Outcomes of Telepractice Speech Therapy for an Adult who Covertly Stutters: A Case Study

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1. <u>Introduction</u>

Stuttering is a fluency disorder characterized by both overt and covert behaviors which result in disruptions in the flow of speech production. Overt stuttering behaviors may include prolongations, single-syllable or whole-word repetitions, and/or blocks (Bloodstein & Ratner, 2008); whereas covert stuttering behaviors may include avoidance of stuttering, mentally scanning ahead for possible moments of stuttering when speaking, as well as using interjections or verbal starters (e.g., Constantino et al.2017; Douglass et al., 2018). People who stutter (PWS) often present with a combination of both overt and covert stuttering behaviors which may have an impact on their communication and overall quality of life (e.g., Yaruss, 2010; Constantino et al., 2017). The majority of treatment research published related to stuttering in adults explores the utility of treatment approaches toward overt stuttering and with participants who identify as persons who stutter overtly (e.g., O'Brian et al., 2008; Sicotte et al., 2003). As a result, the current literature lacks representation for people who covertly stutter, warranting further exploration of treatment research related to covert stuttering. The current paper attempts to expand the horizon of treatment research related to stuttering by exploring covert stuttering with a participant who self-reports few overt stuttering behaviors and who self-identifies as a covert stutterer.

### 1.1 Covert and Overt Stuttering

As shown in Figure 1, Sheehan's iceberg analogy of stuttering models the individual's experience of stuttering beyond the primary overt stuttering behaviors (Sheehan Stuttering Clinic, n.d; Sheehan, 1970). At the surface level, an individual may demonstrate overt stuttering behaviors such as blocks, prolongations, single-sound or syllable repetitions, or whole-word repetitions. Although listeners can hear and observe these behaviors, as demonstrated in Sheehan's iceberg analogy, these overt stuttering behaviors only make up a small portion of the speaker's experience of stuttering. The larger, concealed portion of the iceberg represents the experiences that cannot be physically perceived such as false roles, avoidance, guilt and/or shame (Sheehan Stuttering Clinic, n.d.). Although Sheehan's iceberg analogy of stuttering can be used to describe all people who stutter, it is a useful tool to represent how the experience of stuttering can manifest both overtly and covertly. Some individuals may effectively conceal the overt symptoms of stuttering by way of avoidance of stuttering.

The experience of stuttering associated with covert behaviors has been described as "covert stuttering", "hidden" or "masked stuttering" or, more commonly used in the U.K., "interiorized stammering" (Douglass, 2019). Douglass et al. (2019) reported that "passing as fluent" has been used interchangeably with the concept of covert stuttering; however, it should be noted that "passing as fluent" describes how a speaker is perceived by the listener

whereas "covert stuttering" may specifically refer to moments of stuttering in which the speaker successfully conceals their stutter.

Douglass et al. (2018) suggested that the awareness or anticipation of an overt stuttering behavior may result in the selection of a covert stuttering behavior as a coping mechanism in reaction to negative listener responses, feeling of physical discomfort or tension, or feeling a loss of control over speech production. Covert stuttering behaviors may include strategies such as the use of interjections, scanning ahead in speech, abandoning a stuttered utterance, or even silence (Constantino et al., 2017; Douglass et al., 2018). Douglass et al. (2018) noted that people who stutter have been described to be in a "state of constancy" where they experience heightened, constant awareness of potential stuttering moments. This constant awareness of stuttering and attempts to conceal their stutter can lead to negative affective, cognitive and emotional impacts for the speaker. These impacts can lead to shame, anxiety, and frustration associated with stuttering and being an individual who stutters (e.g., Douglass et al., 2018). As a result, people who stutter may experience increased psychological distress in social settings, workplace settings, and their everyday lives (Constantino et al., 2017; Douglass et al., 2018).

Figure 1: Sheehan's Iceberg Analogy of Stuttering
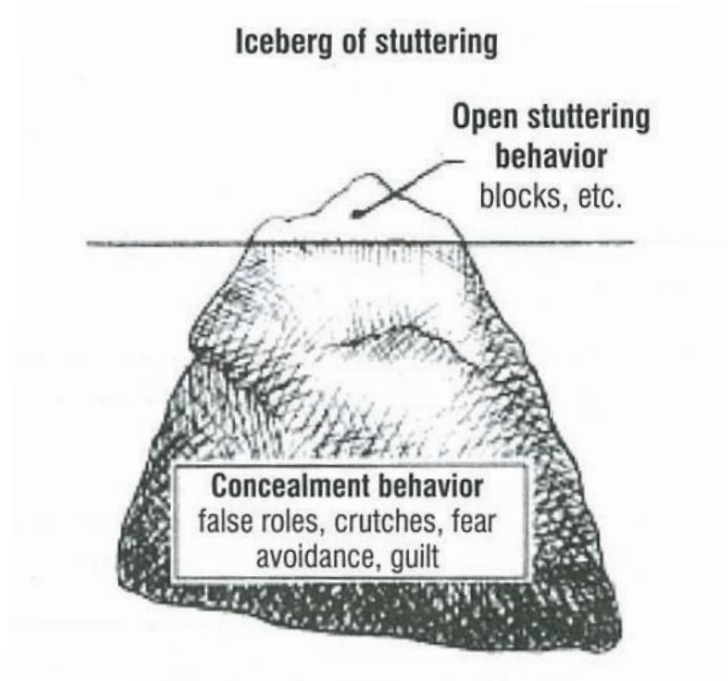
1.2 Intervention Experiences of People who Covertly Stutter

Intervention for stuttering has classically focused on fluency-based therapy goals which target the overt components of stuttering. However, as

previously mentioned, stuttering is a multifaceted communication disorder that may impact individuals physically, cognitively, and emotionally (Douglass et al., 2018). Thus, for people who covertly stutter and present with minimal overt stuttering, addressing fluency as a goal may be counterintuitive. As a result, intervention for people who stutter should be holistic in nature to address an individual's entire experience of stuttering as opposed to solely focusing on improving fluency (Douglass, 2018). Few studies have addressed the importance of holistic treatment approaches for people who covertly stutter (e.g., Douglass et al., 2018, Douglass et al., 2019; Douglass 2020). Results of qualitative studies on the experiences of people who covertly stutter (PWCS) with speech-language therapy revealed that clients benefitted from partnering with speech-language pathologists (SLPs) who were knowledgeable about stuttering, created an accepting environment that encouraged them to stutter freely, and were adept in counseling (Douglass, 2018). Additionally, clients reported that there is a need for SLPs to provide intervention that does not solely focus on fluency. Due to the unique experiences of all people who stutter, there is a need for holistic speech-language services that address the individual's entire experience of stuttering in terms of their overt and covert stuttering behaviors (Douglass et al., 2019; Douglass et al., 2020). Finally, given that all PWS have distinct and unique experiences of their stutter, the need for individualized treatment that caters to each client's needs and goals for therapy are necessary as there is no single intervention that can be applied to every client (Douglass et al., 2020).

Thus, implementing a holistic intervention approach that addresses both the covert and overt nature of stuttering ensures that clinicians are providing individualized treatment plans that incorporate the three pillars of evidence-based practice: external and internal evidence, clinical expertise, and client perspectives (Douglass, 2020). By following the evidence-based practice (EBP) model, clinicians can partner with clients who stutter to create an environment that best suits the client's values and goals for therapy. Douglass et al. (2020) recently reported that information regarding EBP for people who covertly stutter remains fairly limited. Additionally, regarding stuttering in general, SLPs have reported feeling underprepared in treatment of stuttering due to a lack of academic and clinical experiences in their graduate programs (Coalson et al., 2016). With limited research literature on covert stuttering as well as limited experiences with stuttering, it is reasonable that covert stuttering remains poorly understood by SLPs. Thus, there is a significant need for more research to expand the evidence base for intervention with people who covertly stutter.

1.3 Telepractice

The current study was conducted via telepractice; thus, it is important to review the definition and experiences of clinicians with this specific service delivery model. The American Speech-Language-Hearing Association (ASHA)

defines telepractice as a service delivery model with which SLPs may provide a variety of services at a distance including "assessment, intervention, and/or consultation" (n.d.). Through telepractice, clients benefit from remote access to treatment by way of videoconferencing platforms (e.g., Zoom or Skype) as an alternative to physically attending appointments. Lowe et al. (2013) noted that telepractice has made services available in a variety of settings including schools, universities, and rehab centers as well as more informal, naturalistic locations such as the client's home and workplace. Snodgrass et al. (2016) notes that with the increase in accessibility to speech-language pathology services, telepractice reduces barriers to care (e.g., commutes and scheduling conflicts) that would normally prevent individuals from seeking services in-person.

Increasing the evidence base is especially important for special populations who may benefit from the accessibility that telepractice provides by connecting individuals with specialists and subspecialists (Mashima & Doarn, 2008). Given that SLPs continuously report feeling uncomfortable working with clients who stutter (e.g., Byrd et al., 2020; Coalson et al., 2016; Gabel, 2014; Kelly et al., 1997; St. Louis, 1997; St. Louis & Durrenberger, 1993), connecting a person who stutters to an SLP who specializes in stuttering may improve the treatment outcomes and/or provide more individualized treatment options (McGill et al., 2019).

Additionally, the onset of the COVID-19 global pandemic has created a significant need for more research related to evidence-based treatment via telepractice. In response to the White House Coronavirus Task Force guidelines during the COVID-19 global pandemic, national, state, and local officials have limited in-person services to decrease the transmission of COVID-19 (White House, 2020). According to a survey conducted by ASHA in March and May of 2020, COVID-19 has impacted the majority of SLPs in a major way and the provision of telepractice services in private practices and schools has increased by more than 70% (ASHA, 2020). Thus, there is a critical need to better understand how covert stuttering may be treated in a holistic manner using telepractice.

1.3 Stuttering and Telepractice

A recent systematic review by McGill et al. (2019) of seven studies including 80 participants who stutter highlighted that speech therapy services using telepractice using a variety of formats (i.e., purely telepractice or a hybrid, in-person and telepractice) as well as populations (i.e., children, adolescents and adults) appeared to produce positive outcomes for the treatment of stuttering and showed promise for future research.

Only one of the eight articles reviewed (Kully, 2000) in the McGill et al. (2019) paper explored treatment via telepractice with an adult who stutters. Kully (2000) reported successful utilization of telepractice for follow-up sessions with an adult who had previously received intensive in-person therapy services. The

majority of studies (87.5%) evaluated in the McGill et al. (2019) systematic review were conducted with children who stutter, further highlighting the critical need for research regarding the outcomes of telepractice-based intervention for adults who stutter.

1.4 Purpose of the Current Study

Given the dearth of information about covert stuttering and established efficacy of telepractice to treat PWCS as well as the increase in online service delivery, it is imperative to establish protocols and explore the usefulness of telepractice to treat PWCS and to provide more opportunities for these individuals to connect with specialists. The research questions for the current study are:

1. To what extent can an adult who covertly stutters increase positive attitudes, perceptions, and emotions related to stuttering through weekly telepractice therapy sessions, as evidenced by his scores on the OASES-A?
2. To what extent can an adult who covertly stutters decrease his avoidance of stuttering through weekly telepractice therapy sessions?
3. To what extent can an adult who covertly stutters increase his overt stuttering behaviors
   (%WS) through weekly telepractice therapy sessions?

2. Method

2.1 Participant

The participant was a 44 year-old adult male who covertly stutters. He was a native English speaker and self-reported that he had not previously been enrolled in speech-language pathology services for stuttering. Additionally, he self-identified as an adult who covertly stutters, but was not previously diagnosed with stuttering by a speech-language pathologist prior to enrolling in the current study. This study was approved by the authors' university's Institutional Review Board (#163961) and the participant provided written informed consent for audio and video recording for research purposes prior to the first session.

2.2 Experimental Design

The study employed a single case study design which included a baseline phase, an intervention phase, and a maintenance phase. Single case studies and single subject experimental designs are beneficial in that they allow the client to serve as their own control (Ryer & Poll, 2020) and can be individualized to reflect the client's unique therapy trajectory. As opposed to randomized control trials (RCTs) which control for multiple variables, evidence shows that single case studies are beneficial in situations where group study outcomes cannot be applied to each individual in real-life settings (Byiers et al., 2012). Stuttering is variable on a day-to-day basis, with severity (i.e., frequency, intensity, and duration) varying across different contexts and conversation partners (Constantino et al., 2016; Alameer et al., 2017). As a result, single case designs may be more

informative to clinicians and researchers by identifying treatment outcomes for a specific client as opposed to determining a single optimal treatment for all PWS.

The participant in the current study received bi-weekly speech-language pathology services over the course of 9 weeks in Spring 2020, including weekly 1-hour individual sessions and 1-hour group sessions, through the Portland State University (PSU) Oregon Scottish Rite of Freemasonry Speech and Language Clinic. Maintenance sessions were conducted during Summer 2020 as a follow-up to the baseline and treatment phases previously completed.

Treatment was individualized to meet the participant's specific communication needs and goals for intervention. Creating an individualized treatment plan ensures that clinicians address the client's specific goals for treatment and generate patient-centered outcomes (e.g., Fry et al., 2009; Blomgren, 2013). The current study's research questions and the long-term goals for the participant were developed in tandem with one another using the three areas of evidence-based practice (i.e., external and internal evidence, clinician expertise/experience, and client perspectives; Evidence-Based Practice, 2020). Prior to the participant's baseline sessions, the authors identified possible research questions that would be relevant to telepractice treatment with a client who covertly stutters. Then, during the baseline sessions, the graduate student clinician discussed the participant's specific goals for treatment. These *a priori* and client-generated goals were noted to be similar in nature.

The participant's full treatment plan, including long-term and short-term goals for the Spring 2020 term is included as Appendix A. Weekly data points of the participant's frequency of stuttering and self-report of avoidance were implemented as outcome measures.

2.2.1 Baseline

The baseline phase consisted of the participant's initial evaluation and his first two individual sessions. Multiple baseline sessions are necessary for single case studies to determine data stability by which to compare future intervention phases (Byiers et al., 2012). The participant's initial evaluation was used as the first baseline session. The evaluation was conducted by a graduate student clinician in a speech and hearing sciences master's program supervised by the first author, who is the clinical supervisor for the telepractice fluency clinic. The evaluation included a participant interview, a reading sample, administration of the *Overall Assessment of the Speaker's Experience of Stuttering - Adult Version (OASES-A;* Yaruss & Quesal, 2010)*,* and generation of a speaking hierarchy (i.e., identifying speaking situations from easiest to most challenging). The participant interview was used as a conversational speech sample.

Both the participant's conversational and reading speech samples were coded for the percentage of words stuttered (%WS). Whether a clinician should conduct disfluency counts with words or syllables as the defined unit continues to

be a debated topic in speech-language pathology. Yaruss (2000) reported that previous research has shown that it is possible to convert between word and syllable counts in adults' speech production using a standard conversion factor of 1.5 syllables per word. Thus, the %WS for the participant's conversational and reading samples were converted to %SS prior to applying the frequency count information to the *Stuttering Severity Instrument-4th Edition (SSI-4*; Riley, 2009). The *SSI-4* and *OASES-A* were performed prior to intervention to determine the participant's baseline levels of overt and covert stuttering behaviors.

The *SSI-4* is a stuttering severity instrument that analyzes the frequency of stuttering, the duration of stuttering moments, and the physical concomitants that may be present during moments of stuttering. The *SSI-4* results in a severity rating and descriptor as compared to other adults who stutter (Riley, 2009). The *OASES-A* is a 100-question survey consisting of four sections which ask the client who stutters about their attitudes toward and experiences of stuttering. The *OASES-A* provides a comparison to other adults who stutter and results in an impact score, indicating the amount of impact that stuttering is having on the client's life. The four sections of the *OASES-A* are as follows: General Information (Section 1), Your Reactions to Stuttering (Section 2), Communication in Daily Situations (Section 3), and Quality of Life (Section 4) (Yaruss & Quesal, 2010).

Section 1 of the *OASES-A* includes general information about the individual's speech, knowledge of stuttering (e.g., knowledge about factors that affect stuttering or treatment options for people who stutter) and how they feel about certain aspects of stuttering (e.g., how they feel about being a person who stutters). Section 2 evaluates the speaker's reactions and views toward their stuttering. Section 3 targets the individual's perceived impact of stuttering in various aspects of their life. Section 4 includes questions regarding how stuttering impacts the speaker's quality of life (e.g., the impact of stuttering on their self-worth, confidence, or career choices). A total impact score is also yielded by averaging the scores from each section on the *OASES-A* (Yaruss & Quesal, 2010). Taken together, the *SSI-4* and *OASES-A*, along with other non-standardized measures of communication attitudes and stuttering experiences, yielded baseline data from which the participant's progress was measured.

Following his initial evaluation, the next two baseline sessions consisted of the following components: client-clinician introductions, collaborative goal setting, and discussions regarding the participant's experiences as a person who stutters. Additionally, the participant was asked to reflect on his baseline knowledge about stuttering (e.g., causes of stuttering and myths or facts about stuttering), his avoidance of stuttering (e.g., his avoidance strategies and situations during which he avoids stuttering), and his overall self-image as a communicator.

At the start of each baseline session, the participant reflected on his communication throughout the past week and self-reported his avoidance of stuttering. The participant was asked, "How would you rate your avoidance of stuttering over the past week using a Likert-scale of 1= never, 2= rarely, 3= sometimes, 4= often, and 5= always)?" The participant's self-report of avoidance over the past week provided insight about the participant's use of avoidance strategies outside of the clinical environment and in typical communication settings (e.g., during work meetings or with novel communication partners). The participant was then asked to read a 150-word passage which was later coded for the participant's %WS. The participant also engaged in a conversation with the clinician at the beginning of each session, resulting in a 300-word conversational speech sample which was later coded for the participant's %WS. At the end of the session, the participant was asked to rate his avoidance of stuttering throughout his session with the graduate student clinician using the same 1-5 Likert-scale.

2.2.2 Intervention

The participant completed six individual and six group telepractice sessions via Zoom during the intervention phase, with one individual session cancellation by the graduate student clinician (Session 7) due to personal illness. Similar to the format of baseline sessions, the participant was asked to provide a self-report of his avoidance of stuttering 1) over the past week during typical communication settings (e.g., during work meetings or with communication partners) and 2) during his individual treatment session with the student clinician. In addition, similar to baseline, a reading sample of 150-words and a 300-word conversational sample were both coded for the participant's %WS.

During his individual speech therapy sessions, the participant engaged in holistic speech therapy to address both the covert and overt aspects of his stuttering experience. The participant was encouraged by the graduate student clinician to stutter freely and self-identify when he used avoidance behaviors if he felt comfortable doing so. The foundation of the participant's speech-language therapy sessions were built upon aspects of stuttering modification, avoidance reduction, and Acceptance and Commitment Therapy (ACT) in alignment with the participant's goals for therapy as a person who covertly stutters.

Stuttering modification and ACT are two of several therapeutic approaches for working with PWS. Stuttering modification involves the individual increasing their awareness of stuttering, identifying when moments of stuttering will occur, and identifying and reducing physical tension during moments of stuttering (Van Riper, 1973). ACT allows individuals to confront their preconceived notions of stuttering, their reactions to stuttering, and the impact that stuttering has on their lives. ACT aims to enable the individual to acknowledge that stuttering is a part of their identity that is out of their control, but also acknowledge that their identity is not solely defined by their

communication. Thus, individuals are encouraged to focus on goals outside of fluency and create attainable goals that align with their personal values and life goals (Amster & Klein, 2018). Both stuttering modification and ACT were integral components of the treatment protocol implemented with the participant in the current study.

The telepractice treatment phase of the current study was catered toward the participant's long term goals created with the clinician during the baseline sessions which were as follows: 1) discuss topics centered on acceptance of stuttering, 2) continue education about stuttering, and 3) practice techniques/tools to reduce avoidance of stuttering moments. Lesson plans were created by the graduate student clinician in collaboration with the first author (i.e., the supervising SLP) to create short-term objectives for each session that matched the participant's long-term goals. See Appendices B1 and B2 for examples of lesson plans used with the participant to address the long- and short-term goals outlined in the treatment plan.

The graduate student clinician provided the participant with counseling and/or educational components within each session. To provide education on stuttering, the clinician provided the participant with multi-media resources of interest (e.g., research articles and StutterTalk podcast episodes) on acceptance of stuttering to review together within session. Additionally, the participant was introduced to identification of stuttering moments and cancellation, which are stuttering modification techniques. The participant was oriented to the use of the technique, and practiced cancellation at the single-word, sentence, and conversational level as accuracy of technique use progressed. Additionally, the participant practiced voluntary stuttering, a desensitization strategy, at the single-word level and eventually increased to the conversational level as his comfort with the technique increased. Each session, the clinician gave the participant time to practice and self-reflect on his use of the chosen techniques. Finally, the clinician provided feedback on the participant's use of the techniques practiced within each session.

In addition to practicing overt stuttering modification techniques, the participant created a self-disclosure statement and reflected on future use of self-disclosure to identify himself as a person who stutters to novel communication partners. The participant and clinician then collaboratively created a speaking hierarchy which ranked contexts in which he was least to most comfortable using self-disclosure (e.g., with family, friends, or coworkers). At the end of the intervention phase, the clinician and the participant created SMART goals that would assist the participant with identifying situations where he would be comfortable practicing his self-disclosure statement with others in the future.

During weekly group telepractice treatment sessions, the participant engaged in conversations with four additional adults who stutter about both overt

and covert aspects of stuttering and their impact on daily life. Graduate student clinicians lead these semi-structured sessions by providing a general topic of discussion and facilitating a group environment. All group participants were encouraged to stutter freely and/or use speech therapy techniques such as stuttering modification and fluency shaping as they felt comfortable. Although the participant attended six group sessions, he was not asked to report his level of avoidance of stuttering during these sessions. Appendix C contains a sample lesson plan for the group therapy sessions.

2.2.3 Maintenance

The maintenance phase began a week after the intervention phase was completed. All sessions were completed through telepractice. The maintenance phase consisted of three short follow-up sessions at 2-week (session 11), 1-month (session 12), and 2-month (session 13) post-intervention with both the first and second author. During the first follow-up session post-treatment, the participant was interviewed about his experiences with telepractice treatment, which are included as qualitative results. Additionally, in all maintenance sessions, the participant self-reported his avoidance of stuttering for the week prior to the maintenance sessions as well as his avoidance of stuttering during his current session. In addition, a 300-word conversational sample was coded during each maintenance session to establish the participant's %WS. The *OASES-A* was also readministered to provide a post-intervention measure to compare with his baseline scores.

2.3 Technology

All phases of the study were conducted via telepractice using Zoom Pro, a videoconferencing platform that allows for synchronous audio and video connection. All sessions were recorded through Zoom and stored in a secure online cloud system for later viewing and data coding. The graduate student clinician and participant both connected from their homes using a secured internet connection during all phases of the current study. Additionally, group therapy sessions via telepractice were conducted via Zoom with each client and clinician connecting from their homes using a secured internet connection.

2.4 Data Coding, Fidelity & Interrater Reliability

Coding for all disfluencies (based on %WS) for all sessions was completed by the second author who was an undergraduate student with three years of experience as a clinician assistant (CA) in the PSU Stuttering Lab at the time of the study. The researcher completed training on how to code for both stuttering and non-stuttering disfluencies for people who stutter, as well as human subjects research protocol training (i.e., CITI training). Stuttering disfluencies were operationally defined as whole-word repetitions, single sound or syllable repetitions, audible sound prolongations and inaudible sound prolongations (blocks). Non-stuttering disfluencies were operationally defined as interjections,

phrase repetitions, revisions, or "other," which were disfluencies that did not fit into any specific category. To establish interrater reliability, a second clinician assistant independent from the present study completed disfluency coding for %WS independently for 35% of the total sessions, using conversational samples from all phases of the study (i.e., 2 from baseline, 2 from intervention and 1 from maintenance). Coding from both CAs resulted in 100% agreement for all sessions, with coding in agreement if the total %WS for each sample fell within plus or minus 1% of each other. It should be noted that the high inter-rater reliability was likely assisted by the fact that the participant presented with a low frequency of overt stuttering (i.e., less than 3%), enabling the two clinician assistants to conduct disfluency count coding without much discrepancy in their categorization of stuttering moments.

To guarantee intervention fidelity, a fidelity checklist (Appendix D) was completed by the graduate student clinician for every session, excluding post-intervention check-ins during the maintenance phase. The fidelity checklist was used as a guideline for the student clinician to follow each session, including topics that must be addressed during the session (e.g., an educational/counseling component, introduction of a therapy technique, and participant reflection on the use of therapy techniques). A third CA independently completed the fidelity checklist for more than 20% of the total sessions to establish interrater reliability, with 100% agreement for all chosen sessions, except one which resulted in 89% agreement. To address this discrepancy in interrater reliability, the clinician assistants met and reviewed the fidelity checklist together and discussed questions which resulted in clarification of which strategies met the fidelity checklist criteria. Together, the clinician assistants determined that all portions of the fidelity checklist had been addressed during the session in question and resulted in 100% agreement.

## 3. Results

3.1 Avoidance of Stuttering

To review, the participant's avoidance of stuttering was measured via self-report using a Likert scale of 1-5 where 1= never, 2= rarely, 3= sometimes, 4= often, and 5= always. The participant self-reported his avoidance of stuttering both within sessions with the graduate student clinician and outside of sessions within his natural communication settings (e.g., at work or with frequent communication partners). In addition, the participant's avoidance of stuttering was analyzed pre-treatment and post-treatment using the *OASES-A*.

3.1.1 OASES-A Scores

The participant's responses to the *OASES-A* during baseline were averaged within sections and resulted in the following severity/impact scores: Section 1) 3.81, Section 2) 4.3, Section 3) 4.14, and Section 4) 4.16, which corresponds to an overall total impact score of 4.14. These *OASES-A* scores

indicated that the participant felt stuttering was having a severe impact on his communication and quality of life. The post-intervention *OASES-A* revealed that the participant demonstrated a reduction in scores across all four sections of the questionnaire. The post-intervention severity scores were as follows from each section: Section 1) 3.32, Section 2) 3.63, Section 3) 3.43, and Section 4) 3.52, resulting in an overall total impact score of 3.49. As shown in Figure 2, the participant's total impact score on the *OASES-A* was lower at post-intervention compared to pre-intervention.

Figure 2. Comparison of pre- and post-intervention scores for all 4 sections of the OASES-A.
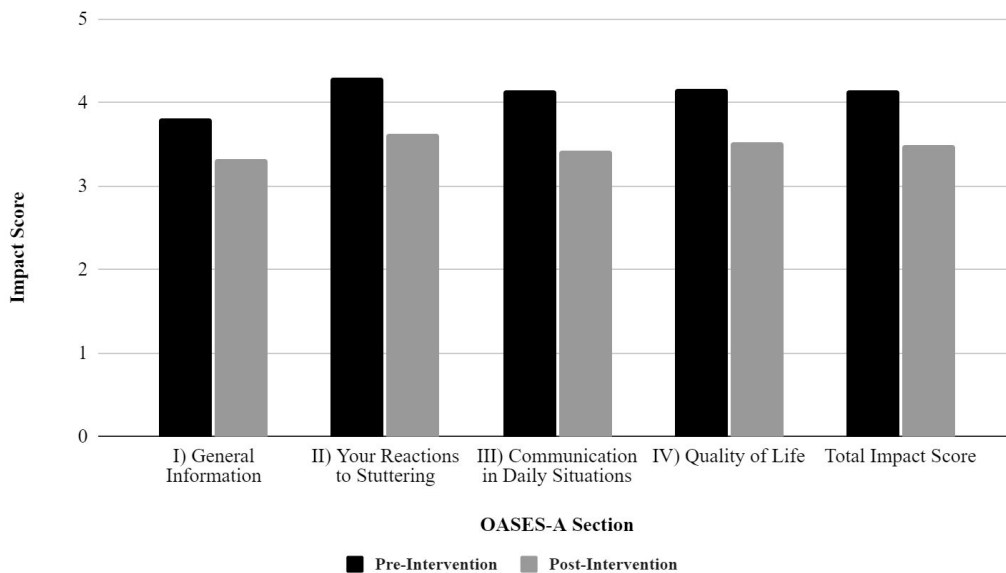
Further inspection of the participant's answers to the pre- and post-intervention *OASES-A* revealed four major changes on questions 5, 40, 49, and 50 in the participant's self-report that were directly relevant to the present study. As shown in Figure 3, the participant demonstrated notable changes in their answers to these questions regarding avoidance and acceptance of stuttering. Regarding avoidance of stuttering, the participant's answers to questions 5 and 40 demonstrate positive changes in the maintenance phase as compared to baseline. Additionally, the participant's answers on questions 49 and 50, related to acceptance of stuttering, demonstrated notable changes during the maintenance phase compared to baseline.

Figure 3: *OASES-A* Responses: Pre-and Post-intervention. Responses that changed post-intervention are bolded.

OASES-A Questions	Pre	Post
How often do you say exactly what you want to say even if you think you might stutter?	Never	Rarely
Overall, how do you feel about being a person who stutters?	Very Negatively	Very Negatively
Overall, how do you feel about being identified by other people as a stutterer/person who stutters?	Very Negatively	Very Negatively
How often do you avoid speaking in certain situations or to certain people?	Often	Often
How often do you leave a situation because you think you might stutter?	Often	Often
How often do you let somebody else speak for you?	Often	Sometimes
I cannot accept the fact that I stutter.	Strongly Agree	Somewhat disagree
I do not have confidence in my abilities as a speaker.	Somewhat agree	Somewhat disagree
Overall, how much does stuttering interfere with your sense of self-worth or self-esteem?	Completely	Completely
Overall, how much does stuttering interfere with your outlook on life?	A lot	A lot

3.1.2 Avoidance of Stuttering during Treatment Sessions

At the end of the participant's weekly individual telepractice speech-language therapy sessions, the participant was asked, "How would you rate your avoidance of stuttering within this session?" using the aforementioned 1-5 Likert scale. During the baseline sessions, the participant's ratings ranged from "sometimes" avoiding stuttering to "often" avoiding stuttering. As shown in Figure 4, the participant reported "often" avoiding stuttering in their initial evaluation session, which dropped to "sometimes" in the two subsequent baseline sessions. At the start of intervention, the participant's rating of avoidance of stuttering immediately dropped from their final baseline rating of "often" avoiding stuttering to "rarely" avoiding stuttering during session. The participant maintained a consistent rating of "rarely" avoiding stuttering for five weeks (with the exception of session 7 which was cancelled due to graduate student clinician illness). During sessions 9 and 10, the participant self-reported "never" avoiding stuttering within sessions. During the maintenance phase, the participant maintained a consistent rating of "rarely" avoiding stuttering at the 2-week (session 11), 1-month (session 12), and 2-month (session 13) post-intervention

check-ins. Overall, the participant's self-report of avoidance of stuttering within sessions during both the intervention and maintenance phases maintained consistently lower than their baseline self-reports of avoidance of stuttering.

3.1.3 Avoidance of Stuttering for the Week Prior to Treatment Session

At the start of the participant's weekly individual telepractice speech-language therapy sessions, the participant was asked, "How would you rate your avoidance of stuttering within the past week?" using the aforementioned 1-5 Likert scale. Within the baseline sessions, the participant consistently self-reported "often" avoiding stuttering outside of sessions. As shown in Figure 4, during the intervention phase, the participant's responses to the prompt were highly variable compared to the stability in his self-reports of avoidance within therapy sessions. During intervention, the participant's responses ranged from "rarely" avoiding stuttering to "often" avoiding stuttering outside of sessions. At sessions 6 and 8, the participant's ratings overlapped with baseline self-ratings of "often" avoiding stuttering outside of sessions. The participant's lowest ratings of avoidance outside of therapy sessions occurred during sessions 9 and 10, which were the last two sessions of the intervention phase. During the maintenance phase, the participant reported "sometimes" avoiding stuttering outside of the baseline sessions consistently at the 2-week (session 11), 1-month (session 12) and 2-month (session 13) post-intervention check-ins. Overall, during the maintenance phase, the participant's rating of "sometimes" avoiding stuttering outside of therapy sessions remained lower than the participant's baseline ratings of "often" avoiding stuttering within sessions.

3.2. Frequency of Stuttering

The *SSI-4* was administered as a standardized outcome measure both pre- and post-intervention. Throughout the participant's baseline, intervention, and maintenance sessions, the participant's frequency of stuttering was measured using a 150-word reading sample and a 300-word conversational sample.

3.2.1 SSI-4 Scores

Pre-intervention, the participant's scores on the subsections of the *SSI-4* were as follows: Frequency = 4; Duration = 2; Physical Concomitants = 2 with a total score of 8, indicating a percentile range from 1-4 with a severity descriptor of "very mild." His post-*SSI-4* scores were as follows: Frequency = 7; Duration = 8; Physical Concomitants = 2, with a total score of 17, falling in the percentile range of 5-11. As demonstrated by these results, during the post-intervention *SSI-4* measure, the participant's severity scores for frequency and duration of stuttering increased while his severity score for physical concomitants remained the same.

3.2.2 Stuttering-like Disfluencies in Conversation

Upon visual inspection of data in Figure 4, it is apparent that there is variability in the participant's stuttering throughout the course of the study and

within each phase. Overall, despite variability, there appears to be a trend of increasing %WS which can be observed to continue into the maintenance period. The highest %WS is noticeably highest during the maintenance phase as compared to baseline.

When observing both the participant's self-reported avoidance rating score during therapy sessions and the %WS during sessions 4-10, there appears to be an inverse relationship. That is, as the participant's avoidance of stuttering decreases over time, his %WS increases as shown in Figure 4. This increase in overt stuttering frequency is also supported by the post-SSI-4 results which demonstrated an increase in both stuttering frequency and duration as compared to the participant's initial evaluation.

3.2.3 Stuttering-like Disfluencies during Reading Samples

The participant demonstrated nearly 0% WS on all reading samples from baseline through intervention. The participant self-reported utilizing speech tools which resulted in slowed speech rate and facilitated fluency while reading. Thus, the participant's %WS during reading samples was not considered to be an appropriate measure of this specific participant's therapeutic outcomes and was excluded from the maintenance follow-up sessions.

### 3.3 Participant Experience with Speech-Language Therapy via Telepractice

The participant self-reported that he had never sought out or received speech-language services for stuttering prior to the present study. Additionally, the participant self-reported that he had never received in-person speech-language therapy services prior to receiving services via telepractice. Thus, the participant was interviewed post-intervention to elaborate on his experiences with speech-language therapy for stuttering to gather information regarding their impressions of the use of telepractice as an alternative service delivery model.

The participant reported that receiving services via telepractice was a convenient and accessible option for him as his busy work schedule would have typically interfered with receiving in-person services. He expressed that it was easy for him to adapt to the technology used for the present study (i.e., Zoom) after one session. The participant reported that telepractice treatment was "invaluable," especially following the impact of the COVID-19 global pandemic on accessibility to in-person services. When asked what he would improve about the telepractice treatment he received, he noted that he "wish[ed] that they were longer."

Regarding intervention, the participant expressed satisfaction with both individual and group therapy experiences. He outlined benefits of both experiences, stating that "the individual [sessions] focuses on me and like what I'm going through, but then group allows me to see how others are dealing with their stutters." Additionally, he reflected on topics discussed in sessions such as articles related to the "science of stuttering" and "less academic" conversations

that were more personalized in terms of discussing individual experiences with stuttering. He also expressed that while he sees the value in receiving services via telepractice that he liked the idea of having the option to attend some in-person group sessions in the future.

Figure 4. A comparison of weekly ratings of avoidance within and outside of sessions to the %WS. Avoidance was measured using a Likert scale of 1-5 where 1= Never, 2= Rarely, 3= Sometimes, 4= Often and 5= Always.
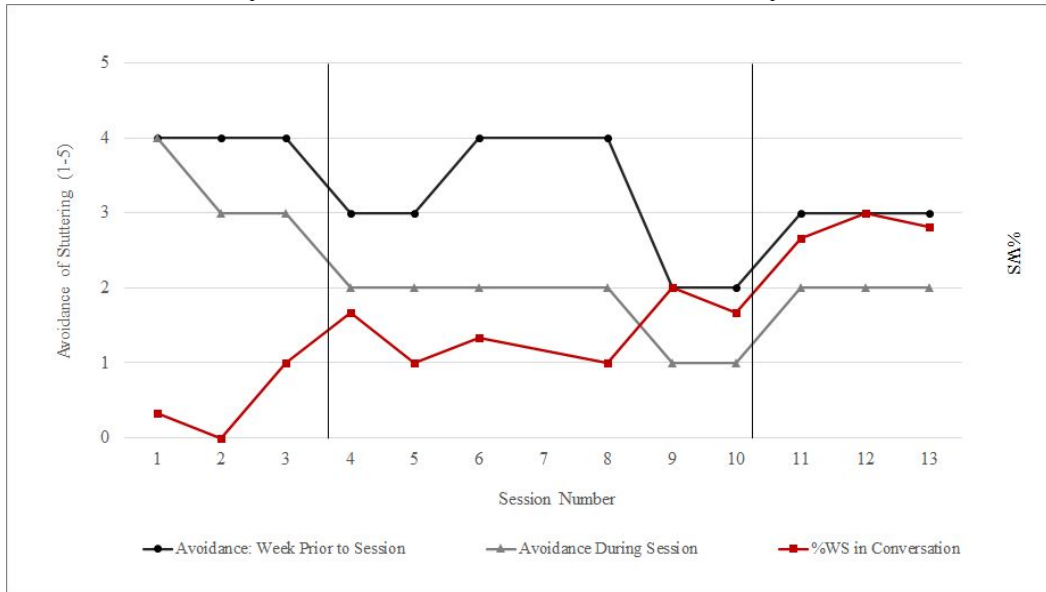
4. Discussion

To review, the purpose of this study was to identify the outcomes of a holistic approach to telepractice speech therapy for an adult who covertly stutters. Specifically, the current study sought to shed light on outcomes of a speech therapy protocol where the primary goals were to decrease avoidance of overt stuttering, increase the participant's positive self-image as a communicator, and lessen the overall impact of stuttering on the participant's life. The following section provides a discussion of the results as they relate to the outlined research questions, clinical implications, limitations of the current study, and future research directions.

4.1 To what extent can an adult who covertly stutters increase positive attitudes, perceptions, and emotions related to stuttering through weekly telepractice therapy sessions, as evidenced by his scores on the OASES-A?

All sections of the pre-intervention *OASES-A* during baseline corresponded to a severity rating of "severe" and reduced to "moderate/severe" post-intervention. Given that the *OASES-A* is designed to capture the impact that stuttering has on the quality of life of a person who stutters, observing a shift from

"severe" to "moderate/severe" in the participant's responses suggests that telepractice speech-language pathology services for stuttering had a positive impact on the participant's attitudes toward his stuttering and the perceived impact that stuttering has on his life. Comparison of the participant's baseline ratings for specific questions on the *OASES-A* and his post-intervention ratings potentially demonstrate an increase in the participant's acceptance toward stuttering and a decrease in avoidance of stuttering. For example, the participant's responses to several *OASES-A* questions demonstrates potential positive impacts to the participant's acceptance of stuttering immediately following intervention, although these scores should be interpreted with caution as additional baseline and intervention phases are needed to determine if these outcomes are directly related to the intervention employed in the current study.

In addition to the *OASES-A* results, the participant demonstrated a reduction in covert behaviors during clinical sessions. The participant self-reported during telepractice treatment sessions that he was utilizing a self-disclosure statement with people and in communication contexts which were "most comfortable" to him on his speaking hierarchy, working on freely and openly stuttering, and self-monitoring moments of stuttering avoidance (i.e., using a synonym, scanning ahead to detect possible moments of stuttering). Taken together, the participant's self-report on the *OASES-A* and the observed changes to covert behaviors during therapy sessions indicate that the participant's experience of the impact of covert stuttering was lessened throughout the course of therapy; however, it should be noted that the participant's progress was incremental in nature.

When analyzing the client's specific responses related to the present study in Figure 3, it is noted that the participant maintained the same answers to questions related to his identity as a person who stutters. For example, he noted that he still felt "very negatively" toward being a person who stutters and being identified as a person who stutters. However, there were reductions in the impacts on questions regarding their acceptance of their stutter and their abilities as a communicator. When asked to what extent they agreed with the statements "I cannot accept the fact that I stutter" and "I do not have confidence in my abilities as a speaker," the participant's answers shifted compared to baseline. The participant's answers indicated that although he still had negative perceptions about his identity as a person who stutters, he has started to accept that stuttering is a part of his identity and does not impact his ability as a speaker. Additionally, some of his answers to questions regarding speaking despite potentially stuttering shifted compared to baseline, becoming more positive in nature. For example, at post-intervention he noted that he "rarely" says exactly what wants to say despite thinking he may stutter compared to baseline where he noted that he would "never" do so. At post-intervention, he also answered that he "sometimes" lets

someone else speak for him compared to his report of "often" letting someone else speak for him during baseline. Taken together, although some of the participant's answers regarding the impact as a result of his identity as a person who stutters, four of his answers related to the present study demonstrated that stuttering may have begun to have less severe of an impact on his experiences as a person who stutters post-intervention. Thus, it is hypothesized that there may have been potential positive treatment effects regarding his acceptance of stuttering, overall communication, and confidence as a speaker.

4.2 To what extent can an adult who covertly stutters decrease his avoidance of stuttering through weekly telepractice therapy sessions?

To answer this research question, the participant self-reported his weekly avoidance of stuttering both within his individual treatment sessions and outside of sessions using a Likert scale of 1-5 where 1= Never, 2=Rarely, 3=Sometimes, 4=Often and 5=Always.

4.2.1 Avoidance during Telepractice Therapy Sessions

As shown in Figure 4, the participant reported that he "often" avoided stuttering during his initial evaluation, which was the highest data point during baseline. This rating drastically reduced to "never" within the last two sessions of the intervention phase, which potentially signifies that treatment was associated with the reduction in avoidance throughout intervention. Interestingly, the participant's rating increased back to "sometimes" during the maintenance phase but still did not equate to or surpass baseline levels of avoidance. The maintenance phase consisted of three follow-up sessions with the first and second author. The first author was the supervising SLP, while the second author was an undergraduate student who was a clinician assistant in the telepractice fluency clinic. Neither author directly interacted with the participant for the purpose of intervention at any time. Considering that both authors were not involved in intervention and only connected with the participant in the maintenance phase, this data shows promise for a potential treatment effect that carried over post-intervention as demonstrated by the reduction in avoidance across different conversation partners. As a result, it can be hypothesized that intervention via telepractice may facilitate positive outcomes on a client's avoidance of stuttering during therapy sessions with speech-language pathology clinicians. Additionally, exploration of the participant's avoidance outside of session allows for further analysis of treatment effects.

4.2.2 Avoidance of Stuttering during the Week Prior to Telepractice Therapy Sessions

The participant self-reported higher levels of stuttering avoidance between sessions during the baseline phase compared to generally lower reports of stuttering avoidance between sessions during the intervention and maintenance phases. These results are consistent with the participant's self-report of avoidance

within therapy sessions, as previously described. Upon visual inspection, it was evident that the participant demonstrated greater variability in his avoidance of stuttering outside of sessions compared to avoidance within sessions. This is consistent with evidence that generalization—the transfer of skills learned within intervention to real-life settings—and maintenance of treatment effects outside of intervention is challenging for PWS, creating a barrier to long-term treatment success (O'Brian et al., 2008). As a result, within sessions, the participant reasonably benefitted from a clinical environment where he was encouraged to stutter freely and communication partners were either knowledgeable about stuttering and stuttering intervention (i.e., graduate student clinicians or SLPs) or individuals who also stutter (i.e., peers in group therapy sessions). The participant's self-report of avoidance between sessions was also consistent with the participant's report that he was more comfortable stuttering around people who he recognized as belonging to the "stuttering community" (e.g., SLPs, student clinicians, or other PWS).

Consequently, the participant reported increased levels of stuttering avoidance outside of the clinical environment where he potentially faced pressure from more naturalistic environments (i.e., during social and professional contexts) with individuals who may not as be accepting or knowledgeable about stuttering. Additionally, the participant rated his avoidance of stuttering over the past week prior to his current session, which exposed him to significantly more communication opportunities within various contexts (i.e., social and work settings) to avoid stuttering compared to consistent 1-hour sessions with a graduate student speech-language pathology clinician. It is important to recognize, however, that the data from the participant's avoidance of stuttering outside of his sessions should be interpreted with caution due to the COVID-19 pandemic, which caused global mandatory lockdowns and strict physical distancing regulations during the present study. As a result of mandated physical distancing, the participant reported an overall decrease in communication opportunities which may have had an impact on the results of the present study.

4.3 To what extent can an adult who covertly stutters increase his overt stuttering behaviors (%WS) through weekly telepractice therapy sessions?

Weekly measures of the participant's stuttering-like disfluencies were generated by calculating the participant's %WS in both a conversational sample and reading sample which took place during the therapy sessions. The participant's %WS during a 300-word conversational sample as well as a ~150-word reading sample provided insight into the participant's observed overt fluency within sessions. Treatment outcomes observed within this data are discussed in the following section.

4.3.1 SSI-4 Scores

The increase in the participant's percentile range on the *SSI-4* suggests that there were potential treatment effects on the participant's stuttering severity in terms of duration of overt stuttering. As previously reported, the participant was observed to present with more frequent and longer durations of stuttering at the post-intervention measurement.

4.3.2 Stuttering-like Disfluencies in Conversation

Upon visual inspection of the weekly conversational sample disfluency counts, the participant appeared to demonstrate an increase in his %WS as compared to baseline, despite variability within the data throughout the entire study. This variability of stuttering is inherent to the disorder; however, the overall trend toward increased stuttering during conversations within therapy sessions is notable. Aside from two points within the intervention phase overlapping with the highest baseline data point, the participant's %WS was generally higher than his baseline scores. During the baseline sessions, the participant maintained a %WS of less than or equal to 1%, with the lowest being 0 %WS during the initial baseline session following his evaluation. This frequency data is consistent with the participant's initial ratings of his avoidance of stuttering to be very high both on the *OASES-A* and his highest baseline rating of "often" avoiding stuttering.

Overall, as shown in Figure 4, the increase in stuttering appeared to be inversely related to the participant's self-report of avoidance of stuttering. As the participant's self-report of avoidance decreased over the course of the study, the participant's %WS continued to increase. More notably, the participant's %WS continued to increase well into the maintenance phase, presenting with the highest %WS during all three follow-up sessions compared to baseline and intervention. This increase in stuttering is notable in that the participant's highest %WS since baseline were present during the maintenance phase. This information provides preliminary evidence that holistic speech therapy via telepractice generated potential positive outcomes for PWCS due to continued increase of %WS both outside of intervention and across unfamiliar conversation partners. Additional baseline and intervention phases would have been beneficial in determining if these outcomes were caused by intervention or if there were other undetected variables involved.

4.3.3 Stuttering-like Disfluencies within Reading Samples

As previously reported, the participant demonstrated nearly 0 %WS on all reading samples from baseline through intervention. Reading samples were discontinued after the participant reported that he rarely stutters when reading because he often reads aloud using an alternative 'voice' and 'persona' which facilitates fluency. Observation of his reading samples revealed that the participant was utilizing fluency shaping strategies such as controlled breathing, easy phonation, and pausing. Thus, %WS calculated from a reading sample was

not considered to be an appropriate measure of this specific participant's therapeutic outcomes given that use of fluency shaping tools was not one of his communication goals or targets.

4.4 Participant Experiences with Intervention

The participant was interviewed about his experiences with telepractice treatment during the maintenance portion of the study. He self-reported that he had not received speech-language pathology services for stuttering in general, and, as a result, had never received any in-person services. Douglass et al. (2018) and Douglass et al. (2020) reported that clients who covertly stutter have discussed negative experiences with speech-language therapy as a result of fluency-focused interventions where fluency was equated with success (e.g., Douglass et al., 2018, Douglass et al., 2020). Thus, the participant's therapeutic background is unique considering that his first experience with speech-language therapy was using a holistic, client-centered approach to intervention. Regarding the intervention he received as part of the current study, the participant expressed his satisfaction with having both individual and group therapy experiences. He reported that receiving services via telepractice was a convenient and accessible option for him and allowed him to work toward his communication goals. Thus, in addition to the clinical outcomes observed in which the participant increased his overt stuttering and decreased covert stuttering behaviors, he also reported a high level of satisfaction with the telepractice treatment protocol. Taken together, the results of the current study provide preliminary support for using a holistic therapeutic approach via telepractice for an adult who covertly stutters.

4.5 Limitations and Future Directions

Although it is impossible to note any given stutterer's level of avoidance of stuttering without self-report; one limitation of the current study is that the participant knew that the target behavior for his therapy sessions was avoidance reduction which may have, in turn, influenced his self-report of level of avoidance. Another limitation is that the present study was performed during the COVID-19 global pandemic which may have impacted the participant's daily communication in terms of limited social interaction with typical communication partners in both social and work-related contexts. Additionally, the length and format of the study were both limited due to the availability of clinical training opportunities for graduate student clinicians given the university clinic site. Thus, researchers collected baseline and intervention data during the Spring term and maintenance data during the Summer term. Given the timeframe restrictions, the current study is limited to a single case design reflecting a series of phases (i.e., baseline, treatment, maintenance) to match the length of time the participant would be receiving services in the Spring 2020 term. The relationship between the intervention and treatment outcomes were consistent with the hypothesis that telepractice treatment for covert stuttering can be effective at reducing covert

behaviors and increasing overt stuttering; however, single subject experimental design studies and multiple baseline studies would provide more information related to causation. A single-subject experimental design would also allow for additional controls to threats to internal validity, such as participant comfort with the clinician, maturation, and history which are variables that may have impacted the current study's results. The preliminary evidence gathered from this study warrants further investigation using longitudinal studies and/or multiple baseline studies to determine if treatment effects can be generalized across the population of PWCS.

5. Conclusion

The purpose of the current study was to report on telepractice-based holistic speech therapy services to reduce avoidance of stuttering and increase positive self-image as a communicator for an adult who covertly stutters as compared to baseline. Treatment included telepractice individual and group therapy sessions for stuttering with a focus on acceptance of stuttering, reduction of avoidance of stuttering, and improvement of quality of life. The participant self-reported a decrease in his avoidance of stuttering both within and outside of sessions and a simultaneous increase in his production of %WS. Additionally, the participant reported a reduction in the impact stuttering has on his life across all sections of the *OASES-A* post-intervention as compared to pre-intervention, suggesting a potential positive treatment effect of intervention on the participant's overall experience of stuttering. In a post-treatment interview, the participant reported that he was satisfied with individual and group components of his therapy sessions. Additionally, he reported satisfaction with the convenience of the telepractice service delivery model, especially in light of the COVID-19 global pandemic. Overall, results from this study generated promising preliminary evidence, suggesting a potential correlation between positive treatment outcomes and holistic intervention via telepractice for PWCS.

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Appendices

Appendix A. Participant's Full Speech-Language Pathology Treatment Plan for Spring 2020.

Functional Outcome I: The client will explore topics related to avoidance of stuttering and
covert stuttering behaviors in his own life.

Goal 1.1: The client will identify one moment of avoidance each session with minimal
clinician support.
Rationale: It is important to first identify a behavior before you can modify it. By monitoring his
stuttering avoidance in real-time, the client will also identify moments to reduce his stuttering
avoidance in an environment that will provide positive feedback.

Goal 1.2: The client will rate his avoidance of stuttering using a Likert Scale in session with
clinician each week.
Rationale: Identifying his avoidance of stuttering beyond session times will encourage the client
to think about his avoidance behaviors in his daily life. It will also provide information that will
allow the client and clinician to compare avoidance behaviors from week to week.

Goal 1.3: The client will use his self-disclosure statement with a familiar communication
partner once before the end of the term with minimal clinician support.
Rationale: Using a self-disclosure statement with a familiar communication partner will allow
the client to feel more in control about the reaction to his use of a self-disclosure statement. This
will create more positive associations with using his self-disclosure statement as well as provide
Practice.

Functional Outcome II: The client will learn about stuttering in general and as it relates to
him.

Goal 2.1: The client will discuss three articles/podcasts/videos with clinician throughout the

term that relate to specific topics of interest about stuttering (avoidance, neurology, etc.).
Rationale: Learning about stuttering in a variety of mediums will provide the client with
opportunities to reflect on topics of stuttering in his own life. Learning about multiple topics will
allow the client opportunities to think about the multifactorial model of stuttering and how this
relates to his stuttering as well.

Goal 2.2: The client will accurately define the stuttering modification technique of
cancellation with minimal cues provided by the clinician.
Rationale: Learning a stuttering modification technique will increase the client's ability to
control tension during moments of stuttering. This will in turn give him more confidence to enter
into moments of stuttering rather than avoiding them.

<u>Functional Outcome III: Client will demonstrate increased control of stuttering through</u>
<u>applying stuttering modification techniques or fluency shaping techniques with moderate</u>
<u>clinician cueing as chosen by client.</u>
Goal 3.1: The client will use voluntary stuttering once in three separate sessions before the
end of the term with moderate clinician support.
Rationale: Using voluntary stuttering will provide the client with opportunities to practice
stuttering modification techniques discussed in session. It will also work to desensitize the client
to moments of stuttering.

Goal 3.2: The client will use a stuttering modification technique once in three separate
sessions before the end of the term with moderate clinician support.
Rationale: Using stuttering modification techniques will provide the client with tools for
controlling his moments of stuttering.

Appendix B1: Lesson Plan for Session 4 in the Intervention Phase.

LESSON PLAN

TERM GOALS

1	The client will discuss topics centered on acceptance of stuttering.
2	The client will continue education about stuttering.
3	The client will practice techninques/tools to reduce avoidance of stuttering moments.

Activity #	TERM GOALS #	CLIENT'S SESSION GOALS	CLINICIAN'S PROCEDURES	MATERIALS	TIME
1	1	The client will recap his week with the clinician and discuss channges/moments of stuttering. Client will self-report avoidance of stuttering during the past week on a scale of 1-5.	Clinician will support discussion of client's stuttering from the past week and record his response related to avoidance on a fidelity checklist.	Fidelity checklist	5
2		The client will read a paragraph from the SSI-4.	The clinician will present a paragraph from the SSI-4 for the client to read.	SSI-4 paragraph, fidelity checklist	5
3	1	The client will discuss a research article (sent to client as homework) with the clinician about self-acceptance of stuttering.	The clinician will discuss a research article with the clinician aobut self-acceptance of stuttering.	article (Thales et a 2015)	10
4	1, 2	The client will review self-disclosure of stuttering with clinician.	The clinician will review and model self-disclosure with the client.		5
5	3	The client will create a self-disclosure statement about his stuttering with the clinician.	The clinician will support client in creating a self-disclosure statement.		5
	3	The client will practice using his self-disclosure statement in session with clinician.	The clinician will support and provide feedback on client's use of self-disclosure statements in session.		5
	1, 3	The client will reflect on use of self-disclosure and discuss opportunities to practice self-disclosure outside of therapy.	The clinician will discuss opportunities to practice self-disclosure outside of therapy.		10
		The client will rate his avoidance of stuttering during the session on a scale of 1-5.	The clinician will record client's avoidance of stuttering.		5
					50

Appendix B2: Lesson Plan for Session 10 in the Intervention Phase.

LESSON PLAN

TERM GOALS

1	The client will discuss topics centered on acceptance of stuttering.
2	The client will continue education about stuttering.
3	The client will practice techninques/tools to reduce avoidance of stuttering moments.

Activity #	TERM GOALS #	CLIENT'S SESSION GOALS	CLINICIAN'S PROCEDURES	MATERIALS	TIME
1	1	The client will recap his week with the clinician and discuss channges/moments of stuttering. Client will self-report avoidance of stuttering during the past week on a scale of 1-5.	Clinician will support discussion of client's stuttering from the past week and record his response related to avoidance on a fidelity checklist.	Fidelity checklist	3
2		The client will read a paragraph from the SSI-4.	The clinician will present a paragraph from the SSI-4 for the client to read.	SSI-4 paragraph, fidelity checklist	2
3	2,3	The client will review cancellation, review practice at word level, practice cancellation at the sentence and (possibly) the monologue level.	The clinician will readress the topic of cancellation and provide opportunities for practice.	Cancellation presentation (prepared by clinician)	20
4	1,2	The client will continue to discuss the StutterTalk podcast about acceptance of stuttering.	The clinician will dicuss the StutterTalk podcast about acceptance of stuttering.		23
5		The client will rate his avoidance of stuttering during the session on a	The clinician will record client's avoidance of stuttering.		2
					50

Appendix C: Lesson Plan for Group Therapy Session.

		LESSON PLAN		
TERM GOALS				
1	Clients will gain exposure to educational resources on stuttering in general and as it relates specifically to each member of the group.			
2	Clients will participate in weekly discussions about podcasts, articles, and movies related to stuttering			
3	Clients will gain exposure to research about coping mechanisms related to stuttering.			
4	Clients will implement a stuttering therapy technique (e.g., voluntary stuttering, easy onset, pull-out) of their choosing in 7 of 9 group telepractice sessions throughout the term, given clinician cues.			

Activity #	TERM GOALS #	CLIENT'S SESSION GOALS	CLINICIAN'S PROCEDURES	TIME
1	2	Clients will confirm A/V connection	Clinicians will confirm A/V connectivity and will provide a discussion prompt.	15
2	2, 3	Clients will discuss the TedTalk video, "How I Overcame My Fear of Stuttering" by LeRon Barton	Clinicians will pose questions to prompt discussion about the TedTalk video.	10
3	1, 4	Clients will engage in a Jeopardy activity by answering questions and using voluntary stuttering.	One clincian will ask the questions and confirm the correct answer. A second clinician will keep score.	20
4	2	Clients will receive a summary of the session and will be assigned a podcast/article related to the research behind stuttering.	Clinicians will provide a summary of the session and assign a podcast/article related to the research behind stuttering.	5
				50

Appendix D: Fidelity Checklist used by Graduate Student Clinician and Researchers during the Intervention Phase.

Fidelity Checklist

Beginning of Session

☐ Conversation sample
☐ The participant will self-rate their of avoidance of stuttering from the past week

| 1- Never | 2- Rarely | 3- Sometimes | 4- Often | 5- Always |

☐ Participant will either complete an SSI-4 reading sample or a pre-selected short reading sample

Within session

☐ Educational component/counseling
☐ Clinician models a stuttering therapy technique (i.e. stuttering modification/fluency shaping)
☐ Participant will attempt and practice the technique
☐ Clinician will provide feedback about the participant's use of the technique
☐ The participant will reflect on their use of the technique

End of session

☐ The participant will self-rate their avoidance of stuttering during the session

| 1- Never | 2- Rarely | 3- Sometimes | 4- Often | 5- Always |