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Children's Attitudes Toward Their Communication Abilities

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CHILDREN'S ATTITUDES TOWARD THEIR COMMUNICATION ABILITIES

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ABSTRACT

The purpose of the current study was to learn more about the social, emotional, and behavioral profiles of children with communication disorders, specifically focusing on children who stutter, children who present with language impairments (LI), and children with speech sound disorders (SSD) through the administration of three questionnaires, the Communication Attitude Test (CAT), Student Language Scale (SLS), and Speech Participation and Activities for Children (SPAA-C). In the end, only children with the latter two diagnoses participated. They included eight children ranging from 62-109 months old. Two children presented with LI, four children presented with SSD, and two children presented with both LI and SSD. The CAT included 35 items that require a "true" or "false" response from a child, the SLS included eight items with a Likert rating scale and then three open-ended questions, and the SPAA-C included 17 open-ended questions and then ten items with a Likert rating scale.

Results showed that children in general did not present with a negative social, emotional, and behavioral profile as measured by the three questionnaires. The children's ratings on the questionnaires were also not highly correlated to each other or to the children's ages, although for the CAT and SPAA-C, there was a trend showing a relationship between the children's ages and their negative ratings. Future studies with more participants and participants who stutter are recommended. Until then, clinicians should consider administering all three questionnaires in clinical practice to learn more about children's a social, emotional, and behavioral profiles.

CHAPTER 1. INTRODUCTION

There is a growing awareness among speech-language pathologists that communication disorders affect children's social, emotional, and behavioral health. Although research is limited, a small amount of literature on this topic can be found for children who stutter and for children who present with other types of speech and language disorders. Within these studies, children's social, emotional, and behavioral profiles are typically measured through the administration of questionnaires. Specifically, the *Communication Attitudes Test* (CAT; Brutten, 1984) is a questionnaire that has been designed for children who stutter, the *Student Language Scale* (SLS; Nelson et al., 2016) is a questionnaire that has been developed for children with language and literacy disorders, and the *Speech Participation and Activity of Children* (SPAA-C; McLeod, 2004) is a questionnaire that has been designed for children who present with speech sound disorders. Although the wording and formats of these questionnaires differ from each other, each asks children about their attitudes toward their communication abilities. Given this, there is likely overlap among them in the types of information that can be collected from a child. Nevertheless, and as far as this author can tell, no study has compared the tools to each other or examined how children's responses to the questionnaires vary as a function of their type of communication disorder. It is even unclear if one would expect children with different communication disorders to respond differently on these questionnaires. Given that each questionnaire has been designed for a different communication disorder, one might predict that a child's communication disorder will affect how they rate themselves as a function of the type of question asked, but it could also be that children, regardless of their specific diagnosis, develop negative attitudes about their communication abilities.

The purpose of the current study was to learn more about the social, emotional, and behavioral profiles of children with communication disorders, specifically focusing on children

who stutter, children who present with language impairments (LI), and children with speech sound disorders (SSD). In the end, no children who stuttered were recruited for the study and four children presented with both LI and SSD. Given this, the data and analysis of the study focused on children with LI, SSD, and/or both LI and SSD. Given the author's interest in stuttering and the use of a questionnaire designed for children who stutter, the literature review on children who stutter was maintained.

As background, the literature review is divided into three sections: characteristics of children who stutter, children with LI, and children with SSD, and characteristics of the three questionnaires that were used to measure the children's attitudes towards their communication abilities. Also, the literature on childhood LI was limited to studies of children with specific language impairment (SLI). SLI is a type of LI that excludes children whose language deficits co-occur with intellectual disability, hearing loss, genetic disorders (e.g., Downs syndrome), and/or other developmental conditions such as autism (Leonard, 2014).

Characteristics of Children Who Stutter

Stuttering is a communication disorder in which the flow of speech is broken by repetitions (li-li-like this), prolongations (lllllike this), or abnormal stoppages (no sound) of sounds and syllables. There may also be unusual facial and body movements associated with the effort to speak (The Stuttering Association, 2019). The onset of stuttering typically occurs between two and five years in age, when children are developing speech and language skills (Yairi, Ambross, & Cox, 1996). Some children grow out of stuttering and/or cease to stutter; when this occurs, it is typically during the preschool years when the brain has the most neuroplasticity. As children age and move toward the school age years, stuttering cessation and response to treatment are less likely. For those whose stuttering persists, the impact can be lifelong. According to Bloodstein and Berstein Ratner (2008), lifetime incidence of stuttering is

approximately 4-5%, and at any given point in time, the prevalence of stuttering is 1%.

Children who stutter commonly demonstrate expressive language difficulties, with average to above average receptive vocabulary skills. For instance, Silverman and Ratner (2002) studied 30 children, aged 24 - 47 months. Of these, 15 were classified as presenting with stuttering and 15 were classified as children who did not stutter. The participants were given the *Peabody Picture Vocabulary Test* – Revised (PPVT-R; Dunn & Dunn, 1981) as a measure of receptive skills, and the *Expressive One Word Picture Vocabulary Test–Revised* (EOWPVT-R; Gardner, 1990) as a measure of expressive skills. The researchers found that the groups did not differ on the PPVT-R but they differed on the EOWPVT-R, and on this measure, those who stuttered scored lower than those who did not stutter. Similarly, Wall (2008) studied eight children, aged 5 – 6 years. Of these, four were classified as presenting with stuttering and four were classified as not stuttering. Wall collected language samples from the children to examine their expressive language abilities. Results were that those who stuttered produced simpler, less mature language than those who did not stutter.

Researchers have disagreed about children's negative attitudes toward their speech fluency as related to the onset, development, and treatment of children's stuttering. Some researchers view stuttering as occurring as an anticipatory apprehension because the speaker thinks speaking will be difficult (Bloodstein, 1958; Johnson, 1955; Johnson, Brown, Curtis, Edney, & Keaster, 1967). Other researchers think that a negative attitude toward speech is a "secondary" developmental stage of stuttering (Bluemel, 1932; Van Riper, 1939, 1971). Given these disagreements, multiple studies have analyzed how children who stutter view their communication abilities.

Using the CAT (Brutten, 1984), multiple studies have found that as age increases, the attitudes of children who stutter toward their speech becomes increasingly negative (Brutten &

Vanryckeghem, 2003; 1991; Vanryckeghem & Brutten, 1997). Other studies have found that children who stutter have more negative attitudes about their communication as early as preschool. These studies have used a version of the CAT designed for younger individuals, called the *Communication Attitude Test for Preschool and Kindergarten Children who Stutter* (Abbiati et al. 2013; *KiddyCat*; Wesierska & Vanrychghem, 2014). The CAT is designed for children ages 6 to 15, whereas the KiddyCat is designed for children ages 3 to 6 years old. Studies that have used this tool have also shown that as children who stutter develop negative attitudes toward their communication abilities, they can develop secondary behaviors such as avoidance, which in turn can lead to more negative perspectives of themselves, others, and life in general.

Characteristics of Children with Language Impairment (LI)

Studies of children with language impairments in many studies are classified as children with specific language impairment (SLI). A specific language impairment (SLI) is defined as a developmental language disorder involving significant language impairments in the context of normal cognitive ability, hearing, and neurological status (Bishop, 1997; Leonard, 1998). SLI is a disorder that affects between 5 and 7% of the population (Botting & Conti-Ramsden, 2008). Children with SLI present with difficulty specific to language that cannot be classified by a more general learning difficulty.

Children with SLI can demonstrate difficulties with expressive language, receptive language, or both expressive and receptive language (Pratt, Botting, & Conti-Ramsdem, 2006). Before the age of eight years, children with SLI often demonstrate smaller vocabularies, shorter and less complex utterances, and difficulty producing grammatical morphology when compared to children who are developing language typically (Leonard, 2014). According to Mok, Pickles, Durkin, and Conti-Ramsdem (2014), children with SLI may also exhibit difficulties with

conversation and making inferences.

Multiple researchers recognize that SLI has a lifelong impact (Clegg, Hollis, Mawhood, & Rutter, 2005; Stothard, Snowling, Bishop, Chipchase, & Kaplan, 1998). According to Whitehouse, Watt, Line, and Bishop (2009), children with SLI are highly susceptible to presenting difficulties in not only oral communication, but also literacy, academic achievement, employment, and social relationships (Dockrell et al., 2007; Donlan et al., 2007; Durkin & Shire, 1991; St Clair et al., 2010).

Recently, researchers have been studying the socio-behavioral and emotional aspects of a children with SLI. Children with SLI exhibit a desire to socially engage with peers and adults, but they also struggle with friendships and peer relationships and are at risk for being bullied (Durkin & Conti-Ramsden, 2010). Given that children with SLI are social, their deficits impact them more than perhaps other groups who are less social. Children with SLI struggle with the production and/or understanding of language, and as a result, engage less frequently in conversations than those with typical language skills, report more negative social interactions, are less aware of conversational initiation by others, and produce inappropriate responses (Mok et al., 2014). Children with SLI also struggle to initiate and participate in social interactions and have difficulties resolving social conflicts that also contributes to negative social consequences. There is also concern that social and behavioral difficulties persist after the language challenges are supposed to have resolved (Clegg, Hollis, & Rutter, 1999; Rutter & Mawhood, 1991).

Characteristics of Children with Speech Sound Disorders

SSD are communication disorders that refers to difficulty combining, perceiving, producing, or phonologically representing speech sounds and sound segments. Some examples of speech sound disorders include childhood apraxia of speech, dysarthria, phonological disorders, and articulation disorders. The prevalence of speech sound disorders varies due to the

wide range of types. Overall, 2.3% to 24.6% of school-aged children were estimated to have speech delay or SSD (Black, Vahratian &Hoffman, 2015). Also, of children with communication disorders, 48.1% of 3- to 10-year olds and 24.4% of 11- to 17- year old children reported SSD only (Black, Vahratian, & Hoffman, 2015). By comparison, residual or persistent speech errors were also estimated to occur in 1% to 2% of older children and adults (Flipsen, 2015).

SSD impact not only speech production such as intelligibility but can also affect other important skills such as literacy. Poor speech sound production skills in kindergarten children have been associated with lower literacy outcomes (Overby, Trainin, Smit, Bernthal, & Nelson, 2012). Another study reported an estimated greater likelihood of reading disorders in children with a history of SSD in preschool (Peterson, Pennington, Shriberg, & Boada, 2009).

Studies have also analyzed the long-term outcomes of SSD which can impact an individual's academics, psychological, and social well-being (Feeney, Desha, Ziviani, & Nicholson, 2012; Lindsay, Dockrell, & Strand, 2007; McCormack, Harrison, McLeod, & McAllister, 2011; St. Clair, Pickles, Durkin, & Conti-Ramsden, 2011). Lewis, Freebairn, Tag, Igo Jr, Ciesla, Iyengar, Stein, and Taylor (2019) suggest that there is a continuum of speech and language skills at school age that are related to poorer adolescent outcomes and that these deficits include literary skills.

Like stuttering and SLI, there is growing interest in the well-being of individuals with SSD. Lyons and Roulstone (2018) found that there were potential risks to well-being as reflected in narratives about communication impairment and disability, difficulties with relationships, and concern about academic achievement. This is consistent with Thomas (2004) who described three dimensions of a social model of disability: impairment effects, barriers to doing, and barriers to being. Impairment effects include the difficulty in saying the words, barriers to doing include social barriers such as frustration or exclusion when others do not understand a message,

and barriers to being include feelings of sadness or the internalization of negative thoughts from others.

Comorbidities

While the above sections focused on children with one specific disorder: stuttering, LI, or SSD, comorbidity also exists. Children can present with two or three of these conditions. A child who stutters can also have LI. A child who has LI can also have SSD. Finally, a child with SSD can also stutter. Minimal research has been conducted to determine the prevalence of these comorbidities. For example, Arndt and Healey (2001) discovered that as many as 44% of children who stutter have a concomitant LI and/or SSD. Shriberg, Tomlin, and McSweeny (1999) found that approximately 11-15% of children with persisting SSD also had LI, and approximately 5-8% of children with persisting LI had SSD.

Three Questionnaires: CAT, SLS, SPAA-C

As mentioned earlier, at least three questionnaires that focus on children's attitudes toward their communication abilities exist within the field of speech-language pathology. These tools include the CAT, SLS, and SPAA-C.

CAT

The CAT (Brutten, 1984) is a questionnaire designed to assess how children ages 6 years old to fifteen year's old who stutter feel about their speech. The CAT is composed of 35 items that require a "true" or "false" response from a child to assess attitudes towards speech and/or communication abilities. According to the directions, clinicians administering the CAT should explain to the child that "true" and "false" do not carry good and bad connotations. Also, if a child is unsure what a statement is asking, the clinician is encouraged to clarify the statement for the child.

The CAT's scoring key bolds answers that indicate a negative attitude toward speech. If

the child's response matches the bolded answer, the item is awarded 1 point. All answers in regular type font should be given a score of 0. The regular type font indicates that the child does not have a negative attitude toward their speech. The test is criterion-referenced, meaning that the information gathered from the test can help determine is a child does or does not have negative attitudes. The maximum total score is 33. A score of 17 or more, which is a score that falls 2 SD above the mean, is considered atypical and suggestive of a negative attitude. According to Bruten and Vanryckeghem (2007), "95% percent of children who do not stutter have a CAT score of less than 17." Scores between 14-16 should also be considered as suggesting a negative attitude as these scores are 1 ½ to 2 SD above the mean.

Within the publication materials for the CAT, Brutten and Vanryckeghem (2007) review eleven studies that have been conducted using the tool. The Brutten and Dunham (1989) study included 518 children who did not stutter, and their average score on the CAT was 8.24 (Brutten & Dunham, 1989). According to these results, the children in this study did not have negative attitudes about their communication abilities. On the other hand, three of the eleven studies reviewed included only children who stuttered. For example, one study included 143 children who stuttered, and their average score on the CAT was 17.31 (Vanrychkeghem, Hylebos, Brutten & Peleman, 2001). Another study included 65 children who stuttered, and their average score on the CAT was 19.02 (DeKort, 1997). Finally, Ezrati and Sagi (1992) studied 11 children who stuttered, and their average score on the CAT was 15.81. The remaining seven studies reviewed by Brutten and Vanryckeghem (2007) included children who did and did not stutter (i.e., Bousten & Brutten 1990; De Nil, Brutten & Claeys; 1985; De Nil & Brutten, 1991; Jaksi-Jelcic & Brestovci, 2000; Vanrychkeghem & Brutten, 1992; 2001; Vanryckeghem & Brutten, 1997). Repeatedly, these studies also found more negative attitudes towards speech in the children who stuttered (and higher CAT scores) than in the children who did not stutter.

SLS

The SLS (Nelson, Howes, & Anderson, 2016) is a questionnaire designed for students, aged 6-18 years, who are suspected of presenting language or literacy disorders. The SLS is filled out by parents, teachers, and students to demonstrate how each party views the student's language, literacy, and academic performance. Provided that it can be given to children, it is reasonable to consider using it to also learn about children's attitudes toward their communication abilities. The questionnaire is composed of 12 questions, with a rating score of 1-7 for each question. A rating of 1 implies "Not good", whereas a rating of 7 implies "Very Good". Following the 12 questions, there is an "Ability Checklist" which asks the rater to check activities that are easiest and hardest for the child. The activities listed include: Art (drawing/painting), Dance, Music, Sports, Math, Social, Listening, Talking, Reading, Writing, etc. Finally, the questionnaire has an open-ended question which is "*What one thing do you think is most important to help this student do better at school?*"

The SLS was developed as a compliment of the Test of Integrated Language and Literacy Skills (TILLS; Nelson, Plante, Helm-Estabrooks & Hotz, 2016a). The SLS is a criterion-referenced tool, and according to the SLS manual, a screening fail is indicated if a rater scores more than two of the first eight questions below 5. If this happens, the student is considered at risk for a language and/or literacy disorder and should be considered for further assessment. According the the SLS User's Manual the sensitivity and specificity ratings vary for teachers, parents, and student informants. Using the cut-score above, teacher's sensitivity is 92% and specificity is 90%; parents have 85% sensitivity and 83% specificity, and students have 73% sensitivity and 61% specificity. Therefore, teacher's evaluation using the SLS are strongest for decisions based on this screening. Concurrent validity was analyzed and teacher and parent performance are correlated highly enough with the TILLS students' performance.

However, students' ratings are helpful in determining how they perceive their abilities.

SPAA-C

The SPAA-C (McLeod, 2004) was designed to understand children's communication abilities as related to their lives and their relationships with other people who are involved in their lives including siblings, parents, teachers, and others. This assessment was originally designed to guide speech-language pathologists in gathering information about children with speech sound disorders, but the manual states that it may also be relevant for considering children's communication more broadly. The SPAA-C does not have a scoring system, but instead offers questions to collect attitudes about children's communication abilities.

The questions for children are organized into four sections (i.e., Who are you, Your friends, School/preschool, and Your Talking). These questions are open-ended in nature to encourage children to give a response that is longer than one word. Following these open-ended questions are items requiring the children to circle emotional faces including: *Happy, In the middle, Sad, Another Feeling,* and *Don't Know*. The questions for friends, siblings, teachers, and others also include open-ended questions. Finally, the content for parents includes three sections: your child, your child's speech, and the impact of your child's speech difficulty. The SPAA-C is intended to gather a more holistic understanding of the impact of a child's speech difficulty on everyday living.

The SPAA-C also was developed with the goal of applying the International Classification of Functioning Disability and Health (ICF) (WHO, 2001) model to children with speech impairment. The two major factors of ICF analyzed using the SPAA-C include Activity and Body Function. Activity included unintelligibility, communication not meeting the child's needs; our difficulty communicating with each other, while body function included unintelligibility and developmental norms. There currently was not a tool to assess the activity

and participation aspects of children with speech impairment in their social environments (McLeod, 2004).

Summary and Research Questions

Studies analyzing the socio-emotional impact of children's communication disorders on their social, emotional, and behavioral health are increasing. These studies show that various communication disorders, including stuttering, LI, and SSD can negatively impact children's social, emotional, and behavioral health. The purpose of the current study was to learn more about children's attitudes toward their communication abilities by asking children present with LI and/or SSD to complete three questionnaires, the CAT, SLS, and SPAA-C. The results of these questionnaires are important to better understand the populations served by speech-language pathologists. There is a need to know more about how children with communication disorders view themselves and how their communication abilities may be impacting them socially and/or emotionally. Research questions guiding the research were:

1. Do children with different communication disorders earn different scores (or show different profiles of attitudes) on the three questionnaires?
2. What is the relationship between scores collected on the three questionnaires?

Predictions

Based on the current literature, I predicted that there would be a relationship between the children's scores on the three questionnaires. However, given the specific focus on the questionnaires, I also predicted that children who stutter would have the most negative scores on the CAT, those with LI would have the most negative scores on the SLS, and those with SSD would have the most negative scores on the SPAA-C.

CHAPTER 2. METHODS

Participants

Eight children served as participants. The participants ranged from 62-109 months. They all attended schools in a metropolitan area of southeastern Louisiana and were receiving services by a speech-language pathologist. Two children presented with a clinical diagnosis of LI (listed in their report as receptive/expressive language delay); four children presented with a clinical diagnosis of SSD (listed in their report as a phonological disorder), and two children presented with a clinical diagnosis of LI and SSD (listed in their report as an expressive language disorder and a phonological disorder). Although the goal was to recruit children who stutter, only one child with this condition was identified and his/her parent did not consent to the study.

No assent forms were given to children if they presented with other communication disorders such as voice, swallowing, hearing, and/or if they present with other clinical diagnoses such as autism as these were considered exclusionary criteria for this study. After institutional review board approval, caregiver consent, and child assent, the researcher reviewed the child's clinical file and met with the child for one session at the child's school or at a location that is convenient for the child's family. The goal of the file review was to confirm their clinical diagnoses and collect any current test data if available.

The children's test profiles are organized in Table 1 for descriptive purposes. The table includes the participant's clinical diagnosis and age at the time of evaluation. Five of the eight participants are monolingual English speakers. Three children were bilingual. Two children spoken English and Spanish, and one child spoke English and Korean. The three questionnaires were counterbalanced, and the order the assessments were given per participant is also listed in the table. Finally, if assessments within the previous six months were available, the assessment type and score is reported.

Table 1. Participant characteristics

Participant	Dx	Age	Languages	GFTA-3	PLS-5	CELF-P
CK	LI	72	English Korean	Sounds in Words = 75 Sounds in Sentences = 81 9-3-19	N/A	Receptive Language 95 9-10-19
CS	LI	77	N/A	N/A	N/A	N/A
SG	SSD	83	N/A	N/A	N/A	N/A
HC	SSD	92	N/A	N/A	N/A	N/A
RP	SSD	109	N/A	N/A	N/A	N/A
IJ	SSD	93	N/A	N/A	N/A	N/A
AM	LI and SSD	82	English Spanish	Sounds in Words = 82 11-12-19	Auditory Comprehension = 119 Expressive Communication = 64 Total Language Scale = 112 9-3-19	N/A
MM	LI and SSD	62	English Spanish	Sounds in Words = 77 Sounds in Sentences = 84 11-12-19	N/A	N/A

Materials

The CAT (Brutten, 1984), SLS (Nelson et al., 2016), and SPAA-C (McLeod, 2004) assessed the children's attitudes about their communication abilities. Each test was scored as it was intended in the manual, and then it was re-scored in a quantifiable manner in order to compare the questionnaires to each other.

The CAT contains true/false questions. The maximum total score is 33. A score of 17 or more, which is a score that falls 2 SD above the mean, is considered atypical and suggestive of a negative attitude toward speech. In this study, the sum score was used, and as recommended in the manual, a score of 17 or more indicated that a child presents a negative attitude towards his/her speech. Higher scores also indicated more negative attitudes than lower scores.

The SLS contains 12 questions with a rating score of 1-7 for each question. A rating of 1 implies "Not good", whereas a rating of 7 implies "Very Good". The researcher administered the questionnaire as written, although rephrasing was often necessary when the child did not understand the original question. For instance, when asking, "How is it using school vocabulary words when talking?", the clinician rephrased to "How is it using the words you learn in school when you talk?" if the child demonstrated confusion. According to the manual, if the child scores more than two of the first eight questions below 5, then the student has failed the screener. After scoring the SLS according to the manual, the 12 questions with ratings from 1-7 were re- scored by summing the children's answers. For this, the score range was 12 – 84 (12 items x 1-7). The lower the score, the more negative attitude the child had towards his or her language and/or literacy abilities. There are also two opened ended questions, following these 12 questions including, "Please check the things think are easiest/hardest for this student to do: Art, Dance, Music, Mechanical, Sports, Math, Social, Listening, Talking, Reading, Writing, Other."

The SPAA-C was developed with the goal of applying the International Classification

of Functioning Disability and Health (ICF) (WHO, 2001) model to children with speech impairment. The two major factors of ICF analyzed using the SPAA-C include Activity and Body Function. Activity included unintelligibility, communication not meeting the child's needs; our difficulty communicating with each other, while body function included unintelligibility and developmental norms. There currently was not a tool to assess the activity and participation aspects of children with speech impairment in their social environments (McLeod, 2004). The SPAA-C does not have a scoring system, but instead consists of open-ended questions and 10 items for which the child circles emotional faces that depict *Happy, In the middle, Sad, Another Feeling*, and *Don't Know*. After describing each child's performance on this questionnaire as recommended by the manual, the 10 items with emotional faces were re- scored. To do this, a numerical value was given to *Happy* (3), *In the middle* (2), and *Sad* (1). Emotional faces indicating *Another Feeling* and *Don't Know* were excluded as these could not be compared to responses obtained on the CAT or SLS. A sum score was calculated using these 10 items. The scores ranged from 10-30 (10 items x 1-3). A lower score was indicative of a more negative attitude toward the child's communication abilities.

Procedures

Across children, the order in which the questionnaires were given to the children were counterbalanced. Each questionnaire was filled out with the child and researcher together (n=5) or the child and a MA level student clinician (n=3), and the researcher read all items on the questionnaires to the children. The data was coded by number to ensure confidentiality. The researcher (n=5) and student clinicians who are graduate students studying Communication Sciences and Disorders (n=3) administered these questionnaires.

Reliability

Twenty percent of the data (questionnaires from two participants) was randomly selected and independently scored by another examiner. Reliability of scoring was evaluated by comparing the sum scores from the original examiner to those of the second examiner. Data coding was considered reliable if agreement in the scores is over 90%. Overall agreement between the two examiners was 100%. Given this, data scoring was deemed reliable.

CHAPTER 3. RESULTS

Participants were organized into three groups depending on their communication disorder diagnosis: children with LI, and children with SSD, and children with comorbid LI and SSD.

CAT

Table 2 presents the results from the CAT. According to the CAT manual, a score of 17 or above represents a more negative attitude toward speech. Recall that all participants were children who did not stutter even though the CAT was designed for children who do.

Table 2. Communication Attitude Test (CAT)

	Children with LI	**Children with SSD**	**Children with LI and SSD**	**Full Sample**
Mean	13.5	6	9	8.63
SD	7.78	3.65	1.41	5.041
Min.	8	2	8	2
Max.	19	10	10	19

As shown in Table 2, all participants but one scored 10 or lower on the CAT. The only participant who demonstrated a more negative attitude toward his speech according to the CAT presented with LI. This participant was CK and he scored 19. CK was 72 months of age and was a bilingual English and Korean speaker. CK's scores on the SLS and SPAAC, however, did not reflect a negative self-perception. Also, it is very likely that fatigue affected his CAT scores. This participant was seen following a full day of school and after an hour of speech therapy, and the CAT was the final questionnaire administered. Indeed, the researcher observed that during administration of the CAT, CK was intermittently closing his eyes and bobbing his head, and

questions from the CAT had to be repeated.

The CAT data was also analyzed to examine which questions the participants scored themselves highest and lowest. Since there were eight participants in this study and each item could receive a 0 for a positive self-perception, and 1 for a negative self-perception, the maximum negative perception score when analyzing all eight participants was 8 (1 x 8 = 8). The maximum positive perception score when analyzing all eight participants was 0 (0 x 8 = 0). All eight participants provided a 0 or positive response on questions 7: "I like the way I talk", 19: Kids make fun of the way I talk", and 24: "I often have trouble talking." The maximum negative perception score of 8 was not reached on any question. However, the highest negative perception score among these participants was 4 and this occurred for three of the questions. These questions included, 3: "Sometimes words will stick in my mouth when I talk", 18: "Other kids would like to talk like me", and 29: "My words do not come out easily."

SLS

According to the SLS manual, a screening fail is indicated if a rater scores more than two of the first eight questions below 5. If this happens, the student is considered at risk for a language and/or literacy disorder and should be considered for further assessment. The scoring of the SLS according to the manual is shown in Table 3.

Table 3. Student Language Scale – Pass/Fail

	Children with LI	**Children with SSD**	**Children with LI and SSD**	**Full Sample**
Number of Pass Scores	1	2	1	4
Number of Fail Scores	1	2	1	4
Total Participants	2	4	2	8

For each clinical group, half of the participants failed the screener and half passed. After scoring the SLS according to the manual, the 12 questions with ratings from 1-7 were then re-scored by summing the children's answers. For this, the score range was 12 – 84 (12 items x 1-7), and the lower the score, the more negative attitude the child had towards his or her language and/or literacy abilities. Table 4 shows the results of the re-scored sums from the SLS. Children with SSD had the highest mean on the SLS (64.25), and children with LI had the broadest range of scores (41 to 83). Children with SSD overall scored themselves most positively, and children with LI scored themselves moderately negatively to almost maximum positivity.

Table 4. Student Language Scale – Sum Scores

	Children with LI	**Children with SSD**	**Children with LI and SSD**	**Full Sample**
Mean	62	64.25	52.25	60.688
SD	29.70	12.84	9.55	15.4202
Min.	41	47	45.5	41
Max.	83	78	59	83

The data also were analyzed to examine which questions the participants scored themselves highest and lowest collectively. The highest ranking an individual could earn was 7 = "Very good", and the lowest ranking an individual could earn was 1 = "Not good". Since there were eight participants, the highest score an item could earn was 56 (7 x 8 = 56), and the lowest score was 8 (1 x 8 = 8). The highest group score was 51 on question 12: "Interacting socially with other children". The lowest group score was 34 on questions 3: "Figuring out new words when reading" and 8: "Writing a story that makes sense".

Following the 12 questions, there is an "Ability Checklist" which asks the child to check

activities that are easiest and hardest for the child. Regarding the activities, 100% (8/8) selected "Social" as easiest, 87.5% (7/8) of the participants selected "Art" as easiest and 75% (6/8) selected "Math" "Listening" and "Writing" as easiest. The hardest activity was "Reading" for 75% (6/8) of the participants.

SPAA-C

Recall that the SPAA-C included open-ended questions and likert rating scale questions. The individual participant's answers to each SPAA-C Open-ended question can be found in the Appendix. However, as a group, the data was organized to analyze themes amongst the participant's answers. For instance, 75% (6/8) of the participants stated that "recess" was "fun at school", and 62.5% (5/8) of the participants named something academic (spelling tests, reading, science, math, tests) when asked, "What is hard at a school?". When asked, "Do you ever get teased at school?", the responses were: 6 "No", 1 "Sometimes", and 2 "Yes". A child with SSD responded, "Sometimes." A child with LI and a child with LI and SSD responded, "Yes". When asked, "Do you think your talking is different from other children?", the responses included: 4 "Yes" and 4 "No". When asked, "Do you ever get teased about your talking?", the responses were: 1 "Yes" and 7 "No". The child who responded, "Yes" to this question presents with language impairments. Finally, when asked, "Do people often ask you to say things again?", the responses included: 5 "Yes", 1 "sometimes" and 2 "No". As indicated by these results, half of the participants realized their talking was different from other children and 62.5% (5/8) of the participants are asked to repeat themselves, but 75% (6/8) of the participants did not necessarily feel teased.

To analyze the SPAA-C likert rating items, the children's responses were given numerical values: *Happy* (3), *In the middle* (2), and *Sad* (1). Emotional faces indicating *Another*

Feeling and *Don't Know* were excluded as these could not be compared to responses obtained from the CAT or SLS. A sum score was calculated using these 10 items. The scores ranged from 10-30 (10 items x 1-3). A lower score was indicative of a more negative attitude toward the child's communication abilities. The results for these summed scores from SPAA-C is listed in Table 5.

Table 5. Speech Participation and Activity of Children: Emotional Faces Sum Score

	Children with LI	**Children with SSD**	**Children LI and SSD**	**Full Sample**
Mean	23	20.5	26	22.50
SD	2.83	2.65	2.83	3.338
Min.	21	18	24	18
Max.	25	24	28	28

As was done with the CAT and SLS, the SPAA-C data were analyzed to examine which questions the participants scored themselves highest and lowest collectively. The highest ranking an individual could give themselves is 3= "Happy", and the lowest ranking an individual could give themselves is 1= "Sad". Since there are eight participants, the maximum score for an item was 24 (3 x 8 = 24), and the minimum score was 8 (1 x 8 = 8). The highest group perception score was 24 on question 16: "How do you feel when you talk to your best friend?". The next highest group perception score was 23 on questions 15: "How do you feel about the way you talk?" and 22: "How do you feel when you play with the children at school?". The lowest group perception score was 9 on question 24: "How do you feel when people don't understand what you say?" Children with LI and SSD scored themselves most positive on the SPAA-C. Children with SSD demonstrated the widest range of scores, from the highest positive

score to eight points above the most negative score.

Relationships Between the Three Questionnaires

Table 6 re-presents the children's scores for all three questionnaires.

Table 6. Re-presented scores on the three questionnaires by clinical diagnosis.

Participants	CAT	SLS	SPAA-C
Children with LI			
CS	8	41	25
CK	19	83	24
Children with SSD			
SG	2	65	24
HC	8	47	18
RP	10	67	21
IJ	4	78	19
Children with LI and SSD			
AM	8	45.5	24
MM	10	59	28

Using a spearman rho analysis, correlations were run between the three questionnaires. The CAT did not correlate with the SLS (r_s= .25) or the SPAA-C (r_s = .12) but the SLS was moderately and negatively correlated to the SPAA-C (r_s = -.45), but this correlation and the others were not significant at the .05 level (CAT & SLS p = .56; CAT & SPAA-C p = .80; SLS & SPAA-C p = .268). Given this, we can conclude that the children's ratings of their communication abilities were not consistent across the three questionnaires.

Spearman rho correlations were also completed to examine relationships between the participants' ages and their scores on the three questionnaires. Recall that the participants ranged in age from 62 months to 109 months. Age did not correlate with the SLS (r_s = .21), but was correlated moderately and negatively with the CAT (r_s = -.41) and SPAA-C (r_s = -.69). Unfortunately, like the other correlations, these correlations were not significant at the .05 level

(age and CAT p = .319, age and SPAA-C p = .06, age and SLS p = .61). Given this, we can conclude from these data that there is some evidence that as children age, their attitudes toward their communication abilities become more negative, but more data are needed to further examine this possibility.

CHAPTER 4. DISCUSSION

The purpose of the current study was to learn more about the social, emotional, and behavioral profiles of children with communication disorders. The following two research questions guided the study: 1) Do children with different communication disorders earn different scores (or show different profiles of attitudes) on the three questionnaires? And 2) What is the relationship between scores collected on the three questionnaires? Children with different communication disorders gave themselves slightly different ratings on the three questionnaires. Children with LI scored a range of 8-19 on the CAT, 41-83 on the SLS, and 21-25 on the SPAA-C. Children with SSD scored a range of 2-10 on the CAT, 47-78 on the SLS, and 18-24 SPAA-C. Children with both LI and SSD scored a range of 8-10 on the CAT, 45.5-59 on the SLS, and 24-28 on the SPAA-C. These results indicate that the children did not demonstrate overtly negative attitudes toward their communication abilities.

The children's ratings on the three questionnaires were weakly correlated to each other. The highest correlation was between the SLS and SPAA-C (r_s = .45), but this correlation like the others, was not significant at the .05 level. However, the association between age and SPAA-C scores approached significance (p = .06). Age did not correlate with SLS (r_s = .21), but it did correlate moderately and negatively with the CAT (r_s = -.41) and SPAA-C (r_s = -.69). Again, though, none of these correlations were significant.

Findings as Related to Previous Studies

All but one participant scored 10 or lower on the CAT, a questionnaire that is designed for children who stutter. A score of 17 or more, which is a score that falls 2 SD above the mean, is considered atypical and suggestive of a negative attitude. While there were no children who stuttered included in the current study, results for the children with LI, SSD, and comorbid LI

and SSD were consistent with the literature which shows that children who do not stutter usually score themselves below a 17 on the CAT (Vanryckeghan & Brutten, 2001).

As discussed in the literature review, children with LI may have negative socio-emotional profiles that relate to their communication disorder. According to Whitehouse, Watt, Line, and Bishop (2009), children with LI are highly susceptible to presenting difficulties in not only oral communication, but also literacy, academic achievement, employment, and social relationships (Dockrell et al., 2007; Donlan et al., 2007; Durkin & Shire, 1991; St Clair et al., 2010). For the participants in the current study, those with LI or comorbid LI and SSD reported difficulty in academics and socially when administered the SPAA-C. Interestingly, those with SSD did the same, and perhaps even mentioned more difficulty with not only reading but science and math. However, children with LI did not report difficulties with social relationships when given the SPAA-C.

Poor speech sound production skills in kindergartners have been associated with lower literacy outcomes (Overby, Trainin, Smit, Bernthal, & Nelson, 2012). Participants with LI and SSD reported difficulty in tests and spelling tests. Studies have analyzed the long-term outcomes of SSD which can impact an individual's academics, psychological, and social well-being (Feeney, Desha, Ziviani, & Nicholson, 2012; Lindsay, Dockrell, & Strand, 2007; McCormack, Harrison, McLeod, & McAllister, 2011; St. Clair, Pickles, Durkin, & Conti-Ramsden, 2011). Half of the participants in this study with SSD and comorbid LI and SSD reported teasing at school and wanting to talk to "nobody" on the SPAA-C.

Based on the current literature, I predicted that there would be a relationship between the children's scores on the three questionnaires. However, given the specific focus on the questionnaires, I also predicted that children who stutter would have the most negative scores

on the CAT, those with LI would have the most negative scores on the SLS, and those with SSD would have the most negative scores on the SPAA-C. There was not a relationship between the children's scores on the three questionnaires. In addition, the children with LI did not have the lowest scores on the SLS and the children with SSD did not score the lowest on the SPAA-C. This could be in part due to the small sample size. Also, there were no participants who stuttered.

Limitations

There were several limitations to the current study. First, the number of children was low and unequal for clinical populations, with two children with LI, four with SSD, and two with comorbid LI and SSD, and three participants were bilingual. Also, there were no children who stuttered included in the study. Second, the participants' clinical files did not always have speech and language assessment scores, so I was unable to confirm the nature and severity of the children's communication disorders. Third, for two of the participants, the parent commented that he was not sure if the child understood what the researcher was asking, and this included CK who earned the elevated negative score of 19 on the CAT. The researcher also was unsure of these two children's responses while she was administering the questionnaires.

While the questionnaires were orally read to the participants, some participants presented with LI, so it may not be surprising that a parent and the researcher were concerned about the children's understanding of the questions. Six of the children presented with LI so understanding spoken language was likely difficult for them. To examine this issue in more detail, a post hoc analysis was done to determine the grade level readability of each questionnaire. To do this, each questionnaire was typed into Microsoft Word to calculate a Flesch-Kincaid Grade Level reading score. The Flesch-Kincaid Grade Level relates to grade level education in the United States that

the reader would need to be able to understand that piece of text. The Flesch-Kincaid Grade Level for each assessment was as follows: CAT Grade Level 1, SLS Grade Level 6.5, SPAA-C Open-ended Questions Grade Level 1.3, and SPAA-C Emotional Faces Grade Level 3.8. While according to the Flesch-Kincaid Grade Level, the CAT was determined to have a Grade Level 1, the questionnaire has double negatives such as, "I don't find it easy to talk," which can confuse the client. Also, the client is asked to respond, "true" or "false" which may be a more complicated concept for younger children to understand. These findings support the impressions that some questions could have been too difficult for the children to comprehend.

Clinical Implications

Based on the current set of findings, clinicians may want to administer all three tools until more data are collected from a larger group of participants. Administering all three takes 15-30 minutes; administering just one of the three takes less than ten minutes.

In addition to the findings, there are other factors to consider for clinical practice. For example, another important aspect to consider for clinical practice is cost. The CAT costs $304.95, the SLS costs $49.94, and SPAA-C is free and can be download from the internet. Also, the questionnaires ask children different types of questions in different ways. For example, the SPAA-C allows the clinician to learn about how a child feels talking to several different people in many situations. The SPAA-C also uses emotional faces that were easy for the participants to understand. By comparison, the CAT includes double negative questions and true/false statements which were confusing to some of the children. The SLS also was difficult for the children as the Likert scale ranged from 1-7 and did not have emotional or concrete anchors help guide the child's ratings. The questions on this tool also received the highest level of grade

difficulty (i.e., 6th grade) compared to the others. However, the final two questions of the SLS allows a clinician to learn about what a child views as easy versus difficult at school.

Future Directions

Future studies should increase the number of participants as well as expanding the age range of the participants. In addition, future studies should target children who stutter to compare their responses on the questionnaires to those who do not stutter. In future studies, for students who are young, it may be wise to exclude the SLS, as the Grade Level readability is at a sixth-grade level. Alternative prompts to rephrase the question could also address this concern in a standardized manner. Lastly, formal speech and language assessments should be obtained from each participant to confirm his or her diagnosis.

Conclusion

In conclusion, the results showed that the children studied in general did not present with a negative social, emotional, and behavioral profile as measured by the three questionnaires. The children's ratings on the questionnaires were also not highly correlated to each other or to the children's ages, although for the CAT and SPAA-C, there was a trend showing a relationship between the children's ages and their negative ratings. Future studies with more participants and participants who stutter are recommended. Until then, clinicians should consider administering all three questionnaires in clinical practice to learn more about children's a social, emotional, and behavioral profiles.

APPENDIX A. SUPPLEMENTAL DATA.

Participants	Group	Age (in months)	CAT	SLS	SPAAC
SG	1	83	2	65.0	24
HC	1	92	8	47.0	18
IJ	1	93	4	78.0	19
RP	1	109	10	67.0	21
CK	2	72	19	83.0	21
CS	2	77	8	41.0	25
MM	3	62	10	59.0	28
AM	3	82	8	45.5	24

Speech Participation and Activity of Children: Open-ended Questions

Question 1 – "What are your favorite things to do at school? At home? At school/preschool?"

AM – Home - Pokemon battles, School – play with friends

MM – Play, play, play

CK– Games – Mario

SG – Play at recess; draw at home

HC – Go upstairs and Imaginate; Recess- Minecraft

RP – Play basketball, play football

IJ – Play outside, play at recess with my friends

CS – Go to friend Riley's house, math

Question 2 – "What games/sports do you play?"

AM – Soccer, tennis

MM – Tennis

CK - Play, toys

SG – Soccer, monopoly

HC – Soccer, basketball

RP – Baseball, soccer, football, basketball

IJ – Soccer, basketball

CS – Softball, soccer

Question 3 – "What are you good at?"

AM – Art

MM – I don't know

CK –Making airplane and boats with paper

SG - Dance

HC – Soccer

RP – Writing cursive

IJ – Monkey bars

CS – Running

Question 4 – "Who do you like to play with?"

AM – Best friend

MM – Kyle

CK - *No response

SG – My classmates

HC – Jacob

RP - Grayson

IJ – Jenneyve

CS – my dog Chase

Question 5 – "If Mum and Dad said, "What do you want to do?" what would you say and who would you take?"

AM – Play with best friend at her house

MM – Kyle; play with Kyle

CK- Hotel

SG – jumping on the trampoline with my best friends Vera and Abigail

HC – go to a friend's house; Brancen

RP – my brother, play

IJ – Disney World – Bella

CS – Area 51 – friend

Question 6 – "Who do you like to play with?"

AM – Aislyn (best friend)

MM – Kyle

CK – Jaden

SG – Vera and Abigail, all of my friend

HC – Brancen and Jacob

RP - Grayson

IJ – Bella and Emma

CS – my little friend Anderson

Question 7 – "What is fun for you at school/preschool?"

AM – Recess, lunch, and art

MM – to play Pokemon

CK – going recess

SG - recess

HC – recess

RP – going to PE

IJ – recess, speech, music, PE

CS – recess

Question 8 – "What is the best thing about school/preschool?"

AM – being with friends and art

MM – playing Pokemon

CK – I don't know

SG – seeing all my friends

HC – math

RP – spend time with friends

IJ - PE

CS – you get PE, in 3rd grade you get PE every single day

Question 9 – "What is hard for you at school/preschool?"

AM – Spelling tests

MM – I don't know

CK – Talking

SG – Meeting all the big kids; it's hard cause I'm really nervous

HC – Reading

RP – Science

IJ - Math

CS - Tests

Question 10 – “Do you ever get teased at school/preschool?”

AM – No

MM – Yes, Easten said he’s so glad I did not finish my work

CK– No

SG - No

HC – Sometimes

RP – No

IJ - No

CS - No

Question 11- “Who do you like to talk to?”

AM – Aislyn, his brother and family

MM – Nobody

CK – Nobody

SG - Everybody

HC – My friends

RP - Grayson

IJ - Jennyve

CS - Adelyn

Question 12 – “When do you like to talk to people?”

AM – Whenever they’re available

MM – When there's nobody. I like to talk with nobody

CK -*Unintelligible

SG – All the time

HC – I don't know the time

RP – Recess

IJ – At recess or when I'm at their house

CS – When I'm lonely, I'll go find a friend to talk to

Question 13 – "When don't you like to talk to people?"

AM – When I'm sad

MM – Never

CK – I don't

SG - Never

HC – Night

RP – Spanish

IJ - *shrug*

CS – When I'm sad

Question 14 – "Do you think your talking is different from other children's?"

AM – Yes

MM – No

CK – Yes

SG – Yes/no actually

HC - No

RP - Yes

IJ – I don't think so, but it's a little different from others (accents)

CS - Yes

Question 25 – "Do you ever get teased about your talking? What do people say?"

AM – No

MM – No

CK – Yes

SG - Yes

HC - Never

RP - No

IJ - No

CS - No

Question 26 – "Do people often ask you to say things again? How does this make your feel?"

AM – Yes- In the middle

MM – No

CK – Yes, better

SG –Sometimes, weird

HC – No

RP – Yes; happy

IJ- Yes; fine

CS – Yes; kinda frustrated because I have to say it over and over again

Question 27 – "What do you do when people don't understand you? (e.g., keep trying, change your message, give up, get cross, etc.)"

AM – Feel better, keep trying

MM – Get happy

CK – Better

SG – Try again

HC – Don’t say anything

RP – Say it again

IJ – Keep trying or write a note when on phone

CS – Just tell them one more time and if they don’t get it just walk away

APPENDIX B. IRB FORM.

ACTION ON PROTOCOL APPROVAL REQUEST

Institutional Review Board
Dr. Dennis Landin, Chair
130 David Boyd Hall
Baton Rouge, LA 70803
P: 225.578.8692
F: 225.578.5983
irb@lsu.edu
lsu.edu/research

TO: Janna Oetting
Communication Sciences and Disorders

FROM: Dennis Landin
Kinesiology

DATE: September 12, 2019

RE: **IRB#** 4279

TITLE: Children's Attitudes Toward Their Communication Abilities According to Clinical Status

New Protocol/Modification/Continuation: New Protocol

Review type: Full ____ Expedited _X_ **Review date:** 9/12/2019

Risk Factor: Minimal ___X___ Uncertain _____ Greater Than Minimal_____

Approved_____X_____ **Disapproved**_____

Approval Date: 9/12/2019 **Approval Expiration Date:** 9/11/2020

Re-review frequency: (annual unless otherwise stated)

Number of subjects approved: 20

LSU Proposal Number (if applicable)**:**

By: Dennis Landin, Chairman _____

PRINCIPAL INVESTIGATOR: PLEASE READ THE FOLLOWING –
Continuing approval is CONDITIONAL on:

1. Adherence to the approved protocol, familiarity with, and adherence to the ethical standards of the Belmont Report, and LSU's Assurance of Compliance with DHHS regulations for the protection of human subjects*
2. Prior approval of a change in protocol, including revision of the consent documents or an increase in the number of subjects over that approved.
3. Obtaining renewed approval (or submittal of a termination report), prior to the approval expiration date, upon request by the IRB office (irrespective of when the project actually begins); notification of project termination.
4. Retention of documentation of informed consent and study records for at least 3 years after the study ends.
5. Continuing attention to the physical and psychological well-being and informed consent of the individual participants, including notification of new information that might affect consent.
6. A prompt report to the IRB of any adverse event affecting a participant potentially arising from the study.
7. Notification of the IRB of a serious compliance failure.
8. **SPECIAL NOTE: When emailing more than one recipient, make sure you use bcc.**

**All investigators and support staff have access to copies of the Belmont Report, LSU's Assurance with DHHS, DHHS (45 CFR 46) and FDA regulations governing use of human subjects, and other relevant documents in print in this office or on our World Wide Web site at http://www.lsu.edu/irb*

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