KNOWLEDGE OF COVERT STUTTERING – A SURVEY OF SPEECH-LANGUAGE PATHOLOGISTS IN THE SCHOOL SYSTEM

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ABSTRACT

KNOWLEDGE OF COVERT STUTTERING – A SURVEY OF SPEECH-LANGUAGE PATHOLOGISTS IN THE SCHOOL SYSTEM

by Richelle Vallier

Purpose: The purpose of this study is to investigate the perceptions of covert stuttering by speech-language pathologists (SLPs) who work in school settings.

Method: Sixty-four certified SLPs in the school setting with a variety of years of experience completed a survey pertaining to knowledge and awareness, treatment strategies, and discharge requirements of covert and overt stuttering. Responses to open-ended questions were coded and counted as frequencies and percentages, while responses to closed-ended questions were analyzed with descriptive statistics.

Results: The majority of SLPs have some, but not adequate, knowledge of covert stuttering. The results indicate an overall misunderstanding of the definition of covert stuttering. It also showed an over-reliance on behavioral observation for frequency counting data only, a potential consequence of record and accountability requirements.

Conclusion: There is a need for improved education in treating covert stuttering, specifically the affective module of stuttering for speech-language pathologists working in school settings.

Keywords: stuttering, speech-language pathology, covert stuttering, stuttering treatment, overt stuttering

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CHAPTER I

INTRODUCTION

The purpose of this study is to investigate the perceptions of covert stuttering by SLPs who work in school settings. There is a lack in research of covert stuttering, the effects of it, and how it is diagnosed and treated. Information obtained from this study may inform service delivery for children who stutter.

Speech-language pathologists (SLPs) are trained to evaluate and provide treatment for fluency, articulation, language, swallowing, voice, as well as other communication disorders. Counseling approaches are often included in these treatments, specifically in the realm of managing fluency disorders. Fluency or stuttering management is within the scope of practice of SLPs (Hannah, 2009). According to the American Speech-Language and Hearing Association (ASHA) speech-language pathology certification standards, specifically standard IV-C, all applicants must be competent in these nine major areas: articulation; fluency; voice and resonance; receptive and expressive language in speaking, listening, reading and writing; hearing as related to communication; swallowing; and cognitive aspects of communication (ASHA, Standards & Procedures, 2014). Due to the nature of this study, only one of these "Big 9" will be addressed in detail, fluency or stuttering.

Stuttering is a multifactorial condition that incorporates Cognitive, Linguistic, Affective, Motor, and Social (CALMS) components (Healey, 2012). Stuttering is a speech disorder that involves a disconnect of neurological synapses in the brain. These disconnections cause a person's speech to have airflow stopped, words or phrases repeated, and/or phonemes prolonged. In the CALMS model, cognitive represents how the person who stutters (PWS) thinks of his or her stuttering moments and his or her awareness of the stuttering. Affective embodies the

thoughts correlated directly with feelings, emotions, and attitudes related to stuttering. These intensive feelings and attitudes can be negative or positive. Linguistic refers to the PWS's language skills that depend on the demand requested of the PWS and its effect on stuttering. Motor represents the frequency, type, during, and severity of the stuttering. Social refers to the PWS's reactions to listeners, avoidance of situations, bullying by peers, pragmatic skills, social isolation of the PWS, and the PWS's participation in group settings (Healey, 2004).

Covert stuttering is a concept that was originally referred to as "interiorized" (Van Riper, 1982). Covert stuttering is the manifestation of the affective area of stuttering in the CALMS model. Covertness is difficult to define concretely and is subjective to each PWS and their experiences. Broadly, covert stuttering is the action of hiding stuttering acts by finding ways to avoid them (Healey, 2004). This tendency, and ultimate drive to use avoidance is caused by negative reactions from peers, which results in shame and discomfort while stuttering. Every person who stutters is different. Stuttering itself has a wide range of variability. Stuttering goes beyond the repetitions, blocks, and prolongations that one can hear in a person who stutters when speaking. It includes characteristics that are non-observable with the senses of hearing and vision. These characteristics include anxiety, low self-esteem and self-confidence, and shame, which profoundly affects a person's quality of life (Hannah, 2009).

The impact of the quality of life in children who stutter who are covert has potential of being improved by SLPs who have acquired knowledge about this specific area in fluency disorders. The literature review below will outline the prevalence of knowledge of stuttering in school systems, speech-language pathology clinical competency standards, education and training of SLPs about stuttering, percentage of students who stutter receiving the therapy

needed, knowledge and attitudes of SLPs in diagnostics of stuttering, knowledge and attitudes of SLPs in treatment of stuttering, and the self-concept of people who stutter.

CHAPTER II

REVIEW OF LITERATURE

Knowledge of Covert Stuttering

In Dr. Joseph Sheehan's iceberg model of stuttering where "stuttering" is above water (the overt characteristics), the emotions are considered to be the items "under the iceberg" (Sheehan, 1970). The repercussions of the emotions below the iceberg can include a child who stutters (CWS) to feel the need to hide moments of stuttering along with the emotions. This can cause a CWS to internalize these emotions and maximize them, possibly causing them to feel trapped. Almost half of the participants in the present study - regarded a CWS ability to hide his or her stutter as a strength, while just over half saw it as a detriment. This regard promotes the perception that most CWS are seen as successful if they are able to hide their stuttering and be fluent, despite what they might be having to independently manage internally. Viewing the ability to "pass as fluent" reinforces an inadequate perception in the CWS and her/his adult caregivers that the majority of impact regarding stuttering is resolved if the child is "fluent". Murphy (2007) and Chmela (2001) refer to this practice as reinforcing the idea of "stuttering police" in the CWS environment, who are permitted to routinely monitor the CWS's use of fluency shaping/stuttering management techniques, and to remind her/him to use them. When performance expectation emphasizes use of fluency techniques, thereby fluency as the target, the CWS develops avoidance mechanisms to foster fluency, most often compromising what she/he really intends to say, and adopting a reduced verbal output, or remaining silent. Many authors emphasize the need for stuttering therapy to be integrated, that is, in addition to teaching fluency enhancing tools, addressing the affective/psychosocial impacts of stuttering (Chmela, 2001;

Murphy, 2007; Guitar, 2013; Yaruss, 2007). These same authors assert that if covert impacts are not addressed, the CWS' stutters develops further shame-based self-regard and feels further isolation in dealing with her/his stuttering. This research suggests that the understanding of covert characteristics and impacts are not deeply understood and as such, may promote therapies that do not address these psychosocial/covert impacts.

Prevalence of Knowledge of Stuttering in School Systems

Research has shown that the prevalence of knowledge of stuttering in school settings is lacking as is the confidence in diagnosing and treating children who stutter (Hannah, 2009). Multiple studies have shown that negative attitudes and fear about stuttering are attributed to a lack of knowledge (Brisk, Healey, & Hux, 1997; Kelly, Martin, Baker, Rivera, Bishop, Krizizke, & Stettler, 1997; Hannah, 2009). While many SLPs feel as though the success that children who stutter have in being fluent after therapy is due to their fluency skill sets, Brisk and colleagues (1997) found that 21% of respondents felt that children "could be more fluent if they tried harder" (Brisk et al., 1997, p. 171). Brisk's study (1997) suggest therapists' lack of knowledge about stuttering including the purpose of treatment, by indicating that success for a person who stutters is determined by speech flow rather than the reality of the impact of stuttering on one's self. Lack of clinician's knowledge in the treatment of stuttering may be connected to an inadequacy in the education of SLPs (Kelly et al., 1997). This connection will be further explored in the next paragraphs.

Speech-Language Pathology Clinical Competency Standards

SLPs have been shown to receive minimal to no education and clinical experience as undergraduate or graduate students in the treatment of stuttering (Kelly et al., 1997). Since

ASHA's change in standards in 1993, a change that eliminated the necessity of a specific number of clinical hours in each major disorder area treated by speech-language pathologists, university programs have changed the requirements for programs as well. After the change, programs eliminated the stuttering course or made it an elective. Programs also reduced the demands and requirements of the clinical practicum (Yaruss, 2001). Yaruss and Quesal (2001) projected that the changes in the certification of clinical competence would thus change the program requirements even if minor changes were made. These changes that were expected to be made were divided between both an increase and a decrease in clinical requirements among the programs resulting in an inconsistency of education among programs. Subsequent research supported that university undergraduate and graduate programs should continue offering clinical and hands-on experience with children who stutter along with classes dedicated to teaching clinicians about stuttering diagnosis and intervention (Brisk et al, 1997). The current ASHA standards do not require a speech-language pathologist to have had a specific number of clinical hours in diagnostics and/or treatment of stuttering when applying for clinical competency (Kelly, et al., 1997). Although this reduction in educational standards specific to stuttering challenges the reality that in order to receive a certification of clinical competency, a person much be competent in the nine areas of speech-language pathology stated earlier.

Education and Training in Working with Children Who Stutter

Due to a revision in ASHA standards loosening specifications for a predetermined number of clinical hours treating stuttering, clinicians may be both academically and clinically unprepared, as well as have little confidence, to work with clients who stutter (Kelly, et al., 1997). Research suggest that clinicians' lack of self-efficacy in treating stuttering would likely

be remedied by more clinical experiences with this population. While stuttering may be discussed in coursework verbally, there is a sincere lack in the understanding and learning of basic skills in stuttering therapy (Kelly et al., 1997). In the study by Brisk and colleagues (1997), programs provided by universities should continue to provide graduate students' clinical involvement with school-age children who stutter and coursework devoted completely to fluency disorders to promote clinicians' confidence when evaluating and treating stuttering and other fluency disorders (Brisk, 1997). The study done by Yaruss and Quesal (2001), found that 77.4%, of 123 national graduate programs have a required course related to stuttering. Approximately 1/3 of these programs disclosed that they have a course related to stuttering as an option for an elective, however only 50% of students take the offered elective related to stuttering. Fourteen percent of programs had an elective and a required course related to stuttering. Approximately 36% reported that stuttering is covered in other courses. Approximately four percent of programs did not offer a required or elective class related to stuttering.

In terms of the courses related to stuttering, it is important to understand the concepts that are stressed as critical in the classes. In the same study by Yaruss and Quesal (2001) programs with courses related to stuttering recorded that 27% of programs had an equal balance of discussing theoretical issues (i.e. etiology of stuttering) and clinical application. Fifteen percent of programs showed more attention to theoretical issues, while 58% showed more attention to clinical application. A large majority (71.7%) of programs in the study reported that the stuttering courses provided some version of laboratory or real-life sessions. Almost 30% of programs required an evaluation of a student's competency in stuttering diagnostics and treatment. Thirty-six percent of programs required clinical experience in both assessment and treatment of stuttering. However, the majority of programs responding (65%) reported that it is

possible for a graduate student to finish the program without clinical hours in the area of stuttering.

Percentage of Students Who Stutter Receiving Therapy Needed

Some children who stutter receive the therapy that is needed, while others do not. Many students who stutter also have articulation errors. When a child both stutters and has articulation errors, articulation generally is targeted first and stuttering is deferred or not targeted (Kelly, et al., 1997). Healey (1995) found that caseload size, simultaneous treatment of large groups of children with various disorders, and scheduling limitations are the most impeding barriers to quality services in the school system for children who stutter.

Assessment Knowledge and Attitudes

Assessment of children who stutter is the process that allows a child to qualify for services within the school system. Kelly et al. (1997) stated that generally, referrals for treatment of children who stutter come from the child's teacher while referrals for evaluation come from the parents of the child. In comparison to treatment,

> "Respondents felt more competent to evaluate than to treat clients with fluency disorders. This suggests that training programs may emphasize evaluation procedures in their fluency disorders courses more than treatment procedures" (Brisk et al., 1997, p.169).

Multiple studies have confirmed the above, that SLPs feel more comfortable evaluating a child who stutters than treating a child who stutters. This may indicate a lack of education and preparation in the treatment of stuttering (Brisk et al., 1997; Hannah, 2009; Kelly et al., 1997; and Nippold, 2012).

In accredited educational settings, SLPs are taught to adhere to the ASHA technical standards for each disorder that is encountered. The ASHA technical standards that pertain to covert stuttering are as follows,

> "Counseling individuals with fluency disorders and their families and providing education aimed at preventing further complications related to fluency disorders" (ASHA, Childhood Fluency Disorders).

As stated in the ASHA Practice Portal Fluency Treatment Guidelines, a reciprocal relationship between the intensity of covert/affective impacts and exists. Addressing covert impacts of stuttering is important because as fear of speaking and anxiety increase, avoidance behaviors intensify, which results in the development of more intense overt disfluent behavior. In addition, as the child experiences more struggle with communication, shame based behavior may continue to develop (Yaruss et al., 2012).

More recent research has promoted the idea that assessments of stuttering should consist of components that evaluate areas related to the World Health Organization (WHO) ICF Framework. These areas include: impairment in body function, activity limitations and participation restrictions, and personal and environmental context. (Coleman, Yaruss, 2014; Yaruss, 2007). From these studies, the *Overall Assessment of the Speakers Experience with Stuttering* (OASES) (Yaruss, Quesal 2006) was published to assist clinicians in quantifying the impact of stuttering on their students' lives which relate to covert stuttering symptoms. Research to date regarding the use of the OASES in school populations has not been completed.

Treatment Knowledge and Attitudes

Research studies done by Kelly et al. (1997) and Brisk et al. (1997) found that a majority of clinicians (approximately 60%) feel confident in treating clients who stutter. While this figure refers to a majority of clinicians, it also suggests that approximately 40% of SLPs do not feel confident in treating stuttering or creating a treatment plan (Kelly et al., 1997; Brisk et al., 1997). Research indicated that confidence levels in treating stuttering varied with difference age groups of children. SLPs in the school setting felt even less comfortable treating preschool stuttering and the least comfortable treating adolescents who stutter (Brisk et al., 1997). Most confidence in treating stuttering was observed in the elementary setting in comparison to the preschool, middle school, and high school settings (Brisk et al., 1997). Brisk et al. (1997), Kelly et al. (1997), and Hannah (2009) reported that the majority of children who stutter are seen in groups with children who have varying disorders. Treating CWS in such a group may not provide a safe environment where the child can openly discuss problematic situations and negative emotions which is viral to treating covert aspects of stuttering. Treatment groups of varied disorder composition may promote emphasis on overt stuttering. ASHA's treatment guidelines reinforce the importance of treating the disfluencies and the emotional aspects of stuttering that affect a person's self-concept.

Discharge Criteria

Yaruss (2005) expresses the importance of addressing confusion in the dismissal criteria of children who stutter in the school systems. He discusses two major abilities that should be accomplished for a child to qualify for dismissal. He states these two abilities as follows:

> "1. Learned and practiced techniques to effectively enhance their fluency when they choose to do so (acknowledging that they may not always make this choice, for speech modification techniques are difficult to use) and 2. Learned techniques for minimizing the negative impact of any remaining stuttering on communication (by facing the fear of stuttering, minimizing tension and struggle during stuttering, reducing the negative impacts of stuttering on communication, and realizing that it is okay to stutter)" (2005, p. 10).

These qualifications are befitting with requirements within state standards and the Individuals with Disabilities Education Act (IDEA), both required to be followed when servicing children with disabilities.

Stuttering Effects on Self-Concept of Persons Who Stutter

Confusion of the similarity or differences between "self-concept" and "self-esteem" can be narrowed down to a simple explanation of each. In contrast,

> "...self-concept asks the question, "Who am I?"...self-esteem refers to self-worth and is encapsulated in the statement, "How do I feel about myself?" (Yovetich, 2000, p. 144).

Per Beech and Fransella (1968), a PWS needs to accept their stuttering as a portion of their self-concept rather than their self-esteem. A PWS's self-esteem is effected most commonly by feelings of anxiety, helplessness, and victimization which lead to a low self-esteem (Yovetich et al., 2000). A child's stuttering may not fully account for all of these factors due to a common sensitive temperament characteristic of those who stutter (Yovetich et al., 2000). The PWS's

attitudes and personal impacts on self-esteem will be dependent on the amount of experiences, positive and negative, that he or she has had. The impact of stuttering on a person's self-esteem is based upon the PWS's awareness and interpretation listeners' reactions to their stuttered speech. These negative experiences and resultant low self-esteem can cause a child to hide his or her stutter, intensifying a negative self-concept defined by stuttering.

As suggested by the above research and supported by the World Health Organization definition of impairment, treatment of covert characteristics of stuttering or "hiding stuttering" is a crucial part of stuttering management to address the negative

feelings associated with a child's experiences. Given research which suggests an over reliance on overt/behavioral characteristics of stuttering used in the diagnosis and treatment of stuttering, more information is needed to determine current perceptions and practices of covert stuttering characteristics in schools. The purpose of this study is to investigate the perception of covert stuttering by SLPs who work in school settings.

CHAPTER III

METHOD, DESIGN, PARTICIPANTS, SURVEY

Design

This study was administered through a secure web-based platform, SurveyMonkey. The study was distributed through the Michigan Speech, Language, and Hearing Association (MSHA). Individual emails were sent to each participant containing a letter explaining the study (Appendix A) and the link to the survey. The project was exempted from IRB approval by Central Michigan University.

Participants

At the time the survey was sent out (2016), MSHA provided email addresses of 299 of its active SLPs membership who were working in the school system. This number of SLPs represents a fraction of the 2000+ SLPs working in the school system in the State of Michigan. Sixty-four of the 299 individuals responded, resulting in a 21% response rate. Participants were given a consent form (see Appendix A) at the start of the survey. By choosing "next", consent to participate was granted.

Survey

The instrument used (see Appendix B), developed by the researcher and thesis committee, was made up of 24 items addressing these four questions:

- Are school-based SLPs able to decipher between overt and covert stuttering?
- What factors create discharge criteria for students who stutter?
- Are school-based SLPs consistent in providing knowledge about covert stuttering?

- Do SLPs feel confident when diagnosing and treating both overt stuttering and covert stuttering?

The survey was created to examine the ability of SLPs in the schools to accurately differentiate overt and covert characteristics and determine the status of students on current caseloads have covert tendencies. The majority of survey questions were multiple choice, closed-ended questions, and open-ended questions. Survey questions contained content related to characteristics of both covert and overt stuttering, caseload size, number of stuttering cases, comfort in diagnosing and treating stuttering, dismissal criteria for children who stutter, and continuing education opportunities. The survey was available online for a total of five weeks.

Data Analysis Plan

As surveys were completed, responses were accordingly systematized by Survey Monkey. The responses were made available to the leading investigator. Respondents who did not complete majority of the survey were removed from data analysis. Fourteen participants' responses were removed from analysis due to incompletion. Close-ended questions were analyzed quantitatively. Open-ended questions were analyzed to determine common themes with follow-up quantitative analysis as appropriate.

CHAPTER IV

RESULTS

Demographic Information

A total of 64 SLPs responded to the survey. Only 50 were considered for analysis due to missing data. Demographic information can be found in Table 1. The large majority, 88%, of respondents were employed full-time in the school setting. One respondent had a doctorate, all others had a master's degree. Six percent of respondents held a teaching degree and 2% had a learning disability certification. Ninety-eight percent of respondents had an academic course in stuttering. Total number of students on the caseloads of respondents fell into ranges above and below 50 students. Fifty-five percent of respondents have caseloads larger than 50 students, while 45% have caseloads smaller than 50 students. One of the respondents was part-time with caseload of 24 students.

Table 1. Demographic Information

Description	N (%)
Employment Status	
Full-time	88%
Part-time	12%
Special Certification	
Teaching Degree	6%
Learning Disability	2%
None	92%
Enrollment Size	
5-100 Students	15%
101-200 Students	1.64%
201-300 Students	14.75%
301-400 Students	11.48%
401-500 Students	11.48%
500+ Students	45.90%
Academic Course in Stuttering	
Yes	98%
No	2%
Caseload Size	
50+ Students	55%
< 50 Students	45%

Covert versus Overt Characteristics of Stuttering

Individual respondents were asked to choose from a list of stuttering characteristics which items were considered "overt" and then again in a second question, which items were considered to be "covert". Forty-nine respondents (98%) correctly categorized "Verbal blocking of sounds" as overt and 43 respondents (86%) correctly categorized "Verbal blocking of sounds" as not covert. Forty-eight respondents (96%) correctly categorized "Repetitions of words" as overt and 44 respondents (88%) correctly categorized "Repetitions of words" as not covert. Forty-eight respondents (96%) correctly categorized "Prolongations of a phoneme" as overt and 43 respondents (86%) correctly categorized "Prolongations of a phoneme" as not covert. Nine respondents (18%) correctly categorized "Vocal Fry" as overt and 41 respondents (82%) correctly categorized "Vocal Fry" as not covert. Forty respondents (80%) correctly categorized

"Gasping for air after finishing a word, due to tension" as overt and 45 respondents (90%) correctly categorized "Gasping for air after finishing a word, due to tension" as not covert. Forty respondents (80%) correctly categorized "Unwillingness to raise hand in class" as covert and 38 respondents (76%) correctly categorized "Unwillingness to raise hand in class" as not overt. Forty-three respondents (86%) correctly categorized "Changing words due to the knowledge and awareness of stuttering" as covert and 31 respondents (62%) correctly categorized "Changing words due to the knowledge and awareness of stuttering" as not overt. Thirty-one respondents (62%) correctly categorized "Speaking in a different accent or voice that enhances fluency" as covert and 37 respondents (74%) correctly categorized "Speaking in a different accent or voice that enhances fluency as not overt. Forty-four respondents (88%) correctly categorized "Refusal to be put in specific situations that a student knows that he or she will stutter in" and 32 respondents (64%) correctly categorized "Refusal to be put in specific situations that a student knows that he or she will stutter in" as not overt. Thirty-five respondents (70%) correctly categorized "Majority of speaking situations cause anxiety and fear for the child who stutters" as covert and 30 respondents (60%) correctly categorized "Majority of speaking situations cause anxiety and fear for the child who stutters" as not overt. Forty respondents (80%) correctly categorized "Child who stutters analyzes every listener's reactions to even his or her slightest stutters" as covert and 41 respondents (82%) correctly categorized "Child who stutters analyzes every listener's reactions to even his or her slightest stutters" as not overt. Thirty-six respondents (72%) correctly categorized "Negative emotions related with stuttering, causing the child who stutters to react in negative ways" as covert and 29 respondents (58%) correctly categorized "Negative emotions related with stuttering, causing the child who stutters to react in negative ways" as not overt. Thirty-eight respondents (76%) correctly categorized "The child

develops fears of specific words and phonemes" as covert and 33 respondents (66%) correctly categorized "The child develops fears of specific words and phonemes" as not overt. Forty respondents (80%) correctly categorized "The child develops an ability to avoid stuttering" as covert and 37 respondents (74%) correctly categorized "The child develops an ability to avoid stuttering" as not overt. Responses are located in Tables 2 and 3.

Table 2. Summary of Ability to Label Overt Characteristics

Characteristic	**Overt**	**Not Covert**
Verbal blocking of sounds	98% (49)	86% (43)
Repetitions of words	96% (48)	88% (44)
Prolongations of a phoneme	96% (48)	86% (43)
Vocal fry	18% (9)	82% (41)
Gasping for air after finishing a word, due to tension	80% (40)	90% (45)

Table 3. Summary of Ability to Label Covert Characteristics

Characteristic	**Not overt**	**Covert**
Unwillingness to raise hand in class	76% (38)	80% (40)
Changing words due to the knowledge and awareness of stuttering	62% (31)	86% (43)
Speaking in a different accent or voice that enhances fluency	74% (37)	62% (31)
Refusal to be put in specific situations that a student knows that he or she will stutter in	64% (32)	88% (44)
Majority of speaking situations can cause anxiety and fear for the child who stutters	60% (30)	70% (35)
Child who stutters analyzes every listener's reactions to even his or her slightest stutters	82% (41)	80% (40)
Negative emotions related with stuttering, causing the child who stutters to react in negative ways	58% (29)	72% (36)
The child develops fears of specific words and phonemes	66% (33)	76% (38)
The child develops an ability to avoid stuttering	74% (37)	80% (40)

Responses were categorized based on the accuracy of correct placement of items into covert and overt groupings. These responses were coded to create a numerical placing on a scale of 1-14 (5 overt characteristics and 9 covert characteristics). Scale scores were separated into two groups, those being; "adequate" (score of 12-14) and "inadequate" (score of 4-11). Twenty-four respondents were considered "adequate" in the knowledge of overt stuttering, while 25 were

considered inadequate. Thirty respondents were considered to be “adequate” in the knowledge of covert stuttering, while 19 were considered to be “inadequate”. Of the 24 who were considered “adequate” in knowing overt characteristics, 20 were also considered adequate in knowing covert characteristics and 4 were considered inadequate in knowing covert characteristics. Of the 25 that were considered “inadequate” in knowing overt characteristics, 10 were considered “adequate” in knowing covert characteristics and 15 were considered “inadequate” in knowing covert characteristics. It can thus be determined that 20 respondents were considered “adequate” in knowing both covert and overt characteristics and 15 respondents were considered “inadequate” in both covert and overt characteristics. Responses are summarized in Table 4.

Table 4. Summary of Knowledge of Covert Stuttering

Knowledge of Overt Stuttering	**Knowledge of Covert Stuttering**		
	Adequate	Inadequate	Total
Adequate	20	4	24
Inadequate	10	15	25
Total	30	19	49

Confidence in Diagnosing Overt and Covert Stuttering

Participants were asked to rate how comfortable they felt in diagnosing overt stuttering and then again in diagnosing covert stuttering using a Likert scale. The likert utilized the following descriptors: highly comfortable; comfortable; slightly comfortable; slightly uncomfortable; uncomfortable; and highly uncomfortable. In relation to diagnosing overt stuttering, 22.45% of respondents felt highly comfortable diagnosing; 67.35% felt comfortable;

6.12% felt slightly comfortable; 4.08% felt slightly uncomfortable; and no respondents chose "uncomfortable" or "highly uncomfortable". In relation to diagnosing covert stuttering, 4.08% felt highly comfortable; 30.61% felt comfortable; 44.90% felt slightly comfortable; 14.29% felt slight uncomfortable; 4.08% felt uncomfortable; and 2.04% felt highly uncomfortable. Results are summarized in Table 5.

Table 5. Summary of Confidence in Diagnosing Overt and Covert Stuttering

Confidence in diagnosing overt stuttering	
Highly comfortable	22.45%
Comfortable	67.35%
Slightly comfortable	6.12%
Slightly uncomfortable	4.08%
Uncomfortable	0%
Highly uncomfortable	0%
Confidence in diagnosing covert stuttering	
Highly comfortable	4.08%
Comfortable	30.16%
Slightly comfortable	44.90%
Slightly uncomfortable	14.29%
Uncomfortable	4.08%
Highly uncomfortable	2.04%

Respondents were also asked if they believe they have ever diagnosed a child who stutters whom they would consider to be covert. Seventeen percent of respondents said yes,

while 82.98% of respondents said no. Those that answered yes, were requested to state how they structure treatment. Around 12% stated that treatment is structured by, "Working on techniques and discussing emotionally straining tasks and emotions overall; 12.5% said, "Helping the student become confident and comfortable in multiple situations"; 25% said, "Targeting desensitization, avoidance behaviors, emotion/self-esteem related to stuttering; 25% said, "Counseling"; 12.5% said, "Individualized approach with some small group intervention; and 12.5% said, "Behaviors approach". Of those that said yes, they were also asked if there was parental concern. The responses consisted of answers such as, "sometimes yes and sometimes no"; "parents were not too concerned"; "Many parents were okay with their child's speech patterns"; and "Not at first, but once we started therapy, there was a positive change that parents noticed".

Table 6. Summarization of the Structure of Treatment for Children Who Stutter that Present with Covert Stuttering

Structure of treatment	**Percentage**
"Working on techniques and discussing emotionally straining tasks and emotions overall"	12%
"Helping the student become confident and comfortable in multiple situations"	12.5%
"Targeting desensitization, avoidance behaviors, emotions/self-esteem related to stuttering"	25%
"Counseling"	25%
"Individualized approach with some small group interventions	12.5%
"Behaviors approach"	12.5%

Respondents were asked how children who stutter on their caseload were identified. Approximately 34% reported identification by the parents and 65.71% reported identification by the teacher. When asked if the respondent would contact a fluency specialist if available,

89.36% said yes and 10.64% said no. When asked if it is possible that an adolescent who stutters who is difficult to work with in therapy may be covert, 93.48% said yes while 6.52% said no.

Dismissal Circumstances for Children Who Stutter

Respondents were asked to provide the requirements for a child who stutters to be dismissed from services in the school system. Answers were combined into similar groupings resulting in the following categories: 45% of respondents said, "Child is fluent with use of techniques"; 23% of respondents said, "Child has increased fluency but also has diminished negative emotions about stuttering"; 8% said, "Participant has no experience with dismissal"; and 21% said, "Stuttering is no longer impacting child's academics".

Ability to Hide Stuttering

Participants were asked if a child being able to hide his or her stuttering and be fluent is a considered a strength or a detriment in the school setting. Approximately 46.67% said passing as fluent/hiding stuttering was a strength and 53.33% said it was a detriment.

Existence of Covert Stuttering in the Population

Question 14, asked if there are children the respondents would identify as covert in their work settings. Approximately 51.06% reported yes, while 48.94% reported no. Question 20 asked if the respondents suspect that there are children who stutter passing as fluent when they actually stutter. A majority, 78.72%, reported yes, while 21.28% reported no. These questions were cross-tabulated and results are found in Table 7.

Table 7. Understanding of Covert Stuttering

	Question 20: Do you suspect that there are children who stutter, passing as fluent?		
Question 14: Do you think there are children within the population that you serve that would identify as covert stuttering?	**No**	**Yes**	**Total**
No	7 (14%)	16 (32%)	23
Yes	3 (6%)	21 (42%)	24
Total	10	37	49

Of the 49 respondents that answered both questions, seven answered no to both; 21 answered yes to both; 16 answered no to question 14 and yes to question 20; and three answered yes to question 14 and no to question 20.

Of the 24 respondents considered adequate in knowledge of overt stuttering, 10 said yes to both children being identified as covert and children passing as fluent who really stutter; three said no to both questions; two said yes to children identifying as covert and no to children passing as fluent when they actually stutter; and nine said no to children identifying as covert and yes to children passing as fluent.

Of the 30 respondents considered adequate in knowledge of covert stuttering, 15 said yes to both children being identified as covert and children passing as fluent who really stutter; three said no to both children being identified as covert and children passing as fluent who really stutter; one said yes to children being identified as covert and no to children passing as fluent who really stutter; and 10 said no to children being identified as covert and yes to children passing as fluent who really stutter.

Of the 25 respondents considered inadequate in knowledge of overt stuttering, 11 said yes to both children being identified as covert and children passing as fluent who really stutter; four said no to both children being identified as covert and children passing as fluent who really stutter; one said yes to children being identified as covert and no to children passing as fluent who really stutter; and seven said no to children being identified as covert and yes to children passing as fluent who really stutter.

When asked what respondents' perceptions of the status of covert stuttering in the schools is, 17.39% said prevalent and 82.61% said not prevalent.

Presence of Stuttering on Caseloads

Respondents were asked how many students on their caseload stutter and the students' ages. Forty-six of the 50 respondents answered this question. Fourteen percent of respondents said there were zero children who stutter (CWS) on caseload; 34% of respondents said there was one CWS on caseload; 23% said there were two CWS on caseload; 17% said there were three CWS on caseload; 6% said there were four CWS on caseload; 2% said there were five CWS on caseload; and 2% said there were seven CWS on caseload. Of the 78 CWS on caseload, 17.95% were in the 3 – 5 years of age range; 30.77% were in the 6-8 years of age range; 26.92% were in the 9-11 years of age range; 8.97% were in the 12-14 years of age range; 14.1% were in the 15-17 years of age range; and 1.28% were in the 18-20 years of age range. These findings can be located in Figure 1.

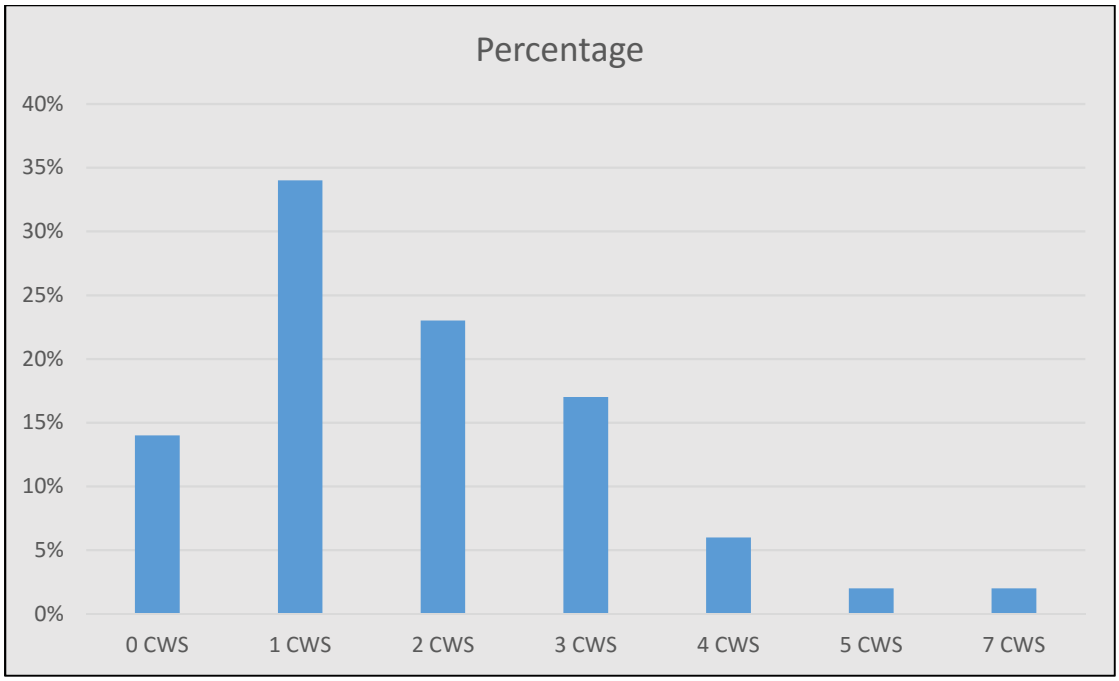

Figure 1. Presence of Stuttering on Caseloads

Of the 42 respondents, 71% considered zero of the CWS on caseload to be covert; 19% considered one of the CWS on caseload to be covert; 4.67% considered two CWS on caseload to be covert; 2.38% considered three CWS on caseload to be covert; and 2.38% considered four CWS on caseload to be covert.

Covert Characteristics in Referrals

Respondents were asked what clues in referrals may suggest a child is a covert stutterer. Two and 1/2% said, “Fluent when conversing, disfluent when reading”; 5% said, “Fearful/timid, doesn’t speak a lot but fluent when they do”; 40% said, “Avoids specific speaking situations and hesitant to participate”; 25% said, “No referral has been made for covert”; 2.5% said, “Stutters only while reading, student doesn’t make sense when trying to describe things, talks in an accent or eccentric at times, quiet/refuses to speak in front of class”; 2.5% said, “Take a long time to

respond, but seldom stutter"; 2.5% said, "Uses fillers"; 2.5% said, "I don't think a teacher would refer a covert stutterer"; 2.5% said, "When a teacher says 'I'm not sure if he's a stutterer or not'"; 7.5% said, "Secondary behaviors and anxiety"; and 7.5% said, "Nature of stutter". Results are summarized in Table 8.

Table 8. Teacher Referrals for Covert Stuttering

Covert characteristic	**Percentage**
"Fluent when conversing, disfluent when reading"	2.5%
"Fearful/timid, doesn't speak a lot but fluent when they do"	5%
"Avoids specific speaking situations and hesitant to participate"	40%
"No referral has been made for covert"	25%
"Stutters only while reading, student doesn't make sense when trying to describe things, talks in an accent or eccentric at times, quiet/refuses to speak in front of class"	2.5%
"Take a long time to respond, but seldom stutter"	2.5%
"Uses fillers"	2.5%
"I don't think a teacher would refer a covert stutterer"	2.5%
"When a teacher says 'I'm not sure if he's a stutterer or not'"	2.5%
"Secondary behaviors and anxiety"	7.5%
"Nature of stutter"	7.5%

Education Sources

Of the 50 respondents, 8.33% said they had attended a workshop(s) related to stuttering at ASHA in the last year. Around 1/3 said they had attended a workshop(s) related to stuttering at MSHA in the last year. Approximately 47% said they had completed a webinar related to stuttering in the past year. About 22% reported they had not had an opportunity for workshops related to stuttering. Results are summarized in Table 9.

Table 9. Educational Opportunities Utilized Related to Stuttering

Educational opportunity	**Percentage**
Attended a workshop(s) related to stuttering at ASHA in the last year	8.33%
Attended a workshop(s) related to stuttering at MSHA in the last year	33%
Completed a webinar related to stuttering in the past year	47%
Have not had an opportunity for workshops related to stuttering	22%

Respondents were asked where the most helpful information about diagnosis and treatment of stuttering can be found. About 19% stated their mentor; 70.21% said research articles; 63.83% reported colleagues; and 38.30% reported published books. When asked how frequently respondents have an opportunity to add to knowledge about stuttering, 8.51% said often; 89.36% said sometimes; and 2.13% said never.

CHAPTER V

DISCUSSION

The results of this survey were based on a sample of 50 school-based SLPs in the State of Michigan. Specific information was provided regarding school clinicians' ability to decipher between overt and covert characteristics of stuttering, confidence in diagnosing and treating stuttering, perceptions of covert stuttering on caseload, the dismissal requirements for CWS and treatment protocols for CWS who have covert characteristics. The following is a discussion of the results corresponding with the sections of the survey. In this section, results are discussed and related to the purpose of the study.

The essential purpose of the present study was to answer the following questions:

- Are SLPs able to decipher between overt and covert stuttering?
- What factors create discharge criteria for students who stutter?
- Do SLPs feel confident when diagnosing and treating both overt stuttering and covert stuttering?
- Are school-based SLPs consistent in providing knowledge about covert stuttering?

Covert vs. Overt Stuttering

Adequacy in determining overt vs. covert characteristics is based on the participants' ability to correctly label 12-14 of the characteristics (adequate). Ratings of 11 or less overt vs. covert characteristics were defined as inadequate– for purposes of this study. Of the 50 respondents, only 50% of respondents were considered adequate in determining overt characteristics. As opposed to other conditions in which the school SLP participates, the diagnosis of stuttering is conferred by the SLP, with the parents and teacher's input. Typically,

no other school educational staff - participate, meaning then that the SLP's determination is the "highest quality provider". The finding that only 50% of the clinicians participating were able to adequately determine overt vs. covert characteristics points to a potential lack of appropriate identification of students who stutter and lack of appropriate direction of treatment.

Sixty-percent of respondents were considered adequate in determining covert characteristics from a given list of choices. While this number represents the majority of participants, 40% of respondents were considered to be inadequate in understand covert stuttering. The potential outcome is that 40% of children being treated may not have covert characteristics therapeutically addressed. This result could also reflect the direction/emphasis placed on fluency shaping in stuttering treatment since 1990. While the definition of covert stuttering was introduced in the 80's (Van Riper, 1982), with the influence of fluency shaping as a treatment for stuttering, training fluent speech was emphasized in many training programs as a means to demonstrate accountability. The focus of professional attention on covert stuttering impacts were diminished until the advent of the CALMS model. Although published as a diagnostic tool in 2012, the CALMS model had been presented in the literature since 2004. Incorporation of the multifactorial model of stuttering was dependent on professionals being exposed to the professional article or professional development conferences. The findings in this study may reflect SLPs not fully understanding the definition of covert stuttering because of historical emphasis on fluency shaping in stuttering research and training and non-exposure to the CALMS multifactorial model. Forty-percent of them were considered adequate in deciphering both covert and overt characteristics.

It is also concerning that 30% of the respondents were considered inadequate in deciphering covert and overt characteristics. This lack in understanding and comprehension of

the difference between overt and covert stuttering could be due to the lack of education and lowering of certification standards related to requiring clinical stuttering experience in training programs throughout the latest decade. Yaruss (2001), discusses the shifting of standards in the university programs' individual requirements. Prior to 1993, all graduate students were required to obtain a specific number of clinical hours of experience in each of the nine areas of speech-language pathology (articulation, voice and resonance, fluency, etc.). Since the changes made in speech-language pathology program requirements, there has been a decrease in education, specifically fluency (Yaruss, 2001).

Discharge Criteria for PWS

The majority (43%) of respondents said that dismissal is warranted when a CWS is fluent with the use of techniques. Only 23% of the total that participated stated that in order for a CWS to be considered for dismissal they must have increased fluency but also have diminished negative emotions about stuttering. The remaining 34% indicated; 1) having either no experience with dismissing a CWS or 2) dismissal was appropriate when stuttering no longer impacts the CWS's academics. The focus on fluency shaping in treatment rather than the affective manifestation of stuttering may have resulted in the propensity of viewing behavioral observation as benchmarks for progress in therapy as well as primary diagnostic characteristics. Certainly, the need for accountability of progress in student Independent Education Plans (IEPs) is facilitated by use of frequency counting data only. In addition, perhaps SLPs may find it difficult to show progress for records and accountability by using rating scales to measure affective changes in a CWS. This study did not detail treatment or data gathering specifics. It

would be pertinent to research documentation strategies for overt/covert therapy goals to determine how therapists are demonstrating therapeutic gains.

Education Sources

Participants were asked to provide information about the educational sources they have utilized in terms of stuttering education over the past year. The large majority, 88.88% reported they had gone to a session at ASHA, MSHA, or watched a webinar while 22.22% stated they had not received education in the past year on stuttering. Further research should be done to determine the amount of stuttering educational sessions are offered and the accuracy of information and content that is being shared. While many sessions are offered on different topics, it will also be important to determine, in further research, whether SLPs are attending sessions pertaining to the population they are currently serving. In terms of school-based SLPs, this population includes stuttering.

Previously noted in the literature review, addressing covert impacts of stuttering is important because as fear of speaking and anxiety increase, avoidance behaviors intensify, resulting in more intense overt disfluent behavior. The outcome of intensified stuttering symptoms contributes to increased shame based behavior. (Yaruss et al., 2012) Results of these data suggest that the implementation of diagnostic and treatment strategies for effective stuttering management in school age children needs to be improved. While a majority of respondents have sought out information in the treatment of stuttering, the implementation of strategies to address covert stuttering characteristics has not resulted.

Study Limitations

The limitations that had the potential of affecting the results of the present study that must be considered related to the sample utilized. The sample was obtained through the membership of MSHA, which resulted in the names of 299 school SLPs. Of this number, only 64 SLPs responded, with 14 of those responses being eliminated from analysis because of incomplete response. This resulted in a 12% response rate which is relatively small. In addition, the scope of those sampled may have been restricted. Only SLPs who are members of MSHA were contacted. Not all SLPs in the State of Michigan are members of MSHA, meaning that 2,000+ SLPs currently working in the school systems in Michigan were not a part of the survey (Hannah, 2009). In addition, additional information relating to respondents graduate training academics and clinical experiences may have been helpful in interpreting the responses. Likewise, given the importance of counseling as a therapeutic underpinning in dealing with covert aspects of stuttering, obtaining information regarding counseling education in respondents' graduate training may have been helpful in addressing the questions of this study.

In order to manage these limitations, further research could be done to approach the weaknesses of the present study. This research should include a larger population size and include more specific information regarding the requirements of the graduate program related to coursework and clinical experiences with stuttering and counseling.

APPENDICES

APPENDIX A

CONSENT FORM
FOR ANONYMOUS SURVEYS

Study Title: Knowledge and attitudes of covert stuttering in schools: A survey of speech-language pathologists

Researcher:

Richelle Vallier, B.A.A.
Speech-Language Pathology Graduate Student
Central Michigan University
valli1rc@cmich.edu

Introductory Statement
You are being asked to take part in a research study. The investigator listed above is in charge of the study; however, other professional persons may help her or act for her. Details about this particular study are discussed below. It is important that you understand this information so you can decide in a free and informed manner whether you want to participate. You are urged to contact the investigator listed above if you have any questions. Your participation is voluntary. You may refuse participation or withdraw your consent at any time, for any reason.

What is the purpose of the study?
The purpose of this qualitative and quantitative study is to investigate the perception of covert stuttering by speech-language pathologists (SLPs) who work in school settings.

What will I do in this study?
On this website you may answer the survey questions according to your opinion and you may submit at the end.

How long will it take me to do this?
Approximately 15-30 minutes.

Are there any risks in participating in this study?
This research is considered to be minimal risk. That means that the risks associated with this study are the same as what one would face every day. There are no known additional risks to those who take part in this study. You may stop answering questions at any time.

What are the benefits of participating in this study?
There are no direct benefits by participating in this study. Participates may note an indirect, intrinsic benefit of advancing stuttering therapy in the future.

Will anyone know what I do or say in the study?

Individual information will not be shared. We will not have access to your name or the place in which you work. Your confidentiality will also be protected through the SurveyMonkey website and its security. All survey data will be kept confidential through SurveyMonkey's security applications on the website.

What I receive any compensation for participation?
Participation in this study will be voluntary without compensation or reward.

Is there a different way for me to receive this compensation or the benefits of the study?
No, there is no compensation for participation in this study.

Who can I contact for information about this study?
Please contact Richelle Vallier at valli1rc@cmich.edu or 517-526-5183 should you have any questions at any time about this study.

APPENDIX B

SURVEY QUESTIONS

DEMOGRAPHICS:

1. How many years have you been working in a school system?

_____

> How many years have you been a speech-language pathologist?

_____

2. Are you employed full-time or part-time?
   Full-time
   Part-time

3. What is your highest degree?
   Masters
   Doctorate

4. Are you certified in any specific areas? If so, please indicate below:

_____

5. What is the total number of children in the school where you are currently working?
   5-100 students
   101-200 students
   201-300
   301-400
   401-500
   501+

Survey Questions:

1. Did you had any academic courses in stuttering?
   Yes
   No

2. Which of the following diagnostic characteristics do you associate with overt stuttering? (Check all that apply)

- Verbal blocking of sounds **(Overt)**
- Unwilling to raise hand in class **(Covert)**
- Repetitions of words **(Overt)**
- Prolongation of a phoneme **(Overt)**
- Changing words due to the knowledge and awareness of stuttering **(Covert)**
- Vocal fry **(Overt)**
- Speaking in a different accent or voice that enhances fluency. **(Covert)**
- Gasping for air after finishing a word, due to tension **(Overt)**
- Refusal to be put in specific situations that a student knows that he or she will stutter in **(Covert)**
- Majority of speaking situations cause anxiety and fear for the child who stutters **(Covert)**

- Child who stutters analyzes every listener's reactions to even his or her slightest stutters. **(Covert)**
- Negative emotions related with stuttering, causing the child who stutters to react in negative ways. **(Covert)**
- The child develops fears of specific words and phonemes **(Covert)**
- The child develops an ability to avoid stuttering. **(Covert)**

3. Which of the following diagnostic characteristics do you associate with covert stuttering? (Check all that apply)

- Verbal blocking of sounds **(Overt)**
- Unwilling to raise hand in class **(Covert)**
- Repetitions of words **(Overt)**
- Prolongation of a phoneme **(Overt)**
- Changing words due to the knowledge and awareness of stuttering **(Covert)**
- Vocal fry **(Overt)**
- Speaking in a different accent or voice that enhances fluency. **(Covert)**
- Gasping for air after finishing a word, due to tension **(Overt)**
- Refusal to be put in specific situations that a student knows that he or she will stutter in **(Covert)**
- Majority of speaking situations cause anxiety and fear for the child who stutters **(Covert)**
- Child who stutters analyzes every listener's reactions to even his or her slightest stutters. **(Covert)**
- Negative emotions related with stuttering, causing the child who stutters to react in negative ways. **(Covert)**
- The child develops fears of specific words and phonemes **(Covert)**
- The child develops an ability to avoid stuttering. **(Covert)**

4. How comfortable do you feel in your diagnosis of overt stuttering?

Highly comfortable
Comfortable
Slightly comfortable
Slightly uncomfortable
Uncomfortable
Highly uncomfortable

5. How comfortable do you feel in your diagnosis of covert stuttering?

Highly comfortable
Comfortable
Slightly comfortable
Slightly uncomfortable
Uncomfortable
Highly uncomfortable

6. Under what circumstances do you make recommendations for a child to be dismissed from your services?

_____

7. When a child is able to hide his or her stuttering and be fluent, do you consider that a strength or a detriment in the school setting?

Strength
Detriment

8. Do you think that there are children within the population that you serve that would identify as covert stuttering? If so, at what ages?

Yes
No

_____

9. Have you ever diagnosed a child who stutters whom you would consider to be 'covert'?

Yes
No

*If no, proceed to Question 12. (Look at jumping)

10. If yes, how do you structure treatment?

_____

11. If yes, is there parental concern?

_____

12. If none, do you think there are children in the school that would pass as 'covert'?

_____

13. How were the children who stutter identified?

Parent
Teacher
Other _____

14. Do you suspect that there are children, who stutter, passing as fluent when they actually stutter?

Yes
No

15. What is the total number of students on your caseload?

_____

16. How many students on your caseload have a stuttering diagnosis and what are their ages?

_____
None (Jump to 18)

17. How many of those students who stutter would you consider to be covert?

_____

18. Would you consult a "fluency specialist" if there was one available to you?

Yes
No

19. What are your perceptions of the status of covert stuttering in schools?

Prevalent
Not prevalent

20. Which of the following best describes your educational opportunities for workshops related to stuttering? Check all that apply

I have attended a workshop(s) related to stuttering at ASHA in the last year.
I have attended a workshop(s) related to stuttering at MSHA in the last year. .
I have done a webinar related to stuttering in the past year.
I do not have an opportunity for workshops related to stuttering.

21. Where are you getting your most helpful information about diagnosis and treatment of stuttering? Check all that apply

Mentor
Research articles
Colleagues
Published books

22. How frequent do you have an opportunity to add to your knowledge about stuttering?

Often
Sometimes
Never

23. Do you find it possible that an adolescent who stutters, that is difficult to work with in therapy, may be covert?

Yes
No

24. When a teacher makes a verbal referral to you about a child who may stutter, what are the clues in the teacher's description that suggest to you that this child may be a covert stutterer?

_____

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