ECHO: Journal of the National Black Association for Speech-Language and Hearing

ECHO: Journal of the National Black Association for Speech-Language and Hearing is an international e-journal concerning communication and communication disorders within and among the social, cultural and linguistically diverse populations, with an emphasis on those populations who are underserved.

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About the Executive Editor

Robert Mayo, PhD, *ECHO*'s, Executive Editor, is a professor in the Department of Communication Sciences and Disorders at The University of North Carolina at Greensboro. Dr. Mayo has served as Managing Editor for ECHO and as an editorial reviewer for journals published by the American Speech-Language-Hearing Association such as the Journal of Speech-Language-Hearing Research and Language, Speech, and Hearing Services in Schools. Dr. Mayo has published and presented papers in his primary areas of scholarly interest: Fluency Disorders, Craniofacial Anomalies, and Public Perceptions of Communication Disorders and Differences. E-mail address: r_mayo@uncg.edu.

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Ronald Jones, PhD, *ECHO's* Managing Editor, is a professor in the Department of English and Foreign Languages at Norfolk State University, Norfolk, Virginia. Dr. Jones has served as Editor (of Letters) for the former ASHA magazine and is the Founding Editor for Resound))), NBASLH's e-newsletter. Dr. Jones served as Chair of the Board for the National Black Association for Speech-Language and Hearing (2006-2008), and has been Managing Editor for ECHO for all but two of the past 10 years. Dr. Jones has published and presented papers in his primary areas of scholarly interest: Auditory Processing Disorders. E-mail address: rjones@nsu.edu.

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The following individuals served as reviewers or otherwise contributed, editorially, to this issue of the Journal. We thank them for their contributions to ECHO (any omissions were certainly unintentional):

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Jamila Minga
Ronda Walker

About the Journal

ECHO: Journal of the National Black Association for Speech-Language and Hearing is a peer-reviewed, refereed journal that welcomes submissions concerning communication and communication disorders from practitioners, researchers or scholars that comprise diverse racial and ethic backgrounds, as well as academic orientations.

ECHO welcomes submissions from professionals or scholars interested in communication breakdown and/or communication disorders in the context of the social, cultural and linguistic diversity within and among countries around the world.

ECHO is especially focused on those populations where diagnostic and intervention services are limited and/or are often provided services which are not culturally appropriate. It is expected that scholars in those areas could include, but not limited to, speech-language pathology, audiology, psychology, linguistics and sociology.

Articles can cover any aspect of child or adult language communication and swallowing, including prevention, screening, assessment, intervention and environmental modifications. Special issues of *ECHO* concerning a specific topic may also be suggested by an author or through the initiation of the editors.

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Topics accepted for publication in ECHO could include, but is not limited to, the following:

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- Use of the World Health Organization's International Classification of Functioning, Disability, and Health (ICF) framework to describe communication use and disorders among the world's populations.
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- Requests that the manuscript be considered for publication;
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- Affirms that the manuscript is not currently submitted elsewhere;
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EDITOR'S NOTE

This issue of ***ECHO: Journal of the National Black Association for Speech-Language and Hearing***, marks the final volume under the stewardship of Managing Editor Dr. Ronald C. Jones. Dr. Jones has faithfully served as managing editor for ***ECHO*** for all but two of the past 10 years. Under Ron's leadership, the number of peer-reviewed articles published in ***ECHO*** has grown in both quantity and quality. A true innovator, Dr. Jones conceived the idea of transitioning ***ECHO*** from print format to an open-source online digital journal. A professor in the Department of English and Foreign Languages at Norfolk State University, Norfolk, Virginia, Dr. Jones has served as editor (of letters) for the former ASHA magazine and is the Founding Editor for ***Resound)))***, NBASLH's e-newsletter. Dr. Jones served as chair of the Board for the National Black Association for Speech-Language and Hearing (2006-2008), and has published and presented papers in his primary areas of scholarly interest: auditory processing disorders, hearing health care, hearing impaired children, and disparities in hearing health care. In 2014, Ron received one of NBASLH's highest awards, the William T. Simpkins, Jr. Service Award for his dedication to the association and service as managing editor for ECHO. Ron's leadership will truly be missed. We thank him for his vision, drive and tenacity in creating an accessible professional scholarly vehicle for works pertaining to the communication health and service issues of culturally and linguistically diverse populations around the world.

Robert Mayo, Executive Editor

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COMPARISON OF GRAMMATICALITY IN NARRATIVE TASKS IN CHILDREN EXPOSED TO MONOLINGUAL OR BILINGUAL LANGUAGE INPUT

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ABSTRACT

The purpose of this study was to identify whether monolingual and bilingual environments differentially affect children's grammatical abilities in narratives. Seventy-five school-age children were classified as living in either a monolingual or bilingual home environment. Parent interviews were conducted to determine language input in the home. All of the children were then classified as coming from either a monolingual or bilingual home environment. The children were asked to produce narratives in their language of choice (Spanish or English) and each narrative was transcribed and coded for grammaticality. The data were analyzed and the results showed that neither monolingual nor bilingual home environments significantly impacted the grammaticality of the children's narratives.

KEY WORDS: bilingualism, narratives, language input, grammaticality

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INTRODUCTION

Currently, approximately 20% of American homes have school-age children who speak a second language in addition to English. Of those, 60% are Spanish/English-speakers (Camarota & Zeigler, 2014). In the past decades, there has been much discussion concerning the language development of a child in a monolingual versus a bilingual home environment. Many parents of bilingual school-age children have expressed concerns about their children's language development as it relates to the language input provided at home. Some parents are concerned that their children will develop language delays as a result of introducing a second language in the home (Raguenaud, 2009). Researchers have attempted to resolve these concerns by comparing the narrative development of bilingual and monolingual children; however, it is difficult to generalize results due to the varying methods used to identify the amount of first language (L1) and second language (L2) input. In addition, researchers used a variety of methods to determine language proficiency levels in children. A study by Steiner, Hayes and Parker (2009) suggested there is no correlation between bilingualism and children's language development rate. However, Pearson (2007) suggested that the amount of language input, language proficiency in each language, and the age of L1 and L2 acquisition do impact bilingual language development.

Unfortunately, quantifying the level of L1 or L2 input in the home environment is difficult. Most researchers use parent questionnaires and/or teacher questionnaires to determine the percentage of input in one language versus another. However, determining a percentage is ambiguous because parents and teachers do not systematically record time spent using one language compared to the other. At best, they can only estimate the percentage of L1 and L2 usage. It is these difficulties in quantification of language input that make it challenging for professionals to provide evidence-based recommendations regarding the language of instruction when children start school.

Whether the language is English or Spanish can also impact the effect of language input at home. A study by Byers-Heinlein (2013) found the amount of English language input is predictive of the vocabulary size in English for Spanish/English-speaking 2-year-old children. When parents reported speaking Spanish at home, Spanish/English bilingual children attending kindergarten developed both Spanish and English language skills equally. However, Spanish/English bilingual children who were exposed to English the majority of the time at home developed better English language skills than Spanish (Cha & Goldenberg, 2015). In another study, with German/French bilingual speakers, researchers found a significant relationship between exposure to French and vocabulary development. However, when exposed to German, children developed vocabulary at a relatively slower rate (MacLeod et al., 2013). For Chinese/English bilingual speaking preschoolers, Chinese language and literacy related activities were correlated with children's oral language abilities in Chinese (Li & Tan, 2015). While input plays an important role in language development, having one parent speak one language and the other speak another language, did not support the development of both languages (MacLeod et al., 2013).

In addition to the amount of language input in either language, one also has to consider the quality of the input. According to Cha and Goldenberg (2015), the quality of language input has little or no effect on the acquisition of a second language. Bilingual language input can be the result of parents using one language and siblings speaking two languages. Children play an important role in influencing the language spoken at home, especially once they enter school (MacLeod, Fabiano-Smith, Boegner-Pagé, & Fontolliet, 2013). The greater the number of older siblings a Spanish/English bilingual child has, the more likely they are to speak English at home with their siblings (Kibler, Palacios, & Baird, 2014).

Determining how home language input and quality of input impacts the ability of the child to acquire the correct syntactic aspects of language is very important (Montrul, 2008). There have been studies that show certain grammatical skills such as tense markers, negatives, and prepositions are affected by the use of a second language and develop later for bilingual children than monolingual children (Arnberg, 1987). Such findings may be due to the fact that a monolingual or bilingual child may be exposed to the same amount of language input; however, the monolingual child receives all of the input in one language. For the bilingual child, exposure to two languages necessarily reduces the amount of time they are exposed to the dominant language, perhaps by as much as 50%; this does not reflect on the quality of exposure (Arnberg, 1987). Nevertheless, it is believed that the bilingual child will eventually reach the same level of grammatical proficiency of a monolingual child even though the rate of acquisition may differ. (Arnberg, 1987).

The rate at which grammatical markers are mastered by bilingual children differs from that of monolingual children. For example, awareness of the correct use of grammatical morphemes (determiners, object noun placement, and order of adjectives and nouns) developed much earlier in a group of French/English bilingual preschool children compared to monolingual English speaking peers (Foursha-Stephenson & Nicoladis, 2011). However, simultaneous Chinese/English and French/English speaking 5- to 12 year-old bilingual children, who were exposed to both of their languages by two years of age, demonstrated similar rates of accuracy in their production of past tense in English, compared to monolingual English speaking peers (Paradis, Nicoladis, Crago, & Genesee 2011). Alternatively, morphemes were mastered by preschool children who were exposed to only English at home and school much earlier than children exposed to English and Spanish or just Spanish at home. In that case, some of the morphemes were mastered by the children exposed to Spanish by the end of the second year in Head Start (Davison & Hammer, 2012). Because of variability when comparing bilingual children to monolingual children, comparing bilingual children to similar bilingual children when evaluating mastery of grammatical morphemes is important; some grammatical skills may be mastered by bilinguals earlier, at the same rate, or later than monolinguals (Morgan, Restrepo, & Auza, 2013).

Obtaining narratives from preschool children provides insight into how they use grammar in the language of their choice (i.e. English or Spanish). By analyzing narratives, researchers can determine how a child organizes words into sentences to tell a cohesive story (Minami, 2011). Narrative analyses also allow researchers to "explore how second language learners acquire grammatical sub-systems, such as negatives, interrogatives, grammatical morphemes, and the use of definite and indefinite articles" (Minami, 2011, p.4). However, little research has been done to examine how types and amounts of home language input affect grammaticality in the context of narratives.

Comparing grammaticality in English and Spanish poses difficulty for researchers because Spanish has richer verb morphology than English. Additionally, subjects are not overtly marked in Spanish, as it is a pro-drop language. Verbs contain information about tense, aspect, and mood and there must be agreement in person and number. Nouns must include information for number and gender (Bedore & Leonard, 2001; Terrell & Salgués de Cargill, 1979)

Recognizing the grammatical differences between English and Spanish provides support for different rates in acquisition of certain grammatical markers in each language. Examples of skills that are mastered by four-year-old Spanish speaking children include pronouns, present tense, present subjunctive, prepositions, possessives, and plurals (For a more complete list of skills that should be acquired by age four, see Goldstein, 2000). Five-year-old Spanish speaking children are expected to master past subjective, irregular preterite, number, and gender, among other skills (See Goldstein (2000) for a more complete list of skills). However, English speaking four-year-old children are expected to produce all morphemes in English with irregular third person, contractible copulas, and contractible auxiliaries being mastered last (Brown, 2009). Therefore, by age five5, English speaking children are expected to have mastered all English morphemes (Brown, 2009). There are more morphological markers in Spanish than there are in English, perhaps explaining why mastery of morphological markers continues to develop in Spanish at later ages than in English.

Different areas of grammar are difficult for children who speak Spanish and children who speak English. In Spanish, children produced what the authors referred to as "near misses", meaning that their responses were only incorrect in one feature (e.g., third person form replacing first person form) (Bedore & Leonard, 2001). Direct object clitics were sometimes omitted and sometimes substituted with a clitic that was plural instead of singular (Bedore & Leonard, 2001). In contrast, English-speaking children make some errors in tense, which can involve omitting verb endings (Charest & Leonard, 2004). Children with language impairment also omit that and wh-relative pronouns in English (Schuele & Tolbert, 2001). For Spanish-English bilingual elementary and middle school age children, omissions of grammatical morphemes in the context of narratives were the best predictors of language impairment (Jacobson & Walden, 2013). Therefore, the specific errors with grammatical markers will vary based on the child's language experience.

While grammatical errors may lower the overall percentage of correct grammatical utterances, there could be other influencing factors that are contributing to grammatical errors. For example, a child may be attempting to use more complex syntax and as a result they may produce grammatical errors, rather than a child who uses all simple utterances and has a high percentage of grammatical utterances (Grela 2003). Processing accounts posit that an individual may be focusing on a new skill and there may be a cost to a previously mastered skill involved (Weismer & Evans, 2002).

For evaluating the language abilities of Spanish-English bilingual kindergarten age children, MLU and grammaticality obtained from narratives are valid measures (Bedore, Peña, Gillam, & Ho, 2010). Specifically, global judgments of grammaticality (percent of utterances that are grammatically correct), which are sensitive to age, are valid measures of development for Latino preschool age children from low SES environments (Muñoz, Gillam, Peña, & Gulley-Faehnle, 2003). Spanish-English bilingual children produce narratives with similar levels of grammaticality regardless of the language of production (Fiestas & Peña, 2004). Documenting performance in the area of grammaticality in narratives is important because grammaticality is an area that is sensitive to change for Spanish-English bilingual speaking children during preschool and early kindergarten age (Muñoz, et al., 2003). For preschool age bilingual English dominant children, there were no differences in grammaticality measures due to bilingual status (Rezzonico, Chen, Cleave, Greenberg, Hipfner-Boucher, Johnson, & Girolametto, 2015). Verb finiteness marking was also similar for children regardless of bilingual status in narratives elicited by examiners (Gutierrez-Clellen, Simon-Cereijido, & Wagner, 2008). In a retrospective exploratory study, Resendiz, Henrich, Domsch, and Belasco (2014) concluded that output, or speaking two languages, did not reduce children's grammaticality in the context of narratives.

The current study examines the extent to which monolingual and bilingual language environments affect children's grammaticality in narratives. The specific research question was: Do children from monolingual homes exhibit a significant difference in percentage of grammatically correct utterances in narratives compared to children form bilingual homes?

METHOD

Participants

A sample of 75 typically developing preschool children from central Texas was selected from a larger study (Resendiz, in preparation). All of the children passed hearing screenings as reported by the school nurse. Children were identified as typically developing based on the following criteria: (1) No diagnosis of language impaired, as reported by the teachers, and (2) no concern expressed by parents nor ratings reported by parents that reflected typical language development in English or Spanish (e.g. How often does your child produce well-formed sentences in English when conversing or telling stories? Very often.). The children were classified as monolingual or bilingual based on parental information about language input in the home. Language input was determined according to a specific criterion that examined hourly exposure at home to each language. Those who were only exposed to one language with zero hours of a second language were considered monolingual speakers (English with zero hours of Spanish, or Spanish with zero hours of English). Bilingual language input was classified as those who were exposed to one or more hours of two languages (English with one or more hours of Spanish, or Spanish with one or more hours in English). Of the 75 children selected for this specific study, 15 were classified as monolingual and 60 were classified as bilingual (see *Table 1*).

The monolingual group participants demonstrated a mean age of 59.6 months (SD=3.5 months) and the bilingual group participants demonstrated a mean age of 60.3 months (SD=3.8 months). Eight of the children in the monolingual group were male and seven were female. The bilingual group consisted of 29 males and 31 females *(see Table 1)*. A greater percentage (67%) of the mothers of the monolingual children achieved a high school or partial college education, whereas more (42%) of the mothers of the bilingual children received less than 7th and 9th grade education. Similar results were found with the paternal education of both groups *(See Table 1)*.

Table 1:

Participant Demographics

Variable		Monolingual (n=15)	Bilingual (n=60)
Gender	Male	8 (53%)	29 (48%)
	Female	7 (47%)	31 (52%)
Age	Mean	59.6 months	60.3 months
	Standard Deviation	3.5 months	3.8 months
Lunch Program	Free	5 (33%)	36 (60%)
	Reduced	1 (7%)	6 (10%)
	Regular	1 (7%)	2 (3%)
	Chose Not To Report	8 (53%)	16 (27%)
Maternal Education	<7th Grade	0 (0%)	16 (27%)
	8th or 9th Grade	3 (20%)	9 (15%)
	10th or 11th Grade	2 (13%)	5 (8%)
	High School Graduate	6 (40%)	20 (33%)
	Partial College	4 (27%)	6 (10%)
	College Degree	0 (0%)	4 (7%)
	Graduate Degree	0 (0%)	0 (0%)
	Unknown	0 (0%)	0 (0%)
Paternal Education	<7th Grade	1 (7%)	13 (22%)
	8th or 9th Grade	2 (13%)	14 (23%)
	10th or 11th Grade	1 (7%)	4 (67%)
	High School Graduate	7 (47%)	15 (25%)
	Partial College	2 (13%)	7 (12%)
	College Degree	2 (13%)	2 (3%)
	Graduate Degree	0 (0%)	1 (2%)
	Unknown	0 (0%)	4 (7%)

Procedures

Data Collection. Data were collected from both the children and the parents of the children in both groups. Parent interviews were conducted via telephone to collect information pertaining to the child's language input at home (Gutierrez-Clellen & Kreiter, 2003). Parents were asked about the child's language exposure since birth and if any concerns were present regarding the child's language development. They were also asked to provide detailed hourly information about the activities and languages their child was exposed to during a typical day. Descriptions as to the type of activity and the individuals the child interacted with were gathered at this time. All of these data were collated and used to determine the type of language input to which the child was exposed.

Narratives were obtained from children in both groups. The intent was to analyze development of grammar in the language the child was most comfortable using, not the ability to acquire English grammar. The children were instructed to produce narratives, in the language of their choice, using wordless picture books from the frog series by Mayer (1975). Five of the children in the monolingual group chose to produce a narrative in Spanish, while ten chose to produce a narrative in English. For children in the bilingual group, 38 of the children chose to produce a narrative in Spanish and 21 chose to produce a narrative in English *(see Table 2)*.

Table 2.

Language of Narrative Production

	Spanish Narrative	English Narrative
Monolingual Group	5	10
Bilingual Group	38	21

Transcription and Coding of Grammatical and Ungrammatical Narrative Samples.

Narratives were transcribed and coded by undergraduate and graduate students trained in the use of Systematic Analysis of Language Transcripts (SALT; Miller & Iglesias, 2012). Narratives produced in English were coded by students who self-reported they were fluent in understanding, speaking, reading, and writing in English. Narratives produced in Spanish were coded by students who self-reported they were fluent in understanding, speaking, reading, and writing Spanish. Students who transcribed in English all produced at least one transcription in English for the primary investigator to check to ensure that the coding conventions of SALT (Miller & Iglesias, 2012) for English were followed and utterances were typed correctly. Students who transcribed in Spanish also produced at least one transcription in Spanish for the primary investigator to evaluate and confirm that utterances were being properly typed and coding conventions of SALT (Miller & Iglesias, 2012) for Spanish were followed.

Each narrative was transcribed in C-units and coded using SALT (Miller & Iglesias, 2012). Only complete and intelligible utterances were analyzed. Utterances that consisted of one word were coded as grammatical if the word appropriately followed or completed a previous statement or question by the examiner. One word utterances were coded as ungrammatical if they did not follow or complete a previous utterance and did not contain enough information to be grammatical. For example, in Spanish one word utterances can be grammatical on their own (e.g., brincó, he jumped) if they contain information about person and tense. No single word utterances were produced by the students who told their stories in English. Two-word utterances with implied information such as “Thank you” were coded as grammatically correct. Utterances were coded as grammatical if they did not have errors or omissions in one of the following: gender, number, case or person, prepositions, articles, verb conjugations, clitics, verb omissions, and over-regularizations of verbs (Cooperson, Bedore, & Peña, 2013). Grammaticality was calculated by dividing the number of grammatical utterances by the total number of utterances in the child’s language sample. Refer to *Table 3* for some examples of grammatical and ungrammatical utterances in both English and Spanish.

Table 3.

Examples of Grammatical and Ungrammatical Utterances in Narratives

Language	Grammatical	Ungrammatical
English	He’s going to catch some frogs.	He runout the door.
Spanish	El estabacontento.	La ranase corren.

Reliability. Twenty-five percent of the narratives were randomly selected and transcribed by a second student who followed the same procedure to score the narratives. Reliability between the two transcribers, calculated at the word level, was 93%. Twenty percent of the narratives were also randomly selected to verify reliability of grammaticality coding. A second student, following the same procedures as the original coder, independently assigned a code of either grammatical or ungrammatical to all of the child's complete and intelligible utterances. Reliability between the two coders was 86%.

Grammaticality Results

Percent of correct grammatical utterances for the two groups of students, monolingual and bilingual, were used in a t-test to determine whether a monolingual environment (regardless of whether the language spoken at home was Spanish or English) produced measurable differences in grammaticality compared to a bilingual (both Spanish and English) home environment. On average, the monolingual group (N=15) produced a slightly lower percentage of grammatically correct utterances (M=65.5%, SE=6.8) than the bilingual group (N=60, M=68.1%, SE=3.8). However, this difference was not significant $t(73)=-0.319$, $p>.05$ and produced a small effect size $r=.04$.

In order to ensure the reliability of results, given the difference in sample sizes (N=15 monolingual; N=60 bilingual) three random samples (N=15) were drawn from the bilingual group, and the t-tests were repeated. These tests on equal group sizes produced only small variations in outcome, all of which were statistically insignificant. Results for all four t-tests (the total group with N=75, and each random sample with N=30) are summarized in *Table 4*.

Table 4

Summary of t-test Results

Group	N	Mean	SE	*t*	df	Sig.	*R*
Total Group				-0.319	73	0.488	.04
Monolingual	15	65.476	6.783				
Bilingual	60	68.132	3.796				
Random Sample 1				0.077	28	0.728	.01
Monolingual	15	65.476	6.783				
Bilingual	15	64.708	7.289				
Random Sample 2				-1.427	28	0.544	.3
Monolingual	15	65.476	6.783				
Bilingual	15	78.281	5.870				
Random Sample 3				0.065	28	0.387	.01
Monolingual	15	65.476	6.783				
Bilingual	15	64.797	7.991				

Discussion

The purpose of this study was to determine whether children from monolingual or bilingual homes exhibit a significant difference when using a global measure of grammaticality like the percentage of grammatically correct utterances in narratives. Our findings suggest that neither monolingual nor bilingual language input negatively impacts grammaticality. However, Pearson (2007) found that one of the factors which affected language development was amount of language input, but Pearson did not specifically evaluate grammaticality. Some studies suggest that monolingual children exhibit a higher proficiency in grammatical tasks because they are exposed to just one language (Arnberg, 1987). Our findings do not concur with Pearson (2007) or Arnberg (1987) as there was no significant difference on the global measure of grammaticality in a child's narratives based on the language environment at home. However, our findings did concur with Steiner et al. (2009) that children from homes where two languages are spoken are not at a disadvantage as they develop grammaticality in the context of narratives. We found the children in both groups exhibited similar grammaticality levels in their narratives.

Muñoz, Gillam, Peña, and Gulley-Faehnle (2003) found that a global measure of grammaticality with preschool age Latino children from low SES backgrounds was a valid measure of development. The global measure of grammaticality that we obtained provided us with information to evaluate one aspect of language within the context of narratives. However, with the information we analyzed, we cannot draw conclusions about other areas of language such as semantics and pragmatics. We can however, use the narrative samples that we obtained to acquire some of this information, possibly in future studies. Additionally, we are merely showing that there are no differences. The global measure of grammaticality does not provide us with any sort of cutoff that would allow us to use the information to make a diagnosis of language impairment. We could however, evaluate the errors in children with language impairment in the future to determine if there is adequate information to develop goals as part of treatment; the current study only involved children with typically developing language.

The findings of our study provide support that neither a monolingual nor bilingual home environment will negatively impact the grammatical development of preschool children. We want to emphasize that the parents in the current study merely reported what languages they used at home. They were not instructed by anyone to provide or withhold monolingual or bilingual input. Based on the results of this study, we suggest it is reasonable for parents to expect their children's language development to not be affected by monolingual or bilingual language input in the natural home environment. A home in which parents use the language or languages they are comfortable speaking is an appropriate environment for children's grammaticality development. Educators and speech-language pathologists should not recommend parents using one language or specifying the language to use at home.

Future studies are warranted to evaluate children's grammaticality in both languages by requiring children to produce narratives in both languages. The current study only provided children with the opportunity to produce narratives in one or both languages if they chose to do so. Requiring children to produce a story in both languages, rather than simply providing the option can be affected by the value placed on one of the languages they speak (Pearson, 2007). Additionally, studies that look at grammaticality in more detail, rather than global judgments of grammaticality, can help determine if there are differences in complexity of utterances that are not captured in the current analysis. Longitudinal studies are needed to determine if similar performance between monolinguals and bilinguals continues in the area of grammaticality as children get older and use more complex language structures, including the possibility that increasing sentence complexity may happen at a cost to percent of grammatically correct utterances (as the use of complex syntax increases, the percent of grammatically correct utterances decreases). Similar measures of grammaticality should also be obtained for children with language impairment to determine if a global measure of grammaticality and more specifically errors in grammaticality can be used for the development of intervention goals.

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COPING STRATEGIES USED BY LATINO PARENTS OF CHILDREN WITH COMMUNICATION IMPAIRMENT

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ABSTRACT

Purpose: The purpose of this study was to determine: 1) what coping strategies Latino parents of children with communication impairments use, and 2) if there is a relationship between coping strategies and parents' perceived seriousness of their children's communication impairments.

Method: Sixty-seven Latino parents completed scaled surveys relating to the use of religious and spiritual practices, and reliance on friends and family support in coping with their communicatively impaired children.

Results: Descriptive statistics revealed that Latino parents were most likely to seek assistance from a significant other than other family members or friends and were most likely to seek assistance through their personal beliefs than through organized religion or healer to assist them with their children with communicative impairments. Spearman's rho correlation results revealed a medium negative relationship between the perceived seriousness of the child's communication impairment and family support and a small negative relationship between seriousness and friend support.

Conclusions: Latino parents may need assistance in coping with having a child with communication impairment in addition to navigating language barriers and unfamiliarity with healthcare systems.

KEY WORDS: Latinos, parents, communication impairment

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INTRODUCTION

Research on the immigrant experience in the United States with social and public health services points to the disparities in health treatment that exist between ethnic groups and white consumers whether these disparities are due to the lack of affordable health services, a lack of bilingual service providers, limited knowledge of existing resources, or language and other cultural barriers to the successful implementation of health strategies (Taylor-Ritzler, Balcaza, Suarez-Balcazar, & Garcia-Iriarte, 2008). Culture is a key factor in understanding and coping with health issues, including disability. Not only does it reflect the attitudes and beliefs members of a culture hold about health and illness, it also influences greatly the manner in which individuals approach the treatments and preventions of illness. Yet there is a lack of research focusing on ethnic communities most at risk when dealing with disability issues.

Of particular interest in this study are the attitudes of Latinos toward communication disorders and the coping strategies they use to meet their children's disability needs. Considered the largest minority group in the United States, Latinos, or Hispanics, make up 16% of the U.S. population (U.S. Census Bureau, 2010). While a large number of individuals of Mexican, Puerto Rican and Cuban descents live in the states with the highest Latino population such as California, Texas, Florida, New York, and Illinois (Ennis, Rios-Vargas, & Albert, 2011), other states have a different configuration of Latinos. One such state is Louisiana, where a large number of Latinos are individuals from Central America (51,722), second only to those from Mexico (78,643, U.S. Census Bureau, 2010). The fifth largest conclave of Hondurans in the U. S. is located in Jefferson Parish, Louisiana, which is part of the greater New Orleans metropolitan area (Motel & Patten, 2012).

Children between the ages of 3-7 with delayed or disordered speech and language are at risk for readiness for formal schooling since learning to read and follow instructions are undergirded by the ability to communicate effectively. Left untreated, children may never catch up to their peers, thus suffering lifelong consequences. The prevalence of childhood communication impairment ranges from 5.9% to 25.2% and thus is considered a high prevalence condition (Law, Boyle, Harris, Harkness & Nye, 1998; McLeod & Harrison, 2009). The percentage of Latino children who are being served by speech-language pathologists is much smaller due, in part, to language and cultural differences (Rosa-Lugo, Mihai, & Nutta, 2012).

Researchers have examined the perceptions and beliefs of Latino families with children with disabilities (Hanline & Daley, 1992; Maestas & Erickson, 1992; Rodriguez & Olswang, 2003), the awareness, use, and satisfaction with services for Latino parents of young children with disabilities (Bailey, et al., 1999; Harry, 1992), the role of religion and spirituality in coping with children with disabilities (Johnstone, Glass, & Oliver, 2007), and the importance of social support in dealing with children with disabilities (Correa, Bonilla, & Reyes-MacPherson, 2011). Yet, research on communication disorders in this target population remains scant. Thus, the purpose of this paper is to expand research on disabilities by examining specifically Latino parents' coping strategies when dealing with children with communication impairments.

Coping with Disability

Extensive research has documented the stresses that come with raising a child with a disability. In particular, parents of children with disabilities must deal with the emotional, social, and physical effects of the disability in addition to finding the best medical and educational assistance for their child. Studies have indicated that there are high levels of maternal depression (Blacher, Lopez, Shapiro, & Fusco, 1997; Shapiro & Tittle, 1990), health problems (Baker-Ericzen, Brookman-Frazee, & Stahmer, 2005), decreased family cohesion (Baker, et al., 2005), divorce (Hodapp & Krasner, 1995) and social withdrawal (Baker, et al., 2005) in families of children with disabilities. While studies on disabilities abound, they give limited attention to communication impairment specifically, and the various severities of the disorder. For example, a child with Down syndrome may experience respiratory, hearing, and intellectual problems along with a communication impairment, thus signaling a more severe disorder than a child with a developmental articulation delay.

The concept of coping is understood "as constantly changing cognitive and behavioral efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of a person" (Lazarus & Folkman, 1984, p. 141). Although coping can be solitary, that is in the hands of the individual, it can also be relational in that it involves other people. According to Maguire (2012), there are three levels of coping. The first level, or solitary coping, takes place when the individual attempts to sort out problems in the face of stress. Social coping is the second level and involves the support of others in our social network when dealing with stressful situations. The third level of coping is communal in nature. This last type of coping occurs when individuals who experience the same stressors pool their resources to deal with a difficult situation. According to Maguire, "the family must perceive the problem as 'our' problem as opposed to just 'my' or 'your' problem" (p. 65).

It has been found that utilizing positive coping strategies assist family well-being and reduce stress of parents who have children with disabilities (Coulthard & Fitzgerald, 1999; Johnstone, Glass & Oliver, 2007; Judge, 1998). Two ways parents respond to having a child with a disability and who they turn to for support can be divided into two broad categories: 1) spirituality and religion; and 2) social support from family and friends. Parents who are able to successfully cope with having a child with a communication impairment will be better able to focus their energies toward providing support and assistance to their child.

Spirituality/Religion

Religion and spirituality play an important role in health care because they influence beliefs and attitudes about illness. According to Samovar, Porter, McDaniel, and Roy (2013), "the supernatural/magico/religious health care belief system is based on the assumption that people live in a world inhabited by supernatural forces." (p. 344). Thus, being ill, or disabled, may be interpreted as an act of God and perceived to be a form of punishment. This spiritual approach to illness leads to an approach to treatment that aims to achieve a positive balance between the patient and the spiritual forces at hand. Hence, bringing a patient back to health may require the intervention of a priest or healer.

Religion plays a central role in many Latinos' lives. In fact, most Latinos believe in some form of Christianity, pray daily and have religious objects prominently displayed in their homes (Pew Hispanic Center, 2007). Catholicism is the most practiced religion followed by Protestantism (Perl, Greely, & Gray, 2006). Along with relying on a belief system guided by the Catholic faith, some Hispanic communities, such as Cubans, Puerto Ricans, and Brazilians also believe in a type of religion known as Santéria which allows a sick person to call on a folk healer to assist with a treatment (Samovar et al. 2013). Other Latinos rely on curanderos, or healers, to assist them with physical and other types of disabilities (Langdon, 2009). Sometimes, they will seek help for physical disabilities from medical doctors, but will go to curanderos, witch doctors or practice voodoo for psychological support.

According to the National Alliance for Caregiving and AARP (2004), 79 percent of Latinos use prayer as the most common form of coping with stress. In a study of Latino women caring for a spouse recovering from stroke, religiosity, socializing and hobbies were the three main coping strategies used (Arabit, 2008). Research suggests that there is a positive relationship between spirituality and health. In a study of parents of children with autism and Down syndrome, many said that they sought comfort through prayer, although most of them said that they would not seek help from their church if they had problems with their child (Coulthard & Fitzgerald, 1999). While, Katz, et al., found that they prefer physicians to make health-related decisions and relied on a positive outlook, faith, religion and family support to help them through an illness (2011). Hence, these studies support the relationship that exists between spiritual and religious practices and attitudes and beliefs toward health.

Social Support

Family support can take many forms when dealing with disability. In their family systems assessment models and intervention model for promoting positive family functioning, Dunst, Trivette, and Deal (1988) identify four categories of family support. They vary from immediate family, including parents, children, and other household members, to kinship network, including blood and marriage relatives, informal network of friends, neighbors, coworker, church members, to professional and organizations, including physicians, early interventionists, and teachers.

In a study comparing support networks of single Puerto Rican mothers of children with disabilities, Correa, Bonilla, and Reyes-MacPhearson (2011) found that members of the children's immediate and extended kinship system, including non-blood relatives (e.g., madrina), play a strong role in providing support to the young mothers. Magaña (1999) identified the role of familism, a cultural value including interdependence among nuclear and extended family members for support, loyalty, and solidarity, in providing care for children with mental retardation.

Severity

Parents of children with severe disabilities have reported that support from friends and family assist them in coping and reducing stress (Twoy, Connolly, & Novak, 2007; White & Hastings, 2004). With Latinos, reliance on friends and families especially those who speak English, is helpful with their special needs children (Bronheim, Soto, & Anthony, 2015). While disabilities such as severe intellectual disabilities, autism, and moderate-severe cerebral palsy were the focus of these studies, no studies have compared parents' perceptions of children who have mild communication disabilities with those who have more severe communication disabilities. Thus, it is important to examine parents' perceptions of children with varying severity levels of communication impairment.

While literature on the topic of disability in the Latino community is growing, there is still scant research on communication disorders and the role of spirituality, religion and social support for parents of children with communication impairments. Hence, the purpose of this study is twofold: 1) to determine what coping strategies Latino parents of children with communication impairments use to assist them with their children, and 2) to determine if there is a relationship between coping strategies and parents' perceived severity of their children's communication impairments.

METHODOLOGY

Participants

The study was approved by the Institutional Review Board at Xavier University of Louisiana. Participants were 67 Latino/Hispanic primary caretakers of individuals with communication impairment. They were solicited through preschools, schools, speech and hearing clinics, and health fairs with Latino populations in the greater New Orleans, Louisiana area. Bilingual college students were trained in the administration of the surveys. They asked individuals if they had a child with a communication impairment and if so, if they were willing to complete a survey. Surveys and consents were offered in either English or Spanish. Once consent forms were signed, participants completed the surveys. The college students clarified or read questions to participants, as needed.

Approximately 91% of the respondents were female (n = 51). Age of the respondents ranged from 20 to 45 with 47.7% (n = 32) between the age of 20-29. Most (71.6%, n = 48) of the respondents reported Central America (Nicaragua, Honduras, El Salvador, Guatemala) as their place of birth. Respondents also were born in Mexico, Dominican Republic, Cuba and South America. Additional demographic information is presented in *Table 1*.

Table 1
Demographic Characteristics of Respondents (n = 67)

Characteristic	Number (%)
Gender	
Male	16 (9)
Female	51 (91)
Birthplace	
Central America	48 (71.6)
Mexico	14 (20.8)
Other (non-U.S.)	5 (7.4)
Puerto Rico	0 (0)
Age	
20-29	32 (47.7)
30-39	28 (41.7)
40-45	7 (10.4)
Education	
< High School	11 (16.4)
Completed High School	29 (43.2)
College	19 (28.3)
Not Reported	7 (10.4)
Age of Child	
0-5	48 (71.6)
6-10	15 (22.3)
11-15	4 (5.9)
Years in the U.S.	
0-5	20 (29.8)
6-10	32 (47.7)
11-15	6 (8.9)

Instruments

In order to identify the various strategies Latino parents use to cope with their children's communication disorders, we relied on two scales identifying various levels of internal and external sources of support (Kirk & Gallagher, 1986).

Support from Religious Organizations and Personal Beliefs Scale (SROPB Scale; Fewell, 1986). This scale assesses the extent to which parents rely on spiritual services as a coping strategy. This scale comprises 12 items assessing support from organized religion (six items) and evaluating support from personal beliefs (six items). It has been used to assess parents' coping strategies with Down syndrome and autistic children (Coulthard & Fitzgerald, 1999). For the purpose of this study, the scale was modified to reflect the communication impairment. The scale included 12 items. Sample items are: "If I had problems with my child I would seek help from my church" and "I have been more active in my church since my child was diagnosed with a communication disorder." Participants responded to each item using a 5-point Likert type scale (1 = Strongly Disagree to 5 = Strongly Agree). The organized religion subtest of the scale in this study showed a Cronbach alpha coefficient of 0.93 and the personal beliefs subtest of the scale showed a Cronbach alpha coefficient of 0.86, thus demonstrating this scale has good internal consistency (Fewell, 1986). In addition to the SROPB Scale, an item was added to the section relating to organized religion and personal beliefs. The statement, "My curandero (spiritualist) was helpful to me when my child was diagnosed with a communication disorder" was added because of the reliance on healers by some Latinos (Langdon, 2009; Samovar, et al., 2013).

Multidimensional Scale of Perceived Social Support Assessment. In order to explore the degree to which Latino parents raising children with communication impairment rely on an available social support system, we relied on Zimet, Dahlem, Zimet and Farley (1988) Multidimensional Scale of Perceived Social Support Scale. This scale assesses three different levels of social support: family, friends, and significant other. Considering the cultural and social systems Latinos tend to rely on while living in the United States (Fussel, 2009), we selected this scale for our study. The scale includes 12 items (4 items per level of support) measured on a 7-point Likert type scale (1 = Very Strongly Disagree to 7 = Very Strongly Agree). Each item was modified to include "with my child". Sample items include: "There is a special person who is around when I am in need of help with my child" and "I can count on my friends when things go wrong with my child." Previous research obtained with college students yielded an alpha coefficient of 0.88 (Zimet, et al., 1988). In this study, the family subscale showed a Cronbach alpha coefficient of 0.88; the friends subscale showed a Cronbach alpha coefficient of 0.94; and the significant other subscale showed a Cronbach alpha coefficient of 0.87. Each survey was translated by a native speaker of Spanish then back-translated by a second native speaker of Spanish (Brislin, 1970).

RESULTS

Research question one sought to determine what coping strategies Latino parents of children with communication impairments use to assist them with their children. Descriptive statistics were used to explain the data obtained from the two scales.

Support from Religious Organizations and Personal Beliefs

The Support from Organizations and Personal Belief Scale ranged from 1 – 5 with 1 being "strongly disagree" and 5 being "strongly agree" and focused on two types of spiritual support: organized religion and personal beliefs. The mean of the organized religion subscale was 2.4 (SD = 1.3). Respondents generally did not rely on clergymen or their church to assist them with their children who have communication impairments. The mean of the personal belief subscale was 3.45 (SD = 1.0). Respondents were divided between disagreeing and somewhat agreeing with this relying on their spiritual beliefs to assist them with their children. The mean of the healer (curandero) item was 1.7 (SD = (1.25). Respondents generally did not rely on a healer to assist them with their children who have communication impairments. As seen in *Table 2*, respondents were more likely to seek comfort through their personal beliefs than through organized religion or healer to assist them with their children.

Table 2

Number and Percentage of Latino Parents who Rated the Use of Coping Strategies "Somewhat Agree" or "Strongly Agree" (n = 67)

Coping Strategies	%	number
Religious Organization	18	12
Personal Beliefs	31	20
Curandero/Spiritualist	8	5
Significant Other	62	40
Family	46	30
Friends	22	14

Social Support

The Multidimensional Scale of Perceived Social Support Scale ranged from 1 – 7 with 1 being "very strongly disagree" to 7 being "very strongly agree" and focused on three types of social support: family, friends, and significant other. The mean of the significant other support subscale was 5.7 (SD = 1.5). Respondents generally relied on a significant other to assist them with their children who have communication impairments. The mean of the family support subscale was 5.17 (SD = 1.8). Respondents generally relied on family to assist them with their children who have communication impairments. The mean of the friend support subscale was 4.26 (SD = 1.8). Respondents generally were neutral or only mildly agreed that friends assist them with their children who have communication impairments. As seen in *Table 2*, respondents were most likely to seek assistance from a significant other than family members or friends.

Perceived Seriousness of Communication Impairment

In order to answer research question 2, Spearman's rho correlations were used to explore the relationship between the seriousness of the communication impairment and the various support systems available to Latino parents when raising a child with a communication impairment. The results of the correlation coefficients are presented in *Table 3*. Results revealed a moderate negative relationship between family support and the seriousness of the communication impairment (r = -.304, p. < .05), and a weak negative relationship between the seriousness of the impairment and support from friends (r = -.249, p. < .05). Correlations between the seriousness of the communication impairment and support from a significant other, and reliance on religious and spiritual beliefs revealed no significant results.

Table 3
Spearman's rho Correlations among Coping Strategies and Seriousness of the Communication Impairment (n = 67)

Items	Religious Organizations	Spiritual Beliefs	Curandero/ Spiritualist	Significant Other	Family Member	Friend
Perceived Seriousness	-.088	-.103	-.088	-.065	-.304*	-.249*

*$p < .05$, two-tailed.

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ECHO: Journal of the National Black Association for Speech-Language and Hearing

HEALTHCARE DISPARITIES AFTER TRAUMATIC BRAIN INJURY (TBI): TOWARDS UNBIASED ASSESSMENT OF COMMUNICATION IMPAIRMENTS

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ABSTRACT

Epidemiological evidence reveals that individuals from culturally and linguistically diverse (CLD) backgrounds exhibit the highest prevalence and incidence of traumatic brain injury (TBI) in the US. After TBI, cognitive and communication impairments require speech-language pathologists (SLPs) to assess communication abilities in the presence of cognitive deficits. Given the complexity of the interaction between language and culture and how they effect the interpretation of test results, functional assessments offer expanded opportunities for achieving an unbiased evaluation. The purpose of this article is to provide evidence on healthcare disparities after TBI, to address critical patient-provider communication variables relative to CLD populations, to discuss communication impairments that are prevalent after TBI, and to present a broader range of options for functional assessments that will meet the communicative needs of the increasingly diverse clinical population with TBI.

KEY WORDS: traumatic brain injury, disparity, healthcare, assessment, culturally and linguistically diverse

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INTRODUCTION AND PURPOSE

Healthcare disparities include limited or no access to treatment, lack of equitable health resources, poor follow-up, and inadequate assessment for individuals from culturally and linguistically diverse (CLD) backgrounds, including African Americans, Latino Americans, Native Americans, and Asian/Pacific Islander Americans (National Institutes of Health (NIH), 2009; US Department of Health and Human Services, Healthy People 2010, 2007; Williams & Mohammed, 2009; World Health Organization (WHO), 2008). While race and ethnicity are key risk factors, healthcare disparities are also associated with socioeconomic status (SES), geographic location, acculturation, educational achievement, language differences, cultural attitudes and patient and provider views about health and healthcare. These same factors impact disparities in communication disorders. Diversity emphasizes the complexity of racial, ethnic, cultural and linguistic issues that differ from the mainstream population (i.e., Caucasian Americans). Minority and underrepresented are also terms used interchangeably with diversity and, in the US, African Americans, Latino Americans, Native Americans (i.e., indigenous populations), and Asian/Pacific Islander Americans are characterized as minority or underrepresented groups (U.S. Office of Management and Budget definition (OMB-15 Directive; US Census, 2002).

The constraints on access to healthcare that place diverse groups at risk for chronic medical conditions (e.g., diabetes, cardiovascular disease) also place them at risk for traumatic brain injury (TBI). Therefore, there is a persistence of lower health status and a lower quality of health among diverse groups as compared to the mainstream population (Agency for Healthcare Research and Quality, 2008; Healthy People 2010, 2005; Institute of Medicine, 2002; Kosoko-Lasaki, Cook & O'Brien, 2008; US Department of Health and Human Services, Office of Minority Health, 2007; Williams, 2007; Williams, Mohammed, Leavell, & Collins, 2010).

In response to the disproportionate burden of medical conditions among individuals from CLD backgrounds in the US, a national comprehensive plan, Healthy People 2010, was developed to provide strategies that ameliorate negative outcomes (US Department of Health and Human Services, 2005). National standards and mandates on Culturally and Linguistically Appropriate Services (CLAS) have also been proposed to reduce inequities in service delivery (US Office of Minority of Health Services, 2007; 2016). In line with the national standards and mandates for reducing healthcare disparities, the American Speech-Language-Hearing Association (ASHA) (2005) delineated roles and responsibilities for speech-language pathologists (SLPs). From these policies, standards, and mandates, there is consensus that inappropriate test administration is a significant contributing factor to disparities in communication disorders (NIH, 2009).

A decade ago, several investigators (Godfrey and Shum, 2000; McDonald, 2000; Togher, 2000; Ylvisaker and Feeney, 2000) theorized and offered evidence regarding how consideration of sociocultural variables may reduce assessment bias after TBI. Since that time, there has been limited research on the distinctive communicative and linguistic needs of individuals from CLD backgrounds following TBI. In light of the fact that, in the last 10 years, there have been increasingly higher TBI survival rates and an increasingly higher prevalence of TBI among diverse populations, there are even greater needs for culturally sensitive, unbiased assessment after TBI. For instance, there are few standardized assessments that account for the unique cultural and linguistic variables related to how language is used in society (sociolinguistics). The norm-referenced instruments that are available rarely include individuals from CLD backgrounds in their normative or sample populations, specificity of test items is often compromised, and they are oftentimes administered inappropriately by SLPs and others (Duff, Proctor, & Haley, 2002; Proctor & Zhang, 2008).

Given the limited literature on appropriate procedures for managing adults from CLD backgrounds after TBI, this article focuses on the evaluation of communication disorders in that clinical population and employs evidence on healthcare inequities as the background for discussing the need to reduce disparities in communication disorders. Four topical themes will be covered: (1) current research on healthcare disparities after TBI, (2) cultural and communication variables that influence patient-provider interaction; (3) communication impairments that are prevalent after TBI, and; (4) functional assessments that will enhance options and facilitate unbiased assessments for adults from CLD backgrounds with communication disorders after TBI.

Evidence of Healthcare Disparities after TBI

Results of population based epidemiologic studies on prevalence and incidence of TBI reveal that African Americans, Latino Americans, and Native Americans have the highest rates of TBI in the US (Burnett, Silver, Kolakowsky-Hayner, & Cifu, 2000; Cooper, Tabaddor, Hauser, Shuman, Feiner, & Factor, 1983; Egede, Dismuke, & Echols, 2011; Jager, Weiss, Cohen, & Pepe, 2000; Rosenthal, Dikjers, Felix-Harrison, Nabors, Witol, et al., 1996; Sorani, Lee, Kim, Meeker, & Manley, 2009). When compared to other racial and ethnic groups, African Americans have a higher incidence of TBI in their late teens to early adulthood, ages 15-24 years old. In fact, African American males are at highest risk for TBI followed by African American females. Notwithstanding, Latino Americans and Native Americans are also at very high risk for TBI.

Along that line, Asian/Pacific Islander Americans are not well represented in the TBI literature, and this leads to a lack of clarity regarding prevalence and incidence of TBI in this population (Perrin et al., 2014). This group consists of a large, diverse and growing segment of the US population, and it encounters many of the same risks as individuals from other CLD backgrounds and the population at large. The limited data on Asian/Pacific Islander Americans also reduces our ability to develop and address culturally and linguistically sensitive approaches for their assessment and rehabilitation.

Although the highest prevalence of TBI in the US is among individuals from CLD backgrounds, this fact has received less attention in brain injury research and in studies of clinical practice for individuals with TBI (Perrin et al., 2014). The current epidemiological evidence provides support for the importance of discussing healthcare disparities and the significance of administering unbiased assessments after TBI (Brown, McCauley, Levin, Cheng, & Flesher, 2004; Cavallo & Saucedo, 1995; Centers for Disease Control and Prevention, 2002; Langlois, Rutland-Brown, & Thomas, 2006a; Langlois, Rutland-Brown, & Thomas, 2006b; Rutland-Brown, Langlois, Thomas, & Xi, 2006; Rutland-Brown, Wallace, Faul, & Langlois, 2005).

Jager, Weiss, Cohen, and Pepe (2000) studied national data on TBI admissions to emergency departments (EDs) for the years 1992-1994 and found that African Americans had a 35% higher incidence of TBI than Caucasian Americans. The incidence was 582 per 100,000 for African Americans as compared to 429 per 100,000 for Causcasian Americans. Cooper et al. (1983) also reported that TBI occurred at a rate of 278 per 100,000 for African Americans, 262 per 100,000 for Latino Americans, and 209 per 100,000 for Caucasian Americans.

Using data obtained from the National Pediatric Trauma Registry, Haider, Efron, Haut, DiRusso, Sullivan, and Conwell (2007) compared outcomes of African Americans, Latino Americans, and Caucasian Americans who had a TBI (N= 41,122) and ranged in age from two to sixteen years old. At the time of discharge, African American children exhibited more deficits in speech, feeding and locomotion than the other groups. All children in the sample population had similar types of injuries, but African American children had the worse outcomes after TBI followed by Latino American children with Caucasian American children having the most improved outcomes. Bowman and associates (2007) studied the National Trauma Data Bank which indicated that African Americans and Latino Americans are more likely to be discharged to home environments while Caucasian Americans are more likely to be released to assisted living facilities or some type of rehabilitation center, suggesting different levels of care recommended for the racial/ethnic minorities.

de la Plata, Hewlitt, de Oliveira, Hudak, Harper, Shafi, and Diaz-Arrastia (2007) conducted a retrospective study on data from the National Trauma Data Bank. Records of 58,729 patients with head injuries were examined and results showed that ethnic minorities were 15% less likely to receive rehabilitation. Among Latino Americans, low proficiency in English was associated with poor functional outcomes and disproportionate rehabilitation services. Similarly, Burnett and colleagues reported a statistically significant reduction in rehabilitation outcomes for individual from CLD backgrounds as compared to Caucasian Americans. Most notable was the reduction in the amount and intensity of speech-language, physical and occupational therapy. Individuals from CLD backgrounds received fewer therapy services than Caucasian Americans. Additional analysis of the same data, drawn from 22 major US medical centers, disclosed that individuals from CLD backgrounds received 242.4 fewer minutes of speech-language therapy and the intensity of the therapy was decreased by 1.8 minutes per day with both variables being statistically significant. As compared to Caucasian Americans, Bazarian, Pope, McClung, Cheng, and Flesher (2003) also established statistically significant deficiencies in the quality of service provided to racially and ethnically diverse patients. Overall, current findings suggest that racial and ethnic minorities receive less attention from rehabilitation specialists during therapy when compared to their Caucasian American counterparts.

Other studies on TBI reveal that minorities are less likely to receive medical care, have poorer functional outcomes, exhibit lower levels of social and community integration, experience longer wait times to be seen by a physician and experience greater caregiver burden (Arango-Lasprilla, Rosenthal, Deluca, et al. 2007; Arango-Lasprilla, Rosenthal, Deluca, Cifu, Hanks, & Komaroff, 2007; Arango-Lasprilla, Ketchum, Williams, Kreutzer, de la Plata, & O'Neill, 2008; Shafi, de la Plata, Ramon, Bransky, Frankel, et al, 2007; de la Plata, Hewlitt, de Oliveira, Hudak, Harper, Shafi, & Diaz, 2007; Gary & Arango-Lasprilla, 2009). For example, medical facilities report that there are larger numbers of indigenous populations (Native Americans, Native Alaskans and Native Hawaiians) who enter emergency departments when compared to Caucasian Americans. Yet, indigenous populations are as less likely to be offered follow-up after discharge, less likely to inquire about and use post discharge care, and less likely to have opportunities for a family conference (Lomay & Hinkebein. 2006;

Nelson, Rhoades, Noonan, & Manson, 2007; Proctor). Among individuals from CLD backgrounds, Pappadis, Sander, Struchen, Leung, and Smith (2011) found that different misconceptions about TBI existed among African Americans, Spanish-speaking Latino Americans and English-speaking Latino Americans. However, higher rates of misperceptions occurred among Spanish-speaking individuals than among the English-speaking groups. These data suggest that language difference, at least within the US, plays a role in perceptions of TBI.

After TBI, data revealed that individuals from CLD backgrounds had were at a higher risk for post-traumatic stress disorder (PTSD) (Pole, Best, Metzler, & Marmar, 2005; Roberts, Gilman, Breslau, Breslau, & Koenen, 2011). With multiple health problems, greater burdens are often placed on CLD caregivers who spend more time on direct caregiving as compared to White caregivers. In addition, individual from CLD backgrounds with TBI have fewer social support systems, fewer community resources, and have lower levels of returning to work. The reported risk factors are further complicated by inappropriate or no referrals for continued care, regardless of similar functional levels as Caucasian Americans at the time of discharge (Gary, Arango-Lasprilla, Ketchum, Kreutzer, Copolillo et al., 2009; Niemeier, Burnett, & Whitaker, 2004; Niemeier & Arango-Lasprilla, 2007; Staudenmayer, Diaz-Arrastia, de Oliveira, Gentilello, & Shafi, 2007).

When compared to Caucasian Americans, outpatient data from different studies indicate that diverse populations with TBI receive fewer rehabilitation services, less speech-language, occupational and physical therapy, and caregivers are less likely to use professional services for emotional support. Inpatient data or treatment evidence demonstrate that individuals from CLD backgrounds receive fewer clinical services. Such treatment evidence substantiates the need for research on therapy services while in acute and sub-acute care systems, inclusive of speech-language therapy (Jaffe & Jimenez, 2015; Meagher, Beadles, Doorey, & Anthony, 2015; Niemeier & Arango-Lasprilla, 2007; Staudenmayer, Diaz-Arrastia, de Oliveira, Gentilello, & Shafi, 2007).

Cultural awareness, linguistic sensitivity, patient-provider relationships and provider knowledge about culture and language are extremely important in informing the SLP's assessment and treatment plans. Commensurate with the increasing numbers of individuals with TBI who are from diverse groups and the consistency with which evidence supports the fact that individuals from CLD backgrounds are at a higher risk for TBI, there are also increasing needs for unbiased services from SLPs.

Diversity and Patient-Provider Communication Variables

The provider's ability to shape patient-centered communication is influenced by his/her own attitudes, cultural competence, knowledge of different linguistic systems and ability to use interpreters' services. Consequently, the provider must conceptualize and engage in effective communication by developing strategies that successfully inform patients and their families and employ strategies that lead to appropriate patient intervention and follow-up.

The SLP must be aware of the multiple variables that effect healthcare outcomes for CLD populations since there are variables that either do not exist among Caucasian Americans or have different effects on individuals from CLD backgrounds. *Table 1* illustrates how individuals from CLD backgrounds differ from Caucasian Americans and presents important patient and provider variables that influence communication, impact assessment, and affect patient outcomes. Patient demographic variables such as age, gender, race, ethnicity, education, and SES, shown in the left column, are factors in adjustment to acquired disabilities. The center column in *Table 1* displays patient diversity variables that influence the acceptance of services and adherence to treatment recommendations. The right column in *Table 1* highlights important provider variables that affect the quality of service to diverse populations. The provider's cultural competence, awareness of patients' health communication, understanding of patients' health literacy, and appreciation of differences in worldviews are crucial in enhancing the quality of service provided to diverse populations.

Provider variables critical to unbiased assessments and subsequent patient compliance include the ability to provide basic information on characteristics of TBI, knowledge of cognitive-communication impairment, facilitation of social skills, and understanding of patients' expectations for intervention. Moreover, providers must be knowledgeable about the patient's level of health literacy, i.e., the ability to receive process and act appropriately on health information, thereby achieving adherence to treatment recommendations. Equally important are patients' social perceptions of life or worldview that includes attitudes towards western medicine and the traditional (folk) health practices from their home countries.

Communication Impairments after TBI

While healthcare providers in general must be culturally competent and sensitive to the effects of culture on communication and language, the scope of practice for SLPs is specifically geared to diagnosing cognitive-communication impairments after TBI. Communication disabilities may occur in speaking, listening, reading, writing and social communication (pragmatics) that result from neurological insult. Cognitive-communication impairments involve the presence of underlying cognitive deficits such as executive functions, memory and attention that negatively impact communication abilities (ASHA, 2005). Since the communicative and linguistic needs of individuals from CLD backgrounds differ in many ways from the mainstream population, it is necessary for SLPs to evaluate patients' linguistic and communication abilities in a holistic, contextual manner versus categorizing preselected items such as those found in standardized tests (Roberts, 2008; Wyatt, 2002).

Training for SLPs is often singularly focused on administering norm referenced psycholinguistically oriented tests of speech,

Table 1.* Demographic and Diversity Variables Affecting Healthcare Outcomes in Communication Disorders

Demographic Variables (Patient)	***Diversity Variables (Patient)***	***Issues in Healthcare Services (Provider)***
Age; Gender	Communication	Cultural competence of health providers; Patient-centered focus; Patient-centered health communication; Gender interactions.
Language/Dialect spoken	Treatment adherence; Testing variables	Language knowledge and linguistic abilities of providers; Facilitate access to community services. Effect of dialect, e.g., African American English, on language test results.
Race/Ethnicity	Worldview	Sensitivity towards culture and communication patterns; Awareness and knowledge about different perspectives towards treatment in acute, sub-acute care and rehabilitation
Religion	Dietary preferences Treatment preference	Knowledge and awareness of nutritional practices; Beliefs/attitudes towards alternative vs. Western medicine; Knowledge of medical practices considered sinful
Educational Level	Health literacy Reading ability	Facilitate ability to read and understand legal documents, e.g., informed consent
Occupation & Income	SES, social customs, values	Access to care; Insurance; Financial resources; Environment
National origin	Cultural preferences	Trust towards western medicine; Utilization of Western vs. Length of time in country traditional (folk) beliefs and practices; Impact of role changes among family members

** This table was developed by the first author for use in this article.*

language and communication. Since such tests rarely include diverse groups in the normative sample, there is a higher probability of results leading to inappropriate rehabilitation. In other words, available standardized tests set up a comparison of individuals from CLD backgrounds with Caucasian Americans, both of whom have different types of communicative, linguistic and cultural experiences (Roberts, 2008).

Many SLPs administer tests that are based on a psycholinguistic orientation. This means that patient data are collected on structural components of grammar and results provide the patient's knowledge of English and word meanings (semantics). However, grammatical analyses or syntactic complexity could be misleading since languages are organized differently. For example, as compared to English, Spanish requires that an adjective be placed after the noun and tonal languages e.g., Mandarin, require changes in pitch, not word structure, to indicate tense. Therefore, appropriate test selection is crucial when the patient speaks a first language or dialect (variation) that is organized differently from English. It is important for the SLP to recognize the presence of linguistic differences, how culture influences social communication, and that there is a higher prevalence of pragmatic disorders after TBI. Consequently, it is compelling that the SLP selects assessment tools that consider the range of variables in social communication. This means that the SLP does not focus solely on linguistic structure. Rather, the assessment emphasis should be on pragmatics including conversation, narratives and other types of social communication (Sarno, Buonaguro, Levita, 1986)

Well-developed functional assessments that provide data on how individuals interact in their specific communities despite the presence of physical, emotional, cognitive or other types of limitations are beneficial in a variety of ways (Frattali, 1998). Functional assessments can determine an individual's capacity to communicate and interact within his/her own familial and cultural milieu. Since it is essential to determine therapeutic progress against a tool that considers the person's home and community environment and cultural demands, culturally sensitive functional assessment tools have a high probability of leading to outcomes that are consistent with cultural, linguistic and communicative expectations of an individual's family and community. When the patient meets the expectations of his/her home and community and not the expectations of the mainstream group, there is an increased likelihood of improved community integration. For example, depressed communication abilities in different social environments will reduce the quality of life for those with TBI (Struchen, Clark, Sander, Mills, Evans, & Kurtz, 2008). Simply, the utilization of culturally sensitive functional assessments can result in rehabilitation practices that are grounded in the communicative and linguistic contexts of the patient's community.

When SLPs and other practitioners do not attend to cultural and sociolinguistic variables during assessment, results will lack the ecological validity that is necessary for enhancing culturally appropriate social communication. Evidence reveals that individuals with TBI often have the most difficulty negotiating the interactions and multiple tasks of daily living, suggesting the need for inclusion of functional assessments (Hinchcliff, Murdoch, & Theodoros, 2001; Murdoch & Whelan. 2007; Prigatano, Roueche, & Fordyce, 1984; Ylvisaker, 1998). Individuals with TBI often produce tangential, confabulatory, topically irrelevant, and pragmatically inappropriate conversation and other subtle nonaphasic language characteristics. (Hinchcliff et al., 2001; Murdoch & Whelan. 2007; Prigatano et al., 1984; Ylvisaker, 1998).

In many cases, TBI induces diffuse axonal injury (DAI), which involves scattered destruction of white matter tracts and difficulties in neural transmission. Communication and cognitive deficits resulting from DAI tend to be dispersed and less evenly distributed when compared to the well circumscribed damage of a stroke. Results from DAI are more closely associated with cognitive dysfunction and require diagnostic data on cognitive processes as well as communication and language. After TBI, the types of cognitive and communication deficits observed are not homogeneous, although premorbid grammatical abilities may remain intact. However, deficits in pragmatics, memory, executive dysfunction (planning, organization decision making, and judgment), attention, and inappropriate social interactions will also be observed. Following TBI, other communication difficulties include turn-taking in conversation, topic maintenance, understanding and using conversational subtleties such as sarcasm, managing fast paced conversations or appropriately interpreting facial expressions and other body language during conversations.

Cognitive processes influence verbal skills. For example, executive functions direct the speaker in the choice of words, organization of sentences, and in deciding on the more appropriate means for interpersonal use of language. The SLP's conventional use of repetition and imitation as therapeutic strategies are far less effective in treating individuals with TBI than for other neurologically based communication disorders (Goldberg, 2009). TBI involves higher executive functions, memory, processing, and attention. Communication disabilities after TBI are reflected in the complexities of daily living and, therefore, functional assessments offer advantages by permitting evaluation in appropriate cultural contexts - situations in which patients interact with family, friends and their larger communities.

Functional Assessment Instruments

Clinically useful functional measures that permit assessment of communication and language of adults from CLD backgrounds with TBI have been developed in other healthcare professions, but SLPs do not consistently administer these instruments. Speech-language pathologists' long-standing preferences for norm referenced tools, lack of understanding of cultural and linguistic differences, and lack of awareness of the existence of functional assessments which include diverse populations are among the factors that contribute to limited administration of functional assessments that can address a patient's diverse culture and language.

To reduce bias and achieve the objective of providing options for culturally and linguistically sensitive functional assessments that are clinically useful for SLPs, an in-depth literature search was completed on multiple databases (Psychinfo, Pubmed, Psychbite, Scopus, ERIC, and Google Scholar). The database search identified all journal articles, books, and websites for years 1970-2016. The search terms included: communication disorders and TBI, tests for TBI, functional assessment and TBI, cognitive-communication impairment after TBI, cognitive-communication disorders and unbiased assessment, communication disabilities, unbiased assessment and TBI, and culture, cognition and communication.

The purpose of the literature search was to determine culturally and linguistically sensitive functional assessments of communication across the healthcare disciplines. Measures mainly based on aphasic populations were excluded from further review. The criteria used to examine the identified studies included: (1) Instruments used were appropriate for the patient and provider variables displayed in *Table 1*; (2) Instruments included the domains of communication, language, culture and cognition; (3) A diverse sample of individuals in the study population; (4) Used in research with diverse populations; (5) Research results provide evidence about diverse populations; (6) Accessible in languages other than English; (7) Direct patient observation required; (8) Accounts for feedback from the patient, the family, friends and significant others; and (9) Readily accessible on line and at no cost or minimal cost.

Based on these criteria, two independent reviewers read and examined the identified materials to determine appropriateness for the article. The instruments selected were determined to be clinically useful for individuals from CLD backgrounds, could augment other evaluative language data, and may also serve as the primary assessment tool, depending on the case. In addition, the selected tools allow for systematic assessment of functional changes in communication and linguistic ability in CLD populations whose underlying etiology is TBI. *Table 2* displays the selected functional assessment instruments that have been shown to be sensitive to the life experiences and communication practices of individuals from CLD backgrounds. Each of the instruments in *Table 2* offer the provider the opportunity to determine flexibility for assessing communication or social communication (C), social skills (SS), cognition (Cog) and family involvement (FI), variables crucial to community integration.

Table 2. Functional Assessments for CLD Populations with Communication Disorders after Traumatic Brain Injury (TBI)

(Areas of Assessment: C = Communication/Social communication; Cog= Cognition; SS=Social Skills; FI= Family Involvement)

Reference	Title	Description/Purpose/Content/	Procedure and Scoring	Areas of Assessment			
The Center for Outcome Measurement in Brain Injury (COMBI) http://www.birf.info/pdf/tools/famform.pdf (Due to space limitations, any item that has a reference cited on the COMBI web page does not have a complete citation in the reference list for this article).	Functional Independence Measure (FIM) for Brain Injury and Functional Assessment Measure (FAM) for Brain Injury	FIM and FAM - developed to assess inpatient performance in behaviors often associated with neurologically based problems; measures changes in cognition, communication, psychosocial adjustment and other areas assessed by rehabilitation team members, e.g., self care, sphincter control, mobility, locomotion. FAM - an extension of FIM and provides additional information on FIM categories and includes swallowing, car transfers, community access, reading, writing, speech intelligibility, and emotional status, adjustment to limitations, employability, orientation, attention, and safety judgment.	FIM & FAM: scored based on direct provider observation or via telephone Administration time: 20-30 minutes FIM+FAM can be administered in 35 minutes. *Scoring* FIM: 18 questions for rating performance. FAM: 12 questions, Decision-tree flow chart available	C	Cog	SS	FI
The Center for Outcome Measurement in Brain Injury (COMBI) http://www.birf.info/home/bi-tools/qlinks_comm.html	Community Integration Questionnaire (CIQ)	Developed for use after TBI; assesses the ability to function in the community. Level of independence/assistance for individual and performance of specific activities are measured; subscores available for home, social integration, and productivity (educational/vocational).	Patient completes questionnaire; may facilitate completion of questionnaire by orally presenting information to patient who is unable to read. *Scoring:* Total of 15 questions. Subscores for Home Integration, Social Integration, and Productivity. Total score derived by summing subscores.	C	-	SS	FI
The Center for Outcome Measurement in Brain Injury (COMBI) http://www.tbims.org/combi/drs	Disability Rating Scale (DRS)	Quantifies functional changes from coma to community. Most useful for those with moderate to severe TBI. Measures include: eye-opening; best communication ability; best motor response; cognitive ability for feeding, toileting, and grooming; level of functioning; employability.	Provider interviews patient and/or family in person or via phone; may also be used by patient for self-report. *Scoring:* Disability is scored on scale of 0 (no disability) to 29 (extreme vegetative state).	C	Cog	-	-

The Center for Outcome Measurement in Brain Injury (COMBI) http://tbims.org/combi/fnq/index.html	The Family Needs Questionnaire (FNQ)	Assesses impact of an individual's TBI on family member. Has six subscales: Health Information, Emotional Support, Instrumental Support, Professional Support, Community Support Network, and Involvement with Care. Scores for stages of acute care, soon after discharge, long-term care are determined. May use to incorporate family goals into treatment and assess therapy progress at home and in the community.	Completed by a family member. Each scale, independently rates 1) importance of needs and 2) extent to which needs have been met. *Scoring:* Has 40 items; Scores obtained for each scale. Scores range from 1-4 from "not important" to "very important	C	-	SS	FI
The Center for Outcome Measurement in Brain Injury (COMBI) http://www.tbims.org/combi/chart/index.html	Craig Handicap Assessment and Reporting Technique (CHART)	Assesses Physical Independence, Mobility and Occupation- ability to occupy time in the manner customary to that person's sex, age, and culture; measures Social Integration: ability to participate in and maintain customary social relationships; and 5) Economic Self-Sufficiency. Measures handicap (the absence of social participation) after/during rehabilitation resulting from impairment and disability.	Uses sentence completion and multiple choice format for 32 items. Administered via in person or telephone interview. Takes ~15 minutes to administer. (May use as a self-report measure, although not recommended). *Scoring:* Each subscale ranges from 0-100 points where a higher score indicates less handicap and higher social and community participation. Scored by assigning points to patient responses.	C	-	SS	-
Douglas, O'Flaherty, & Snow (2000) Douglas, Bracy, & Snow (2007)	LaTrobe Communication Questionnaire (LCQ)	Purports to measure social discourse. Assesses patient's perceived communication ability and that of significant others. Content is based on normal communication vs. typical cognitive-communication deficits in TBI. Assesses domains for informational quantity, quality, relation, and manner. NOTE: This measure is important because of the singular focus on communication. Since it was developed on Australian English speakers, SLPs should complete an item analysis to determine the appropriateness of the instrument for other English variations. A review of each item must also be completed for bilingual and multilingual speakers for whom English is one of their languages.	Questionnaire can be completed by individual with TBI, family member, and clinician *Scoring:* Has a total of 30 items with four possible levels of response for each of the items: never or rarely, Sometimes, Often, and Usually or always.	C	-	-	-
Becker, Shaw, & Reib (1995) http://www.fmhi.usf.edu/institute/pubs/pdf/mhlp/qol.pdf	Wisconsin Quality of Life Index (W-QLI) Quality of Life (QoL) Assessment	Assesses Life satisfaction, Occupational activities, Psychological well being, Physical health, Social relations, Economics, Activities of daily living (ADL), Symptoms, and Goal attainment. Measures perception of QoL; determines patient's values and goals for progress. Considers QoL as subjective and varies by population. Culturally adapted for 12 countries based on population norms, and translated into multiple languages.	A self-report and self-administered instrument. Separate forms for client, provider (clinician), and caregiver to obtain multiple perspectives. *Scoring*: Multiple choice format, yes-no rating scales. Raw scores computed by using the coding manual. Provides a taxonomy of treatment goals.	C	-	SS	-

Powell, Beckers, & Greenwood (1998)	Brain injury Community Rehabilitation Outcome scale (BICRO)	Functional scale with eight categories: Personal care, Mobility, Self-organization, Psychological, Socializing, Parent/sibling contact, Partner/child contact, Productive employment. Developed for patients with acquired brain injury.	Completed by patient or caregiver. Administration time- about 30 minutes. *Scoring:* Has 76 items; Each item is rated on a 0-5 scale with higher scores reflecting disability/handicap.	C	-	SS	FI
International Quality of Life Assessment (IQOLA) http://www.iqola.org/	International Quality of Life Assessment (IQOLA)	Evaluates perceptions of quality of life; Can be used in English speaking countries. Available for Spanish Chinese, Japanese, and Vietnamese speakers in the US. Translations available for approximately 40 different countries. Measures eight domains of health: physical functioning, role limitations due to physical health, bodily pain, general health perceptions, vitality, social functioning, role limitations due to emotional problems, and mental health.	Generic health measure—does not specify age, disease, or treatment group. *Scoring*: Yields scale scores for each of the eight health domains, and two summary measures of physical and mental health: the Physical Component Summary (PCS) and Mental Component Summary (MCS).	C	-	SS	-
Linscott Knight & Godfrey (1996)	Profile of Functional Impairment in Communication (PFIC)	Assesses severity of impairment and rate of occurrence of specific communication impairments. Framework uses a pragmatic model of conversation with 19 summary scales: logical content (LC), general participation (GP), quantity (QN), quality (QL), internal relation (IR), external relation (ER), clarity of expression (CE), social style (SS), subject matter (SM), and aesthetics (AE).	Observe patients and rate conversational interactions. Scoring: Contains 84 items on communication and uses a six point rating scale: normal, very mildly impaired, mildly impaired, moderately impaired, severely impaired, to very severely impaired.	C	-	SS	-

Utilization of the selected instruments can improve the evaluation process of individuals from CLD backgrounds with communication disorders after TBI and serve as a foundation for establishing intervention programs that are more closely aligned with the target populations' cultural and linguistic practices and needs. In turn, there is a higher probability of reducing bias in the assessment process. With periodic re-administration and interdisciplinary consultation, these instruments can also be employed to monitor progress. The name of the instrument, its location online or in print, the purpose and a brief description are presented. Although Table 2 does not provide an exhaustive list of functional assessments, the selected instruments presented have good responsiveness validity for the target population. According to Szczepurathe (2005), "both provider and patient bring their specific, different experiences of language and culture to the health care setting and these must be transcended to achieve equal access and quality health car" (p 146).

SUMMARY

Research evidence from epidemiological research and rehabilitation studies reveal that there are healthcare disparities in outcomes for individuals from CLD backgrounds relative to Caucasian Americans. Both provider knowledge about health disparities and knowledge about indicators of disparities establish a foundation for reducing inequities in service delivery. Background information that will increase provider knowledge about individuals from CLD backgrounds was discussed and used to support the utilization and administration of functional assessment instruments to enhance the evaluation of communication and related deficits and needs of the target population. Undoubtedly, there will be improved positive outcomes when practitioners are considerate of the culturally and linguistically needs of diverse populations, i.e., reducing bias in the assessment.

Functional assessments have important clinical utility in determining communication abilities in the presence of cognitive deficits and emphasize assessment in contextualized environments. As such, results lead to culturally valid assessments with strong responsiveness and validity and improve the re-entry processes to home, school and community.

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PUBLIC OPINIONS OF STUTTERING IN HAITI

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ABSTRACT

People who stutter often experience negative social and economic consequences. In order to help reduce the stigma associated with stuttering, we must first examine current attitudes of members of the general public toward this fluency disorder. While numerous investigations have previously delineated public attitudes toward stuttering among several populations and cultures around the world, to date, no studies have been published that looked at the attitudes toward stuttering of people in any of the numerous Caribbean nations. The purpose of this study was to examine the opinions of adults in Haiti toward stuttering and persons who stutter. Haitian Creole language versions of the *Public Opinion Survey of Human Attributes-Stuttering (POSHA-S)* were distributed via convenience sampling to adults residing in Haiti. The *POSHA-S* responses provided by the Haitian participants were compared to those contained in the *POSHA-S* international database. The findings revealed that overall *POSHA-S* scores were slightly higher in the Haitian sample suggesting more positive attitudes toward persons who stutter compared to other cultures around the world from the *POSHA-S* database.

KEY WORDS: Fluency disorders, Stuttering, Attitudes, International perspectives, Caribbean

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INTRODUCTION

Stuttering not only affects a person's ability to verbally express themselves, it can also affect an individual's social interactions, limit their ability to reach their potential in educational and vocational arenas, and negatively impact one's quality of life (Boyle, 2015; Craig, Blumgart & Tran, 2009; Hurst & Cooper, 1983; Walker, Mayo, & St. Louis, 2016). Persons who stutter (PWS) may develop negative thoughts about themselves as a result of their stuttering. Likewise, research has shown that people who do not stutter hold negative or stigmatizing attitudes toward stuttering (Przepiórka, Błachnio, St. Louis, & Wozniak, 2013; St. Louis, 2012; Özdemir, St. Louis, & Topbaş, 2011). Beliefs (either negative or positive) about PWS are significantly associated with reactions toward them (Arnold & Li, 2016). The reported adverse attitudes toward stuttering and PWS demonstrate a need for public awareness and education to reduce the stigma associated with this fluency disorder. St. Louis (2011a) stated that "if the social environment of those who stutter could, through a more educated public, face positive and even neutral public reactions, the impact of their stuttering would become less debilitating." (p. 256). One purpose for studying attitudes therefore is to identify beliefs held by different populations in order to work at changing them to be more 'stuttering-friendly'.

Stuttering is rightly regarded as a global disorder. Not surprisingly, studies examining various aspects of speech disorders including stuttering have shown variability in the knowledge, beliefs and perceptions across cultures. Bebout and Arthur (1992) noted differences in the attitudes of North American born and non-North American born college students toward speech disorders. The authors found that participants who were born outside of North America were more likely to indicate that a person with a speech disorder is "emotionally disturbed" (Bebout & Arthur 1992). Other studies examining the attitudes of specific cultural groups outside of North America toward stuttering have revealed similarities and differences in perceptions when compared to samples across the world. For example, in a study describing the attitudes of Polish adults toward stuttering, researchers found that attitudes of stuttering in the Polish society were generally similar to other samples around the world with a few differences (Przepiórka et. al., 2013). Compared to other samples, the Polish participants were more likely to (a) accept genetic inheritance as a cause of stuttering, (b) indicate that they would not feel comfortable and relaxed when talking to a person who stutters, and (c) state that they would tell the person with a stutter to slow down or relax (Przepiórka et. al., 2013). In a separate study examining Turkish individuals who did not stutter, researchers found differences in the knowledge of stuttering, causes of stuttering and self-reactions to persons with a stutter (Özdemir et. al., 2011). Considering the fact that the United States has a growing multicultural population, it is important to examine how different cultures view stuttering. Speech-language pathologists will often serve clients from a background different from their own. The attitude of clients, their families and communities toward the causes, effects, and treatment of speech disorders play a critical role in the treatment process. Clinicians' knowledge of the perceptions of stuttering in different cultures will better prepare them to serve clients. Moreover, armed with that knowledge, (a) clinicians can structure stuttering therapy within the context of a client's culture and (b) increase the probability that treatment will be maximally effective and efficient (Robinson, 2012).

The Public Opinion of Survey of Human Attributes-Stuttering (POSHA-S)

While stuttering perceptions have been reported worldwide, it is difficult to compare the results due to lack of uniformity in the survey methods used. St. Louis and his colleagues developed the *Public Opinion Survey of Human Attributes-Stuttering (POSHA-S)* to address this issue. The *POSHA-S* was designed with three goals in mind: (a) provide a better instrument for measuring public attitudes toward stuttering, (b) provide a "standard" tool that would allow meaningful comparisons of samples around the world, and (c) determine the strategies that would be more or less effective in reducing the stigma associated with stuttering (St. Louis 2011a). Since its development, the *POSHA-S* has been translated into several languages and administered in many countries. In 2011, St. Louis summarized 12 years of research associated with the development and use of the *POSHA-S*. This summary report found the *POSHA-S* to be a user-friendly, valid and reliable measure of stuttering attitudes that can be effectively translated to other languages (St. Louis, 2011a).

As described by St. Louis (2011a; 2012) the instrument begins with a demographic section wherein participants provide background information and rate their physical health, mental health, speaking ability and learning ability. Participants are also asked to rate various life priorities such as being safe and secure, helping the less fortunate, earning money, and working. Next, it contains a general section with four questionnaire items on stuttering plus four other "anchor" attributes, i.e., intelligent, left-handed, mentally ill, and obese. That is, participants give their opinions of stuttering in comparison to being intelligent, left-handed, obese and mentally ill. This section is included to differentiate samples according to the context into which stuttering attitudes occur (Przepiórka et. al., 2013). Its purpose is to provide potential predictors of stuttering attitudes based on attitudes toward other positive, neutral, and negative human attributes. The *POSHA-S* concludes with a detailed section devoted to stuttering. In this last section of the *POSHA-S*, participants rate hypothetical stuttering situations and people who stutter on items that are divided according to beliefs about stuttering, self reactions to a person who stutters and knowledge about stuttering (St. Louis, 2011a). Rating scales in the demographic and general sections require a 1–5 rating. Items in the detailed stuttering section require a "yes," "no," or "not sure" choice; these choices are converted to a 1–3 scales as follows: "no" = 1, "not sure" = 2, and "yes" = 3. Moreover, all scale ratings are converted to a scale from -100 to +100 where 0 = neutral. The signs (either + or ¬-) of the converted scores for some detailed stuttering items, e.g., "People who stutter are shy and fearful" are reversed so that, uniformly, lower scores reflect less sensitive or accurate attitudes and higher scores reflect more sensitive or accurate attitudes.

With regard to scoring, St. Louis (2011a) explained that the *POSHA-S* is scored by averaging clusters of items that reflect various components. For example, the "Traits/Personality" component is the mean of three items, i.e., people who stutter (a) are to blame for their stuttering, (b) are nervous and excitable, and (c) are shy and fearful. The "Social Distance/Sympathy" component reflects means for (a) feeling comfortable, pity, or impatience while talking with a person who stutters; (b) being worried or concerned if one's doctor, neighbor, sibling, or oneself stuttered; and (c) evaluating one's overall impression of stuttering and wanting to stutter. Components are combined into three subscores, one for obesity and mental illness and two for stuttering (i.e., beliefs about people who stutter and self reactions to people who stutter). The mean of the two stuttering subscores is the Overall Stuttering Score. Lastly, users of the *POSHA-S* around the world have been requested to contribute their data to a growing database archive that permits comparisons of individual samples with all that have been reported at any given date (St. Louis, 2011b). For each dimension scored on the *POSHA-S*, results are typically compared with the lowest, highest, and median sample mean from all those in the archive.

Research using the *POSHA-S* has shown interesting differences between countries and cultures. For example, Ip, St. Louis, Myers, & An Xue (2012) found that Chinese respondents held less accurate views regarding accommodating/helping individuals who stutter compared to the samples from the *POSHA-S* database. Looking at Arab teachers' knowledge, beliefs and reactions toward stuttering, Abdalla and St. Louis (2012) found that while participants' reactions to stuttering were generally sensible, their responses demonstrated lack of knowledge of stuttering etiology. Comparison of stuttering attitudes via probability sampling and convenience sampling of participants in Turkey revealed that perceptions might differ within a population based on the method of sampling (Özdemir et al. 2011).

To date, there has not been any published research examining the public attitudes toward stuttering in Caribbean nations that are not territories of the United States such as Puerto Rico and the U.S. Virgin Islands. This lack of representative data suggests a need to broaden the database to public samples in Caribbean countries. According to the Migration Policy Institute, individuals from the Caribbean make up nearly nine percent of the total immigrant population of the United States (McCabe, 2011). Haiti is one of the countries that contribute to this Caribbean immigrant population. Thus, the purpose of the present study was to: (a) describe the opinions of adults living in Haiti toward stuttering and (b) compare the opinions of Haitians to the median *POSHA-S* database reflecting samples around the world.

Methods

The *POSHA-S* was translated into Haitian Creole, one of the official languages of Haiti. Haitian Creole is based largely on 18th century French, with influences from Portuguese, Spanish, Taino, and West African languages such as Wolof, Fon, and Ewe (Bonenfant, 2011; Omniglot, 2016). Haitians are the largest creole-speaking community in the world (Nadeau & Barlow, 2008). The first author, a native Haitian Creole speaker, first translated the survey. Two additional bilingual Haitian Creole and English speakers reviewed the translation and compared it to the English version of the *POSHA-S* for content. Lastly, a Haitian Creole and French-only speaker reviewed the translated questionnaire to determine any syntactic or semantic ambiguities. Reported problems with translation were noted and changed as appropriate.

Paper surveys of the *POSHA-S* were distributed to a convenience sample of 36 individuals living in the Port-au-Prince, Haiti metropolitan area of Haiti. Adult participants from different areas of Haiti were recruited during community functions and via family/friend contacts. Participants were informed of the purpose of the study and were given a consent form to review prior to filling out the survey. Some of the individuals who agreed to take part in the survey completed the questionnaire immediately; others filled them out within a two-week span. There was no financial compensation for participating in this study.

Results

Respondent Demographics

Of the 36 surveys that were hand distributed 31 were completed which represents an 86% return rate. Eighty-seven percent of the respondents from this study listed Haitian Creole as their native language and 90% listed French as a language they can easily speak and understand. *Table 1* summarizes the demographic variables from the participants in this study as well as the mean of the samples in the *POSHA-S* database. As shown in Table 1, 58% of the respondents were male and 42% were females. The mean age of participants was 36.4 years old and they had an average of 15.3 years of schooling. In the population observed, 74% were married, 73% were parents, 6% were students and 87% were working. Additionally, 6% of the participants reported being a person who stutters. Only 42% identified themselves as being intelligent. The latter finding is rather interesting considering that 74% of the participants completed at least two years of college. In our sample, only 6% did not know anyone who stuttered compared to 25% from the *POSHA-S* database. When looking at the self-ratings for physical health, and ability to speak and learn, the mean for Haitian participants were 6-12 units on the -100 to +100 scale above the median values from the *POSHA-S* database. For example, the Haitians rated 69 for ability to speak versus 62 for database.

Table 1. Demographic characteristics of Haiti sample and *POSHA-S* database median of 138 samples from first and/or only *POSHA-S* administrations for 10,856 participants (circa December, 2015).

Demographic Variable	Haiti Sample	Database Median
Number in Sample	31	62
Age: Mean (yr)	36.4	37.3
Total Schooling: Mean (yr)	15.3	14.6
Sex: Males/Females (% of total)	58%/42%	34%/66%
Married (% of total)	74%	57%
Parent (% of total)	73%	50%
Student (% of total)	6%	11%
Working (% of total)	87%	67%
Not working (% of total)	6%	3%
Retired (% of total)	0%	<1%
Haitian Creole as Native Language (% of total)	87%	-
Can also easily speak and understand French (% of total)	90%	-
Self Identification (% responding)		
Stuttering	6%	0%
Intelligent	42%	28%
Left handed	13%	8%
Obese	10%	6%
No Persons Known (% responding)		
Stuttering	6%	30%
Intelligent	6%	2%
Left handed	6%	6%
Obese	16%	10%
Mentally Ill	19%	24%
Self Ratings for Health and Abilities (Mean: -100 to +100)		
Physical Health	50	44
Ability to Learn	70	58
Ability to Speak	69	62
Self Ratings for Life Priorities (Mean: -100 to +100)		
Be Safe/Secure	93	82
Be Free	78	64
Spend Time Alone	62	35
Attend Social Events	32	15
Imagine New Things	64	33
Help Less Fortunate	71	49
Have Exciting but Potentially Dangerous Experiences	-3	-19
Practice My Religion	66	21
Earn Money	76	56
Do Job/Duty	88	74
Get Things Done	84	73
Solve Big Problems	90	69

Stuttering Attitudes

The purposes of this study were to measure the opinions of Haitians toward stuttering and to compare those opinions to samples from other cultures. Figure 1 shows a radial graph that provides a visual display of the how the Haitian sample rated in comparison to the median, lowest (least positive or accurate), and highest (most positive or accurate) sample means from the POSHA-S database. Scores that are more sensitive or more accurate are closer to the outside of the graph while negative or less accurate scores are closer to the center of the graph (St. Louis, 2011a).

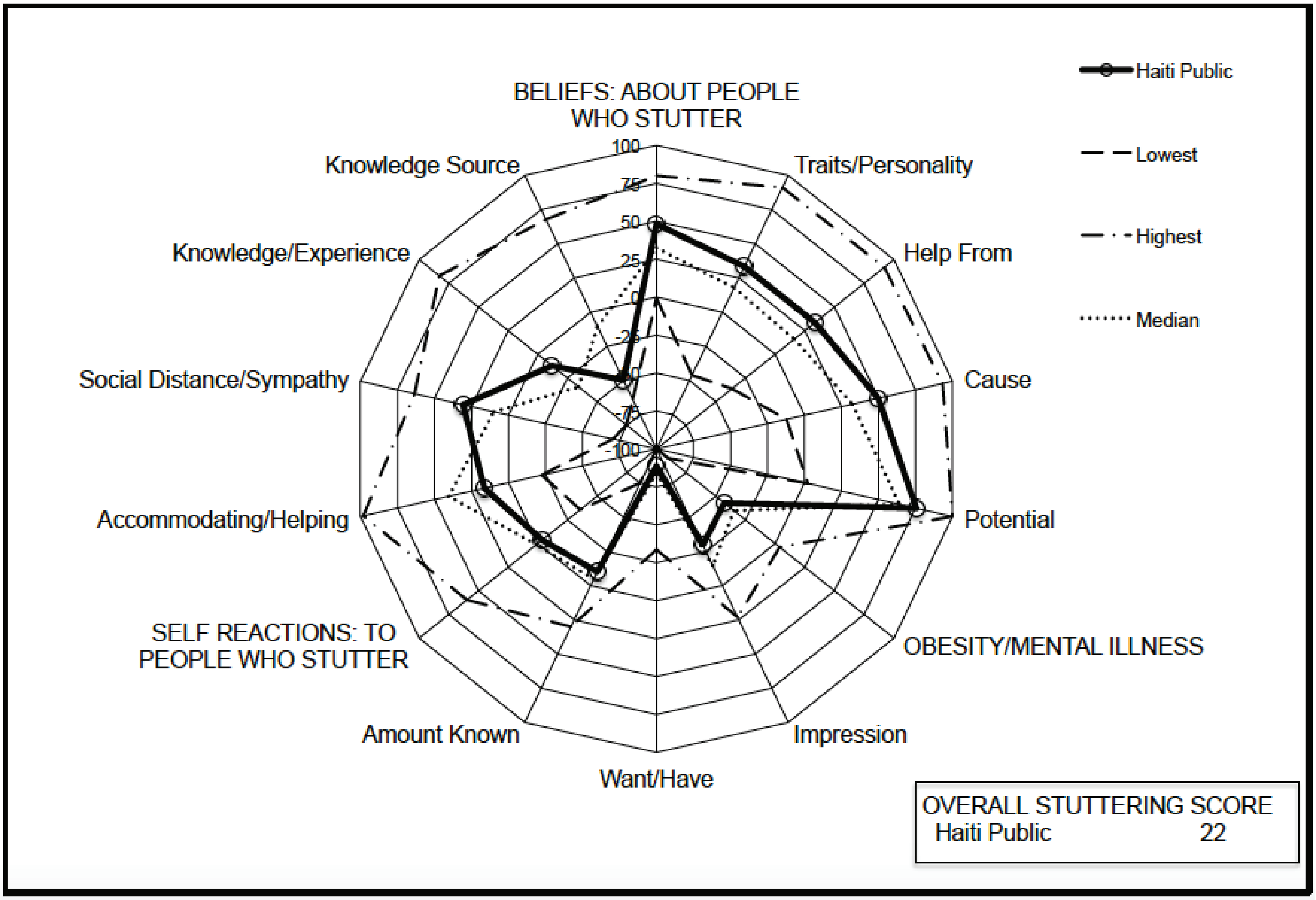

Figure 1: Summary *POSHA-S* graph for Haitian sample (dark solid line) compared to the lowest, highest, and median samples from the *POSHA-S* database.

Table 2 summarizes ratings from the Haitian sample and those from the POSHA-S database. At the time of this comparison, the POSHA-S international database currently had nearly 11,000 respondents (St. Louis, personal communication, December, 2015). Items in Table 2 denoted by an asterisk indicate that ratings are inverted in order that, uniformly, higher converted scores reflect more positive attitudes while lower scores reflect less positive opinions or attitudes. The opinions of the Haiti sample were generally slightly higher than the median POSHA-S samples collected around the world. The Haiti Overall Stuttering Score was 22 compared to the median POSHA-S database score of 17. Haitian participants' averages were higher in their beliefs about the traits and personality of persons who stutter, who should help, causes of stuttering, potential of a person who stutters, social distance/sympathy and knowledge or experience with persons who stutter. Haitian averages were lower than the median database in the accommodations they would provide when interacting with a person who stutters and the source of their knowledge about stuttering.

When analyzing the categories further, Haitians were less likely to believe a person who stutters is "shy" (-6) but more likely to state that a person who stutters is "nervous or excitable" (-20). On average, Haitian participants were more likely to believe that stuttering is caused by "genetic inheritance" (67). The Haitian respondents were very slightly lower than the average in their belief that speech-language pathologists and other people who stutter could help persons who stutter. As a whole, they also believed (incorrectly) that a medical doctor could help persons who stutter (-6), that persons who stutter can lead normal lives (100), make friends (97), and have any job they wanted (65).

Table 2. Overall POSHA-S ratings of Haiti sample and median ratings from POSHA-S database of 138 samples from first and/or only POSHA-S administrations for over 10,856 participants (circa December 2015).

POSHA-S Variable	**Haiti Sample**	**Database Median**
OVERALL STUTTERING SCORE	**22**	**17**
Beliefs About Persons Who Stutters	**48**	**32**
Traits/Personality	**33**	**18**
Have themselves to blame*	93	80
Nervous or excitable*	-20	0
Shy*	27	-23
Stuttering Should be Helped by…	**34**	**16**
Speech and language therapist	90	93
Other people who stutter	17	-2
Medical doctor*	-6	-30
Stuttering is Caused by…	**50**	**32**
Genetic inheritance	67	17
Learning or habits*	55	20
A frightening event*	6	-3
An act of God*	50	64
A Virus or disease*	37	39
Ghosts, demons or spirits*	84	87
Potential	**76**	**64**
Can make friends	97	93
Can lead normal Lives	100	89
Can have any job they want	65	45
Should have jobs requiring good judgment	41	40
Self Reactions to People Who Stutter	**-4**	**-4**
Accommodating/Helping	**16**	**40**
Try to act like the person was talking normally	61	81
Person like me	-23	-26
Fill in the person's words*	-6	26
Tell the person to "slow down" or "relax"*	-37	1
Make joke about stuttering*	84	88
Should try to hide their stuttering*	20	72
Social Distance/Sympathy	**31**	**10**
Feel comfortable or relaxed	97	31
Feel pity*	32	16
Feel impatient (not want to wait while the person stutters) *	74	61
Concern about my doctor*	43	40
Concern about neighbor*	66	73
Concern about brother or sister*	28	-14
Concern about me*	-3	-42
Impression of person who stutters	4	1
Want to have stuttering	-64	-69
Knowledge/Experience	**-12**	**-34**
Amount known about stuttering	-25	-31
Persons who stutter known	-73	-86
Personal experience (me, my family, friends)	62	13
Knowledge Source	**-50**	**-10**
Television, radio, films	-52	14
Magazines, newspapers, books	-37	-10
Internet	-73	-21
School	-20	-1
Doctors, nurses, other specialists	-67	-33
Obesity/Mental Illness Subscore	**-43**	**-35**
Overall Impression	**-30**	**-15**
Obese	-25	-22
Mentally Ill	-34	-8
Want to be	**-89**	**-84**
Obese	-83	-83
Mentally Ill	-95	-83
Amount Known About	**-10**	**-5**
Obese	-5	4
Mentally Ill	-15	-18

With regards to self reactions to stuttering, Haitian respondents offered less useful suggestions about how to help a person who stutters. For example, the average score for "fill in person's words" was -6 and "tell the person to slow down or relax" was -37 or less than the database average of 26 and 1 respectively. When asked about the amount known about persons who stutter, the Haitian participants scored -25, which indicated that this sample did not believe they knew much about stuttering. Within the Haitian sample, impressions of stuttering (4) were more positive than the impression of obesity (-22) and mental illness (-8).

Discussion

In this first investigation of public opinions toward stuttering in a non-U.S. territory Caribbean nation, adults in Haiti were found to exhibit overall POSHA-S scores that were slightly higher than the averages in the POSHA-S database archive containing responses from previous convenience samples around the world. These data suggest more positive attitudes toward persons who stutter compared to other cultures. In terms of subscores, however, the Haitians' beliefs were generally more positive than average while their self reactions were slightly lower than average. Additionally, although the results from this sample of the Haitian population revealed they held slightly more positive attitudes than the average, a closer look at the results still underscores the need for stuttering education to increase knowledge and self reactions to stuttering in this population.

Similar to the findings of other cultures using other methods (Gabel, Brackenbury, & Irani, 2010), our Haitian participants reported their greatest learning about stuttering in school, even though that was limited. However, unlike other cultures included in the POSHA-S database, Haitian adults were less likely to learn about stuttering via television/radio/films or the Internet. The latter may be due to the fact that only 12% of the Haitian population has access to the Internet making it the lowest among Caribbean nations with such access (Internet World Stats, 2014). Even if Internet access was available to the Haitian public, it remains unknown if there would be sufficient information about stuttering for them to review or if their general lack of interest in stuttering would preclude them from accessing information about the disorder. Further, up to date, accurate information on stuttering may not be available to the Haitian public. Finally, as reported elsewhere (Gabel et al. 2010), even if information is up to date, we question to what extent acquiring education or information on the disorder would change how a person feels about stuttering. Additionally, efforts to increase Haitian's knowledge about stuttering (via print, television, or Internet) must be delivered in the major languages of the population—Haitian Creole and French. This is also true for educational awareness efforts directed toward Haitians or Haitian Americans who now reside in other countries such as the United States and who may speak and understand Haitian Creole, French, and English.

Items related to sources of help for people who stutter were notable. High ratings for the belief that speech-language pathologists should help people who stutter are promising and suggest that Haitians are optimistic about SLPs as agents of assistance for PWS. Moreover, as observed in the Przepiórka et al. (2013) study of Polish adults, the fact that our Haitian respondents were more positive than average about persons who stutter helping others who stutter speaks well for the potential of self-help groups in Haiti.

Limitations and Future Research

As Haiti is a predominantly bilingual nation, with the possibility of multiple dialects of their two dominant languages, having both French and Haitian Creole versions of the survey could have been beneficial, as participants could have chosen the language with which they felt most comfortable. Although the present study consisted of a small sample of the population, St. Louis (2012) concluded that sample size does not greatly affect ratings on the POSHA-S.

According to the United States Agency for International Development (USAID, n.d), Haitians who are 25 years and older received on average only 4.9 years of education and only 29 percent attended secondary school. As noted elsewhere in the present paper, the average years of education for the participants in this study was 15 years with the lowest being six years and the highest having 18 years of schooling. In addition to educational background considerations, future research with a more representative sample of Haitian adults (e.g., school age children, young vs, middle age adult vs. the elderly; rural vs. urban residents; Haitian nationals vs. Haitians residing in other countries; Haitians with Internet access vs. those without), is needed to more accurately measure attitudes toward stuttering and other communication disorders.

Future research could also focus on the impact of providing information about stuttering in order to increase stuttering knowledge in the general Haitian population. For example, a collaborative working relationship between the Haitian government ministry of health and Caribbean speech-language-hearing associations, practitioners working in the Caribbean, the American Speech-Language-Hearing Association's SIG 4 (Fluency and Fluency Disorders), ASHA SIG 18 (Global Issues) as well as members of the National Black Association for Speech-Language and Hearing (NBASLH) who have an interest in international fluency/fluency disorders issues could be a beginning point to update the general Haitian population about stuttering etiologies, diagnoses and treatment approaches and measure the outcomes of these public education efforts. Finally, we encourage researchers to begin to examine attitudes toward stuttering and persons who stutter in other Caribbean nations.

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