxious, and unintelligent due to

their speech (Byrd et al., 2017). Research also documented that AWS are stereotyped as best confined to a limited number of reduced or non-speaking careers (e.g., biologist, computer programmer) (Lass et al., 1992). Moreover, research also documents the perception that AWS are not suited for careers that involve significant oral communication (e.g., speech-language pathologist, guidance counselor) (Gabel et al., 2004). Within higher education, data reveals that college students give more negative responses to a professor who stutters in regard to fluency, rate of speech, and ease of listening (Lake et al., 2009).

Data also revealed that stuttering significantly affects many social aspects across the lifespan. Preschool-aged CWS have been shown to struggle more with skills such as pretend play, leadership, and conflict resolution (Langevin et al., 2009), while families of children who stutter report higher levels of emotional strain, family conflict, and difficulty managing their child's frustrations (Erickson & Block, 2013). In addition, it has been found that PWS display: (1) higher levels of emotional tension or discomfort in social situations as opposed to adults who do not stutter (Kraaimaat et al., 2002), and (2) higher levels of fear and chronic anxiety in demanding speech situations (Craig, 1990). As a result, quality of life is also affected by negative stuttering stereotypes. Research indicates a majority of PWS believe their lives have been influenced by either stuttering, their reactions to stuttering, or the reactions of others (Yaruss, 2010).

According to Yaruss (2002), a majority of AWS report having received speech treatment at some point in his or her life, with approximately 44% of respondents indicating they spent more than 5 years in treatment. These current treatments include: (1) stuttering modification strategies, (2) fluency shaping strategies, and (3) other speech-

motor strategies, with each offering a different method of modifying speech production as a means to reduce overt stuttering behaviors (Bloodstein & Ratner, 2008). Nevertheless, many participants in Yaruss' study indicated they did not maintain fluency post-treatment, and over half of the participants indicated they could not achieve the same level of fluency outside the treatment room (Yaruss et al., 2002). In addition, when PWS achieved a desired level of fluency, listeners typically reported that the speech sounded significantly more unnatural as a result of the therapy (Dayalu & Kalinowski, 2002).

Subsequently, PWS may look for supplements to mainstream treatment as a means of addressing the challenges of living with stuttering (Trichon & Tetnowski, 2011; Yaruss et al., 2002). Many PWS attend support groups that allow them to be surrounded by others who are facing similar stereotypes (Yaruss et al., 2002). As a result, members of these support groups reported lower internalized negative stigmas and were less likely to view fluency as highly important during conversation as opposed to people who were not involved in a support group (Boyle, 2013). Similarly, self-help conferences, specifically for PWS, provide social opportunities with other PWS and affiliation with a community (Trichon & Tetnowski, 2011). These self-help conferences and communities are perceived as a safe environment that promotes social interaction through planned or unplanned events (Trichon & Tetnowski, 2011). Therefore, these support groups are often encouraged to be utilized along with therapy (Bradberry, 1997).

Another alternative for individuals who stutter is to utilize a self-disclosure of stuttering (Healey et al., 2007). Generalized self-disclosure provides individuals, who may be subjected to stereotypes, the opportunity to share personal information about themselves in a controlled manner to a listener (McGill et al., 2018). In research studying

the paraplegic population, the individual disclosing his handicap was perceived as more appealing to respondents than an individual with the same handicap who did not disclose (Hastorf et al., 1979). Self-disclosure of stuttering has been used in therapy to aid in reducing the negative stereotypes often associated with stuttering (Byrd et al., 2017). Persons who self-disclose stuttering are more likely to be perceived as friendly, outgoing, and confident as opposed to speaker who does not disclose (Byrd et al., 2017). Research also indicates that people who do not stutter prefer to interact with PWS who acknowledge their stuttered speech (Collins & Blood, 1990), and those with higher overt severity seem to yield the most benefit (Collins & Blood, 1990). Increased use of disclosure has also been associated with higher levels of self-reported quality of life among PWS (Boyle et al., 2018). Similarly, assessing individuals with mental illness, an improved perception of self was found to be present among those who disclosed their condition (Corrigan et al., 2016).

Research indicates that self-disclosure has the potential to greatly benefit AWS by alleviating the negative stereotypes often attributed to them (Byrd et al., 2017). While recent data has shown that these positive effects of stuttering self-disclosure apply to the pediatric population as well (Byrd et al., 2017; Snyder et al., in press), it has also been indicated that children are less equipped to advocate for themselves (Martin et al., 1993). In lieu of this reality, researchers have investigated the efficacy of advocates verbally disclosing stuttering on a child's behalf (Snyder et al., in press). The study results indicated a significant main effect of verbal stuttering disclosure in regard to listener's improved perceptions of the child's speech skills (i.e., speech rate, ease of listening, and perceived handicap) (Snyder et al., in press). Furthermore, improved perceptions of the

child's personal characteristics were observed for the following trait pairs: calm/nervous, relaxed/tense, confident/insecure, friendly/unfriendly, outgoing/shy, competence/incompetence, approachable/unapproachable spectra (Snyder et al., in press). The results also revealed significant decreases in negative listener perceptions when the disclosure came from the child or his teacher. However, little to no significant changes in negative perceptions of the CWS were observed when the mother verbally disclosed stuttering (Snyder et al., in press).

The stuttering-disclosure research paradigm typically employs video or verbal disclosure methods (Boyle et al., 2018; Byrd et al., 2017; Healey et al., 2007; McGill et al., 2018). However, considering that (1) children often cannot effectively advocate for themselves (Martin et al., 1993), and (2) stuttering disclosure via child advocates yield differential results in regard to its efficacy(Snyder et al., in press), researchers continue to study novel or alternate stuttering disclosure strategies. As a result, written stuttering disclosure statements, provided by a CWS and his advocates, were investigated as a potential alternative to verbal disclosure of stuttering (Snyder et al., submitted) Specifically, Snyder et al., (submitted) studied the effects of written stuttering disclosure when provided by the child, mother, and teacher. Results indicated a significant main effect of written disclosure relative to ease of listening, as well as the calm/tense and relaxed/nervous personal characteristics trait pairs (Snyder et al., submitted). While both verbal and written disclosures have significantly influenced certain aspects of listener perceptions of a CWS, research has yet to investigate which of the two methods of stuttering disclosure provides optimal results for CWS, particularly as a function of who provides the disclosure statement. Therefore, the purpose of this research is to analyze the

efficacy of verbal versus written stuttering disclosures, as a function of the source of stuttering disclosure (e.g., child, mother, teacher) on listener perceptions of a CWS. That is, this study measures the effects of two independent variables (source of disclosure, method of disclosure) on the perceptions of a male CWS, as measured by perceived speech skills and personal characteristics.

METHOD

Stimuli

This study was structured after previous stuttering disclosure studies, measuring the effects of stuttering disclosure on (1) perceived speech skills and (2) personal characteristics of a CWS (Snyder et al., in press). The study measures the effects of two independent variables (source of disclosure, method of disclosure) on the perceptions of a male CWS, as measured by perceived speech skills and personal characteristics.

Core Stuttering Video Segment

All conditions in this study used a :55 second core video segment, featuring a 12-year-old boy who stutters providing a personal narrative of a recent American history homework assignment. An assessment on the :55 second core speaking passage utilized in all experimental conditions revealed 13.6% stuttering frequency, with the three longest stuttering moments averaging two seconds in length. Secondary stuttering behaviors included eye blinking and an irregular and fast rate of speech. Stuttered speaking segments were analyzed by two trained research assistants, revealing a 90% (SE=.057, $p<.000$) inter-judge reliability (Cohen's kappa) on the :55 second video segment and stuttering disclosure statement, respectively.

Independent Variable: Method of Stuttering Disclosure

One independent variable for this study pertained to the method of stuttering disclosure used by the child in the core speaking video—either verbal or written. The

same factual disclosure statements were used in both verbal and written experimental conditions.

Verbal Stuttering Disclosure

The child and his mother provided the video stimuli in this experiment, with the child's biological mother disclosing in both the "mother"-disclosure and "teacher"-disclosure conditions. Video segments were filmed in a quiet and well-lit room with the speaker's chest and head shown against a neutral-colored background. This video was shown immediately prior to the :55 second core video segment and included the introduction of the speaker, followed by the conditionally appropriate factual disclosure statement.

Written Stuttering Disclosure

The factual disclosure statements, which were presented for :30 seconds using white text on a black background, were displayed to participants. Immediately after the :30 second written disclosure segment, participants viewed the :55 second core video segment.

Independent Variable: Author of Stuttering Disclosure

This study compared four disclosure conditions, including: (1) a no disclosure control condition, (2) child self-disclosure, (3) mother-disclosure, and (4) teacher-disclosure. The wording of each of the disclosure statements was kept constant across all conditions. The only changes to the disclosure statement were in regard to appropriate pronoun use in order to accurately reflect both the speaker and the CWS. (The disclosure statements can be found in Appendix A.)

Survey

The survey used in all experimental conditions (Appendix B) was adapted from previous peer-reviewed publications measuring perceptions of those with fluency disorders (Snyder et al., in press). The survey examined listener perceptions of two dependent variables in response to the author and method of stuttering disclosure: (a) Speech Skills and (b) Personal Characteristics. The 'Speech Skills' section of the survey asked participants to assess the speech skills of the speaker. Each of the six questions used a 7-point scale, with lower numbers being more desirable on the scale. Additionally, the questions "In your opinion, how likely is this person to succeed in school?" and "Is your disbelief in the success related to the person's speech fluency?" were included in this section. The 'Personal Characteristics' section of the survey contained ten questions, which also utilized a 7-point scale, measuring the perceived personality characteristics of the speaker. An Internal Review Board (IRB) approved each study, as well as the survey used in this research.

Participants

The participants for all conditions consisted of college-age adults enrolled in a wide array of majors such as accounting, applied sciences, business, education, engineering, general studies, journalism, liberal arts, and pharmacy. Participants were recruited through word of mouth advertising, as well as general education courses from multiple institutions in North Mississippi. A total of 641 participant surveys were utilized for data collection in this study, with 58.95% of participants recorded as female and 41.05% of participants recorded as male. The mean age of participants was recorded as 20.1 years (SD = 1.88). Participants within the Department of Communication Sciences and Disorders, and those with family members, friends and/or close acquaintances who

stutter, were excluded from the data set. Participants were randomly assigned relative to major of study and gender in order for each condition to have balanced participant demographics.

Procedures

In each study, participants were given an IRB approved information and consent form. After reviewing and completing the form, each participant was assigned (1) to either the video or written experimental condition, and then (2) to either the no disclosure, child-disclosure, mother-disclosure, or teacher-disclosure condition. All conditions were presented to the participants via a laptop in a quiet and distraction-free room. Following the viewing of the video, participants were asked to complete the 16-item survey as described above.

Study Design & Analysis

Data was analyzed using a one-way ANOVA. Significant main effects were analyzed using a Bonferroni post-hoc analysis. Adjustments to the alpha level were made to reduce the likelihood of Type 1 errors. Accordingly, a p-value of 0.05 was divided by the number of questions per subtest, resulting in significance levels being defined as $p=0.008$ for the Speech Skills subtest and $p=0.005$ for the Personal Characteristics subtest.

RESULTS

Speech Skills

Survey results of perceived speech skills, as a function of verbal versus written stuttering disclosure, can be found in Table 1. Main effects of verbal versus written stuttering disclosure were found on perceptions of intelligibility, speech rate, ease of listening, and degree of handicap. No significant main effects were observed (after Type 1 error corrections) relative to significant perceptual changes in speech fluency [$F(7,654)=2.409$, $p<0.019$] or speech volume [$F(7,655)=1.007$, $p<0.425$].

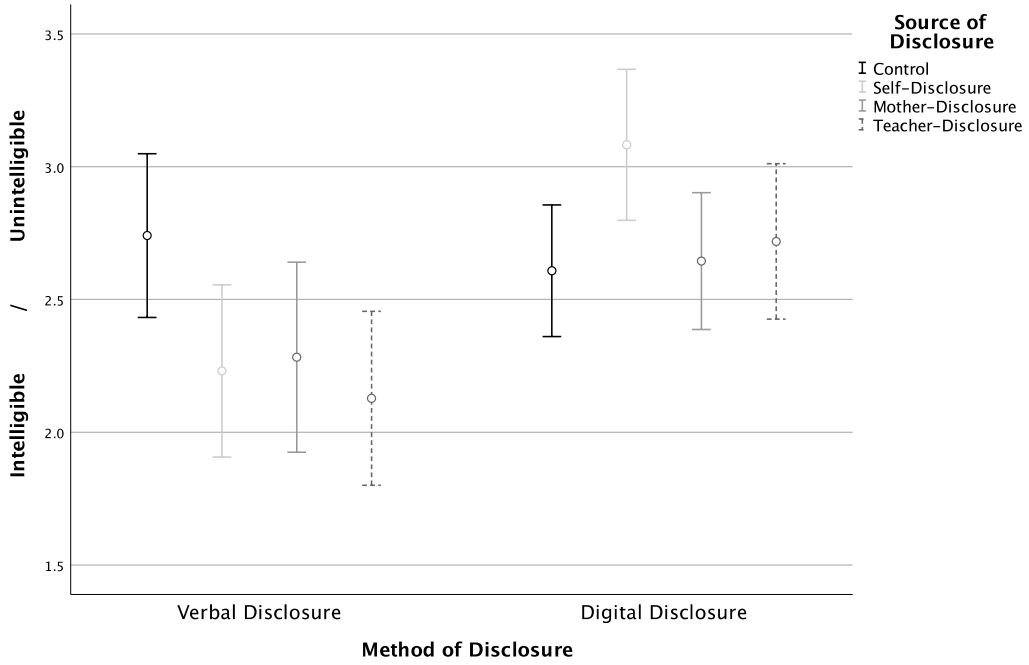
Table 1: Speech Skills

Speech Skill	F Statistic	P Value	Main Effect / Interaction
Speech Intelligibility	3.814	.000*	Method = .000*
			Author = .274
			Method x Author Interaction =.011
Speech Fluency	2.409	.019	Method = .139
			Author = .009
			Method x Author Interaction = .589
Speech Rate	4.217	.000*	Method = .008*
			Author= .004*
			Method x Author Interaction = .011
Speech Volume	1.007	.425	Method = .049
			Author = .427
			Method x Author Interaction = .699
Ease of Listening	4.456	.000*	Method =.135
			Author = .000*
			Method x Author Interaction = .128
Degree of Handicap	6.367	.000*	Method = .082
			Author = .000*
			Method x Author Interaction = .000*

Speech Intelligibility

A significant difference was observed in the intelligible/unintelligible speech skill continuum [$F(7,655)=3.814$, $p<0.000$]. A significant main effect relative to method of disclosure was found ($p<0.000$), and an insignificant main effect of author of disclosure ($p=.274$). These data indicate an insignificant interaction between the method and author of disclosure ($p=0.011$). This relationship can be observed in Figure 1.

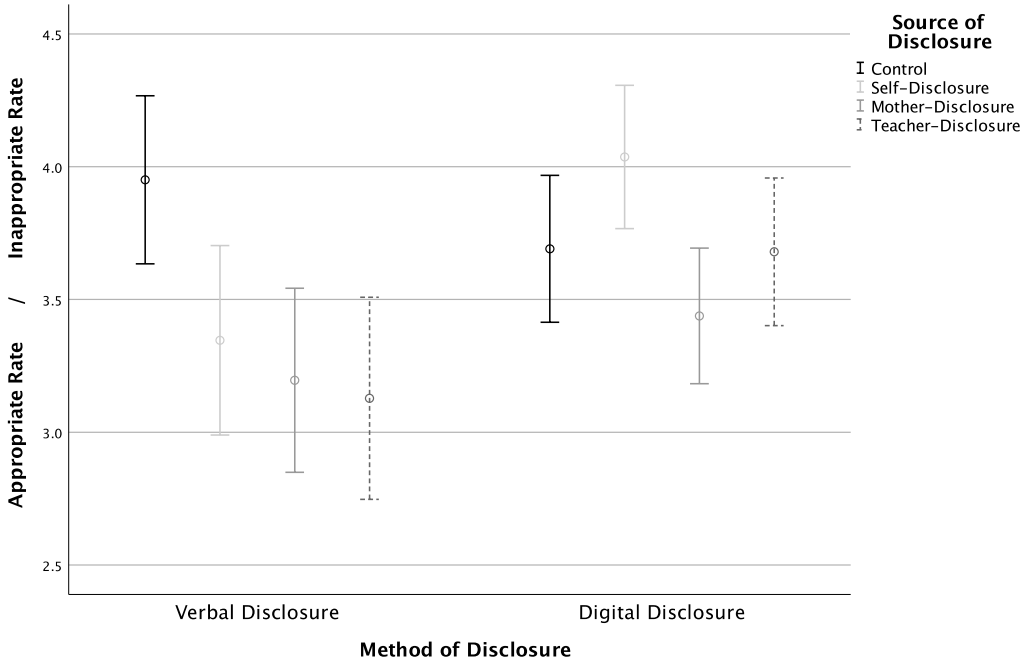
Figure 1: Speech Intelligibility



Speech Rate

A significant difference was observed in regard to speech rate [$F(7,655)=4.217$, $p<0.000$]. A significant main effect relative to method of disclosure was found ($p=.008$), as well as a significant main effect of author of disclosure ($p=.004$). These data also indicate an insignificant interaction between the method and author of disclosure ($p=.011$). This relationship can be observed in Figure 2.

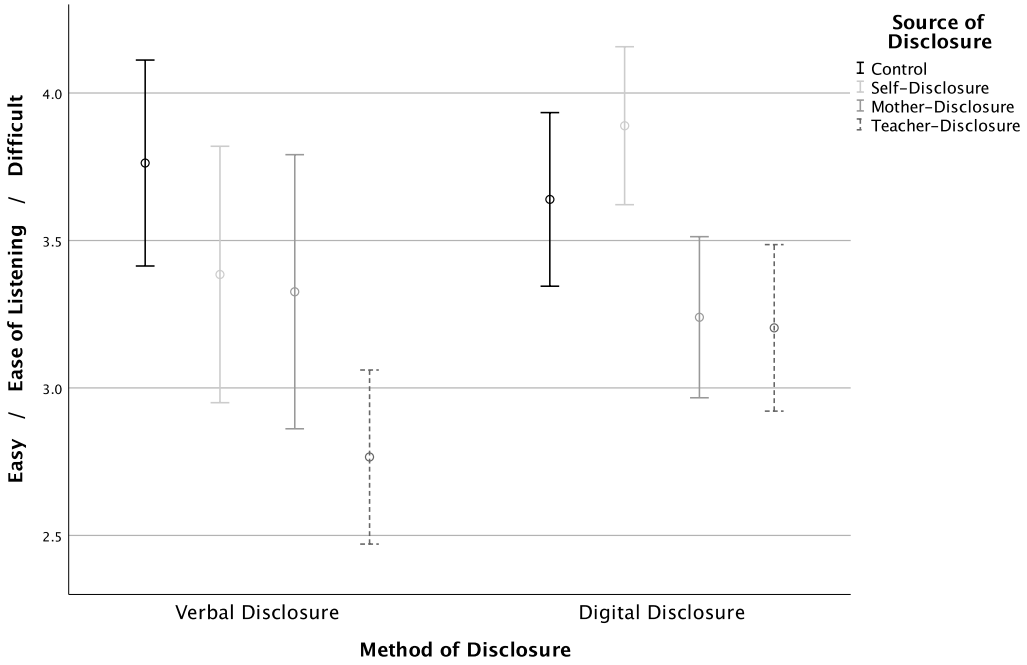
Figure 2: Speech Rate



Ease of Listening

A significant difference was observed in regard to ease of listening [$F(7,653)=4.456$, $p<0.000$]. An insignificant main effect was found relative to method of disclosure ($p=.135$), and a significant main effect relative to author of disclosure ($p<0.000$). These data also indicate an insignificant interaction between the method and author of disclosure ($p=.128$). This relationship can be observed in Figure 3.

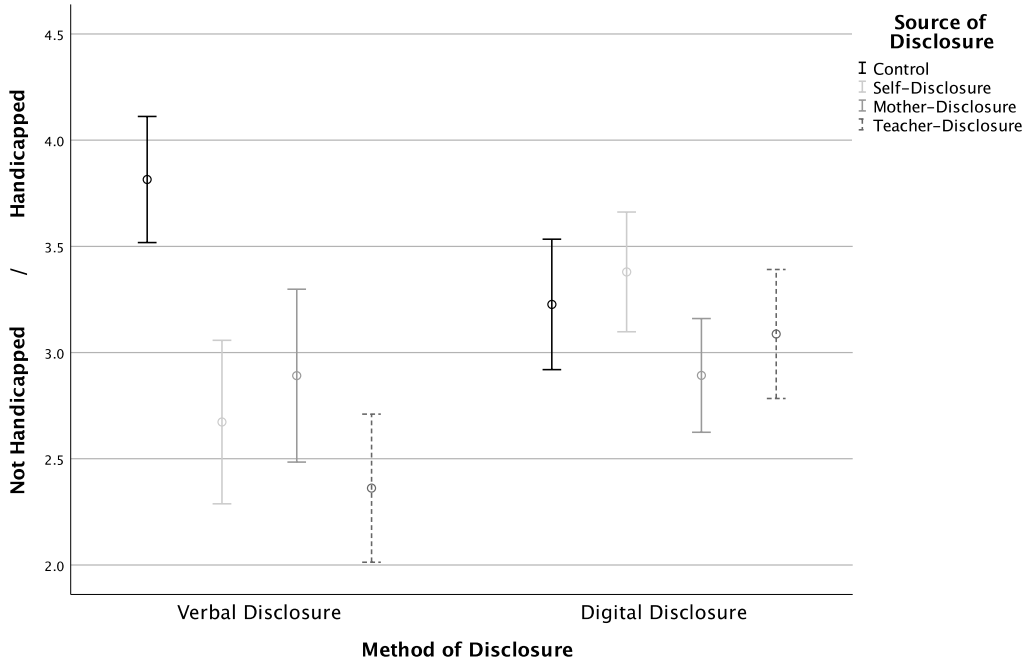
Figure 3: Ease of Listening



Degree of Handicap

Finally, a significant difference was observed in regard to degree of handicap [$F(7,654)=6.367$, $p<0.000$]. An insignificant main effect was found relative to method of disclosure ($p=.082$), while a significant main effect was found relative to author of disclosure ($p=.000$) These data also indicated a significant interaction between the method and author of disclosure ($p<0.000$). This relationship can be observed in Figure 4.

Figure 4: Degree of Handicap



Personal Characteristics

Survey results of perceived personality characteristics, as a function of verbal versus written stuttering disclosure, can be found in Table 2. A main effect of verbal versus written stuttering disclosure was found on participant responses relative to the following trait pairs: calm/nervous, reliable/unreliable, relaxed/tense, unafraid/fearful, confident/insecure, outgoing/shy, and competent/incompetent. No main effects were found (after Type 1 error corrections) relative to participant perceptions on the following spectrums: intelligent/unintelligent [$F(7,650)=1.343$, $p<0.227$], friendly/unfriendly [$F(7,652)=1.711$, $p<0.104$], and approachable/unapproachable [$F(7,653)=2.417$, $p<0.019$].

Table 2: Personal Characteristics

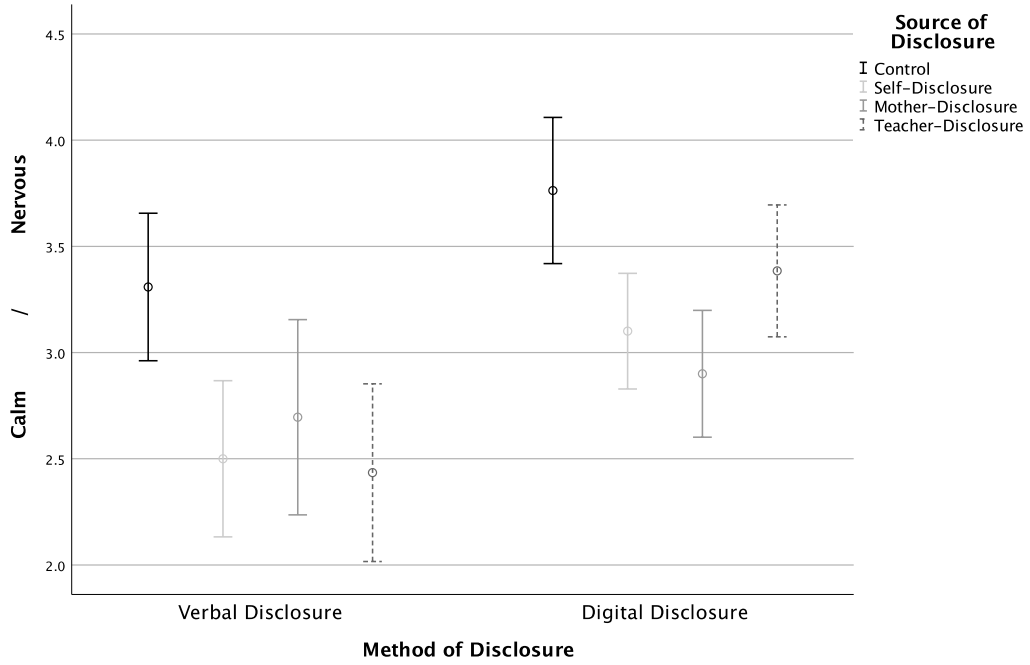
Personal Characteristic	F Statistic	P Value	Main Effect / Interaction
Calm/Nervous	6.226	.000*	Method = .000*
			Author = .000*
			Method x Author Interaction = .270
Reliable/Unreliable	2.769	.008*	Method = .030
			Author= .367
			Method x Author Interaction = .014
Relaxed/Tense	7.951	.000*	Method = .000*
			Author = .000*
			Method x Author Interaction = .000*
Unafraid/Fearful	3.023	.004*	Method = .074
			Author = .006*
			Method x Author Interaction = .061
Intelligent/Unintelligent	1.343	.227	Method = .904
			Author = .564
			Method x Author Interaction = .061
Confident/Insecure	4.056	.000*	Method = .399
			Author = .002*
			Method x Author Interaction = .002*
Friendly/Unfriendly	1.711	.104	Method = .508

			Author = .459
			Method x Author Interaction = .029
Outgoing/Shy	3.920	.000*	Method = .231
			Author = .031
			Method x Author Interaction = .000*
Competent/Incompetent	3.837	.000*	Method = .004*
			Author = .029
			Method x Author Interaction = .004*
Approachable/Unapproachable	2.417	.019	Method = .047
			Author = .280
			Method x Author Interaction = .006*

Calm/Nervous

A significant difference was observed in the calm/nervous personal characteristic pair [$F(7,654)=6.226$, $p<0.000$]. A significant main effect relative to method of disclosure was found ($p<0.000$), as well as a significant main effect of author of disclosure ($p<0.000$). These data indicate an insignificant interaction between the method and author of disclosure ($p=.270$). This relationship can be observed in Figure 5.

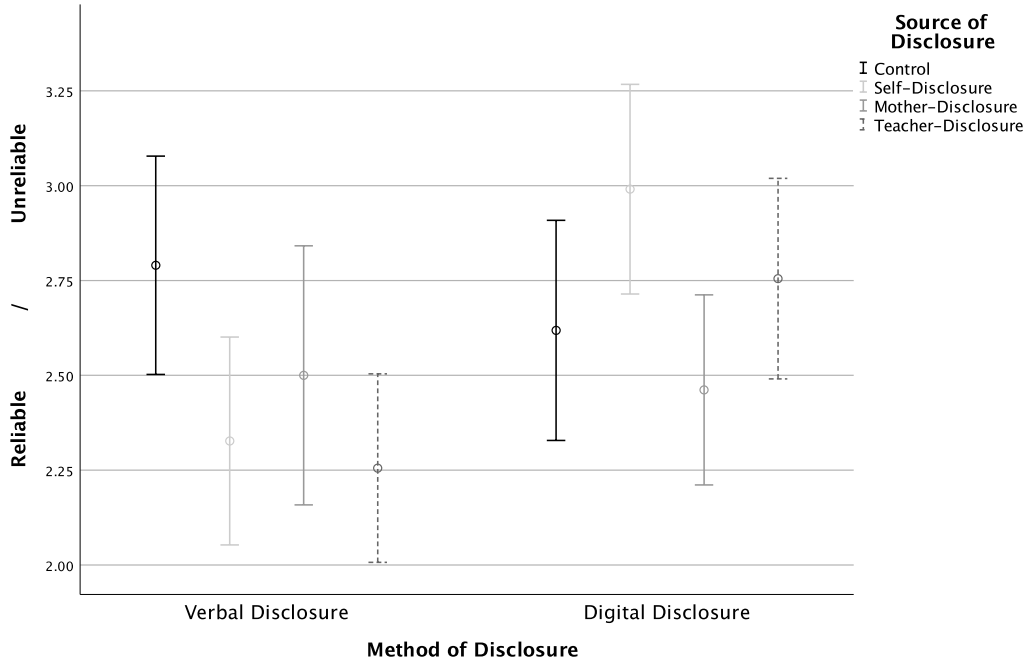
Figure 5: Calm/Nervous



Reliable/Unreliable

An insignificant difference was observed in regard to the reliable/unreliable trait pair [$F(7,650)=2.769$, $p=0.008$). An insignificant main effect was found relative to both the method of disclosure ($p=.030$) and author of disclosure ($p=.367$) with an interaction of author and method at .014. This relationship can be observed in Figure 6.

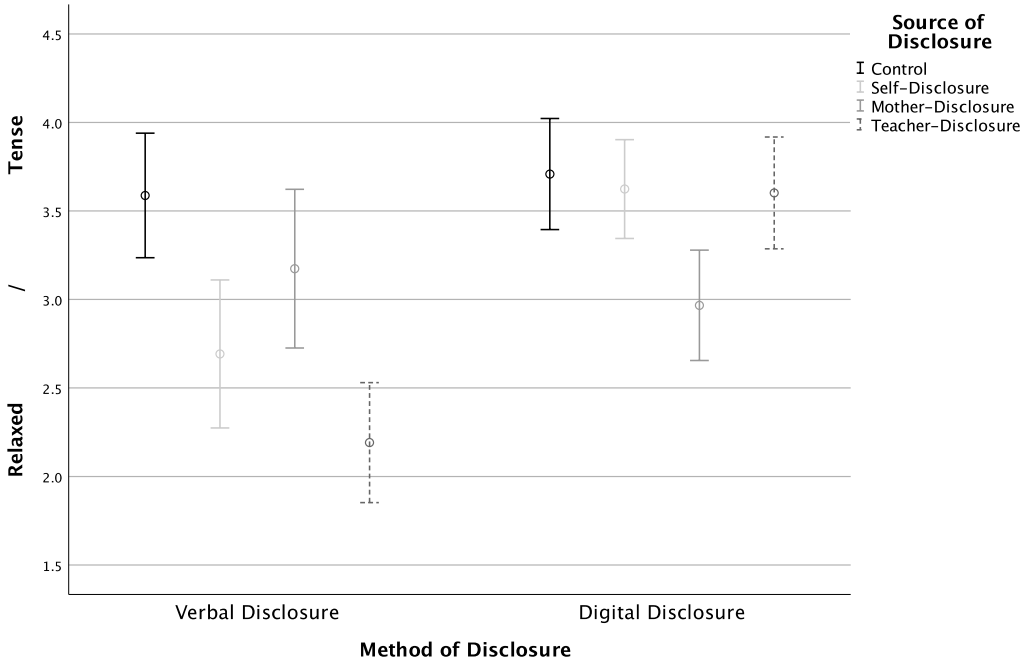
Figure 6: Reliable/Unreliable



Relaxed/Tense

A significant difference was observed in the relaxed/tense personal characteristic pair [$F(7,652)=7.951$, $p<0.000$]. A significant main effect was found relative to both method of disclosure ($p<0.000$) and author of disclosure ($p<0.000$). These data indicated a significant interaction between the method and author of disclosure ($p<0.000$). This relationship can be observed in Figure 7.

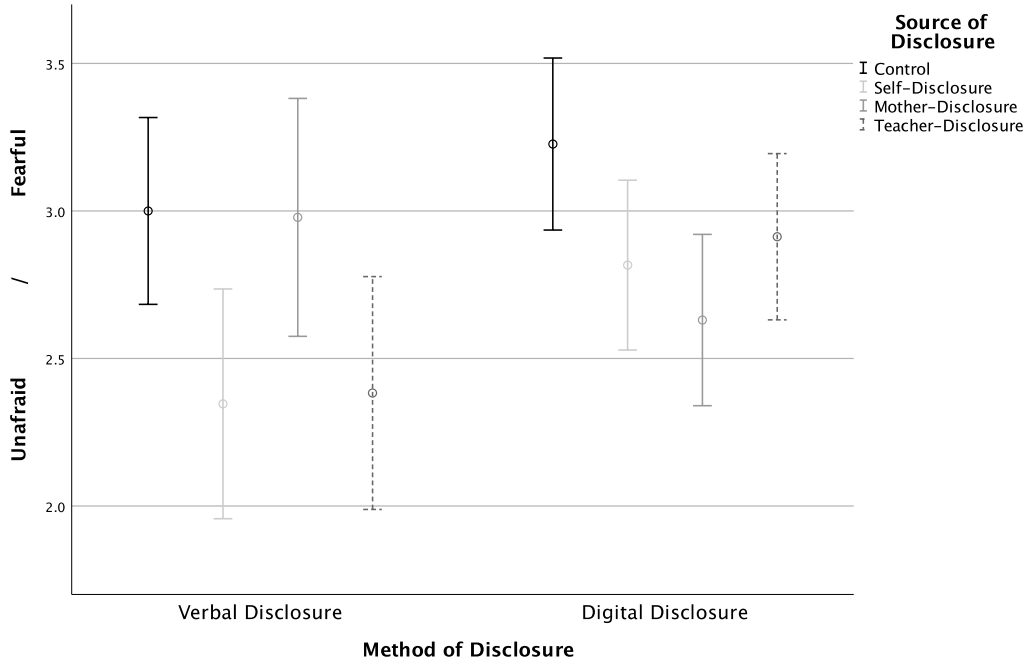
Figure 7: Relaxed/Tense



Unafraid/Fearful

A significant difference was observed relative to the unafraid/fearful personal characteristic pair [$F(7,653)=3.023$, $p=0.004$]. An insignificant main effect was found relative to method of disclosure ($p=.074$), while a significant main effect was found relative to author of disclosure ($p=.006$). These data also indicated an insignificant interaction between the method and author of disclosure ($p=.061$). This relationship can be observed in Figure 8.

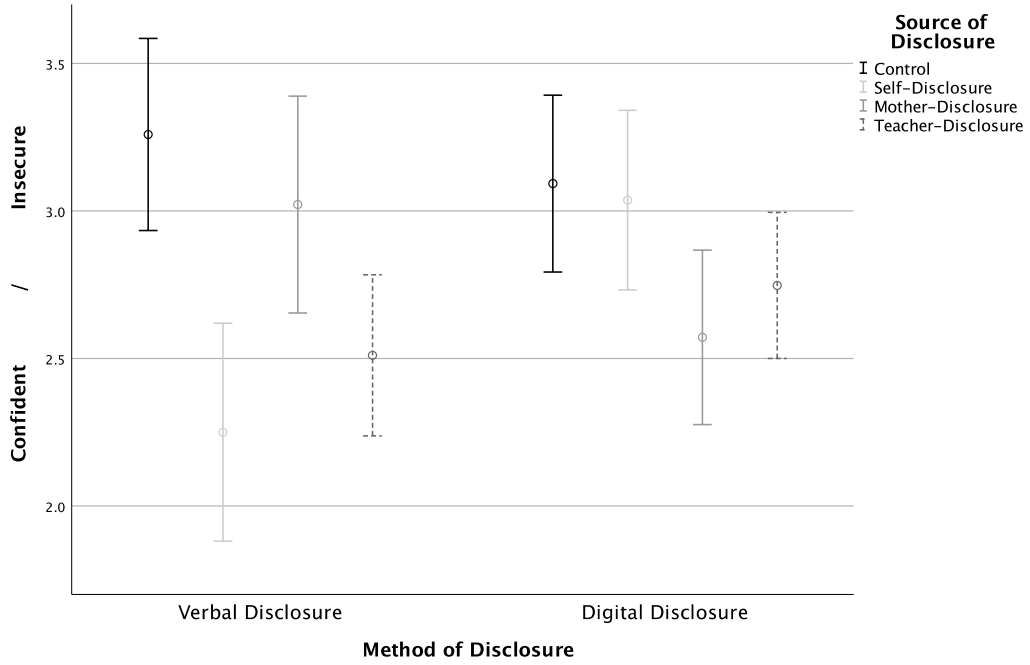
Figure 8: Unafraid/Fearful



Confident/Insecure

A significant difference was observed in regard to the confident/insecure pair [$F(7,653)=4.056$, $p<0.000$]. An insignificant main effect was found relative to the method of disclosure ($p=.399$), while a significant main effect was found relative to author of disclosure ($p=.002$). These data indicate a significant interaction between the method and author of disclosure ($p=.002$). This relationship can be observed in Figure 9.

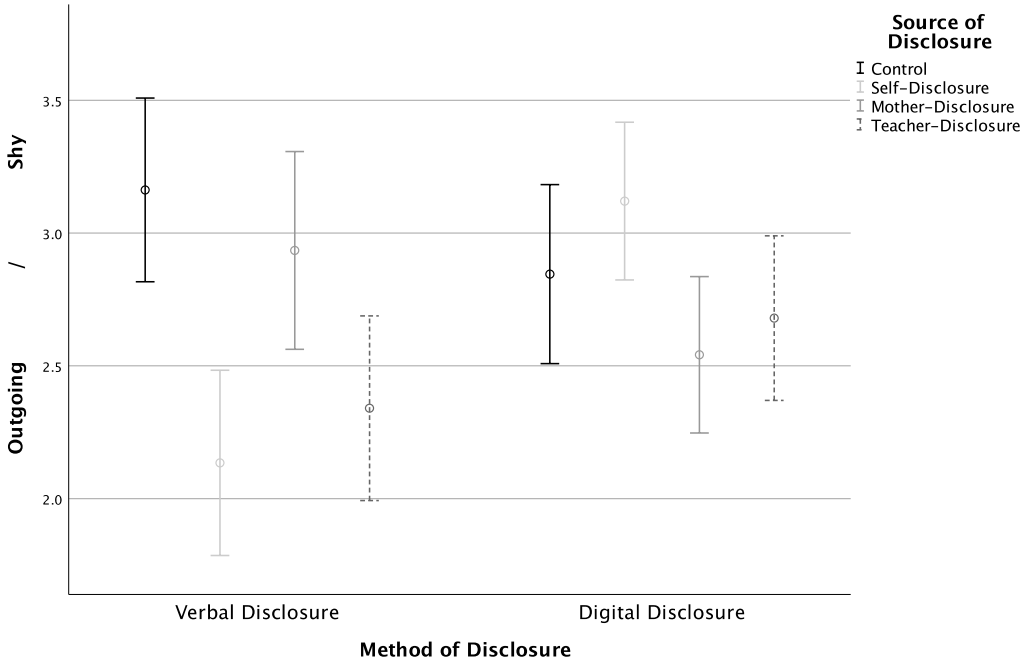
Figure 9: Confident/Insecure



Outgoing/Shy

An insignificant difference was observed in regard to the outgoing/shy pair [$F(7,652)=3.920$, $p<0.000$]. An insignificant main effect was found relative to both method of disclosure ($p=.231$) and author of disclosure ($p=.031$). These data also indicate a significant interaction between the method and author of disclosure ($p=.000$). This relationship can be observed in Figure 10.

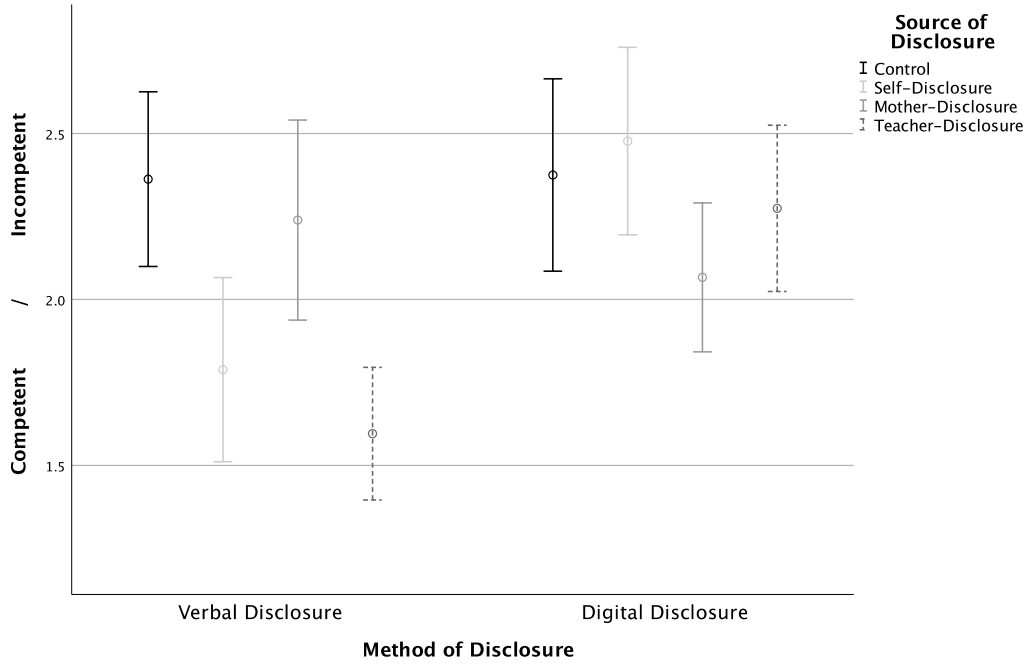
Figure 10: Outgoing/Shy



Competent/Incompetent

A significant difference was observed in regard to the competent/incompetent trait pair [$F(7,651)=3.837$, $p<0.000$]. A significant main effect was found relative to method of disclosure ($p=0.004$), while an insignificant main effect was found relative to author of disclosure ($p=.029$). These data indicate a significant interaction between the method and author of disclosure ($p=.004$). This relationship can be observed in Figure 11.

Figure 11: Competent/Incompetent



DISCUSSION

Data from this study suggest a greater potential for successfully decreasing negative perceptions of speech skills and personal characteristics of a CWS through verbal self-disclosure, written mother disclosure, and verbal teacher disclosure. However, more positive perceptions were observed with verbal disclosure overall. In contrast, more negative perceptions were observed as the result of using a written self-disclosure overall. Potential reasoning for this can be found in recent research on how written communication, specifically written electronic communication, is used and often unfavorably perceived in everyday life (Byron, 2008; High & Caplan, 2009; Leary & Kowalski, 1995; Riordan & Kreuz, 2010; Shepherd & Edelmann, 2005; Tanis & Postmes, 2003).

As of today, approximately 3.9 billion individuals use email around the world, with over 293 billion emails sent each day, making email the most widely used form of computer-mediated communication (CMC) (The Radicati Group, 2019). However, email lacks multiple elements of personal interaction that are typically utilized to help a listener understand a presented message, such as eye-contact, visual gaze, vocal intonation, and gestures, (Kiesler et al., 1984). The absence of the cues in CMC can subsequently lead to both ambiguous and negative interpretations of the speaker's message (Byron, 2008; Riordan & Kreuz, 2010).

In addition, research suggests that socially anxious individuals tend to seek out less threatening contexts, such as CMC, when looking to share personal information (High & Caplan, 2009; Leary & Kowalski, 1995). Since electronic communication provides perceived anonymity to the speaker, removing face-to-face communication may

reduce the fear of negative evaluation that has been tied with low ego strength, anxiety, and depression (Shepherd & Edelmann, 2005). Nonetheless, observable traits of social anxiety have been observed to carry over to one's online presence (Weidman & Levinson, 2015). Since anxiety and social phobia have been related to both shyness and low levels of resilience (Min et al., 2013; Turner et al., 1990), the possibility of carry-over could then diminish the perceived benefits of a person with social anxiety utilizing CMC over face-to-face communication (High & Caplan, 2009; Weidman & Levinson, 2015).

Study Limitations and Further Research

Potential limitations in this research could be found in relation to sample size and demographic, as some populations may not have been accurately represented within the surveyed sample of college students. Additionally, the survey was administered without providing an operational definition of stuttering to participants, which may have resulted in inaccurate reports of previous experiences with stuttering from participants. Finally, due to the nature of the study, participant responses may have been affected by social desirability responding, with some individuals providing more positive responses despite the anonymous collection of all data.

Further research in this area could continue to explore and compare the effects of verbal versus written disclosure on the perceptions of PWS by examining how these results compare to disclosure effects on perceptions of adolescents and AWS. Further research, specifically with CWS, could also continue with examining the effects of different authors of disclosure. For example, fathers, speech-language pathologists, clinicians, or other community members could be assessed. Likewise, research could also

expand to explore different methods of disclosure, such as handwritten disclosure, telephone disclosure, and live disclosure. Similarly, population samples in future research should expand beyond college-aged participants to other demographics, such as children, teachers, employers, and the general population.

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