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Culturally diverse attitudes and beliefs of students majoring in speech-language pathology

ABSTRACT

Purpose: Academic education in speech-language pathology should prepare students to provide professional services that mirror current knowledge, skills, and scope of practice in a pluralistic society. This study seeks to examine the impact of speech-language pathology (SLP) students prior multicultural experiences and previous formal education on attitudes and beliefs toward language diversity. **Methods:** A survey to investigate SLP students attitudes toward language diversity was applied. After the research study and instructions to complete the consent form questionnaire was presented by a research assistant, an announcement was given by a graduate student who speaks English as a second language with an accent. The participants then completed a questionnaire containing questions related to attitudes about the presentation of the announcement in particular and toward language diversity in general. **Results:** Responses suggested a relationship between self-reported cultural bias and ability to concentrate on speech with an accent, and the extent of interaction with individuals from a cultural and linguistic diverse (CLD) background. Additional outcomes revealed that cultural bias may be predicted by factors related to amount of CLD exposure. **Conclusion:** Results of this study indicated critical areas that need to be considered when developing curricula in speech-language pathology programs. The results will be useful in determining procedures applicable in larger investigations, and encourage future research on attitudes and beliefs toward aspects of cultural diversity.

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INTRODUCTION

When working with multicultural populations, speech-language pathologists (SLPs) should provide services that are culturally appropriate. Increasing culturally competent research and education in the speech-language pathology (SLP) field are important steps to prepare professionals for serving consumers within an ethical environment, infused by shared trust and respect[1]. The United States Census Bureau[2] provides clear evidence that diversity is steadily growing. There are more U.S. residents speaking more languages and dialects of the English language than ever before, and an increasing number of adults learning English as a second language (ESL)[3]. It stands to reason that the ideal SLP education philosophy should consider multicultural issues.

In order to meet the communication needs of a growing multicultural population in increasingly globalized communities, SLPs are challenged to provide culturally competent services. This may not be a simple task, with approximately 90% of ASHA affiliated SLPs identifying with a Caucasian background, as estimated by the demographic profile of certificate holders from the American Speech-Language-Hearing Association (ASHA)[4]. These professionals may lack the understanding of other cultures and may be uncertain about designing assessments for individuals from a diverse background. They must receive adequate education, with multicultural awareness, in order to build knowledge of a variety of culturally appropriate techniques[5,6]. Hence, culturally competent SLPs should be aware of their own values and biases and be sensible to the values and needs of individuals with diverse backgrounds[7]. SLPs must develop a thoughtful and sensitive attitude about cultural background because there are no established solutions for dealing with every situation involving a diverse caseload[8].

According to ASHA's system of accreditation for college and university graduate programs, academic education in communication disorders should be specifically designed to prepare students for entry into professional practice and provide curriculum that reflects current knowledge, skills, technology, scope of practice, and the diversity of society[9]. However, faculty are often unsure how to develop and implement multicultural competence instruction[10]. Moreover, rather than leading students to become aware of their own stereotypes and beliefs, typical multicultural training and literature tend to focus on the differences of the clients such as diversity of origins and cultural backgrounds[8]. Therefore, students may be trained to acknowledge differences, but they may lack the necessary personal insight to change their own behaviors to correspond with the treatment needs of clients from diverse cultures. Incongruities between the commitment to multicultural training and the execution of producing culturally competent SLPs should be addressed[11].

It has been suggested that accessibility to cultural and linguistic diversity (CLD) may impact attitudes and beliefs of pre-professional clinicians toward diversity, particularly in light of a previous similar investigation involving students majoring in rehabilitation. The aforementioned study's outcomes unveiled concerns associated with general needs of increasing education and awareness toward cultural diversity in higher education[12].

Additionally, Kritikos conducted an investigation involving SLPs, concluding that lack of education regarding language diversity resulted in low efficacy in providing services to CLD individuals[13]. Furthermore, Preis revealed that studies involving SLP students suggested that CLD coursework may impact their attitudes and behavior surrounding diversity[14].

A pluralistic education should encourage future professionals to adjust to the client's worldview[15]. As such, examination of diversity self-perceptions is fundamental in multicultural education, ultimately having an impact on the development of clinical skills[15,16]. Thus, in addition to implementation of preferred models of cultural competence such as infusion, in which multicultural concepts and issues are treated as integral components throughout the entire training program[11], self-assessment of attitudes and beliefs toward diversity should be a starting point in multicultural education[17,18]. Furthermore, increased exposure to multicultural coursework may result in higher levels of multicultural competency.

This study seeks to examine the relationship between aspects that represent multicultural experiences and attitudes toward language diversity in SLP students, specifically examining attitudes and beliefs of SLP students toward the accents of nonnative speakers of Standard American English (SAE). This strategy for collecting data may also generate reflections and considerations regarding multicultural awareness in respondents.

Communication with an accent

Language, more than any other aspect of human communication, defines origins[19]. An accent refers to a phonetic trait from a person's original language that is carried over a second language, and a dialect refers to a language variation associated with a particular region, social class, or ethnicity[20]. Both concepts are applicable to all languages and all speakers[21,22].

Research in language acquisition demonstrates that most people retain their original accents when acquiring a second language after childhood[23,24]. It is natural that the native language's phonological system has an impact on ESL[24]. Historically, the U.S. has a wide range of influx of people from several linguistic and cultural backgrounds[25]. It is reasonable to expect that many of these individuals' use of English will be characterized by an accent. As such, accents should be treated as a fundamental part of cultural diversity.

Moreover, accent is a subjective concept. An individual does not have to be from another country to have an accent. Individuals from different regions of the same country can sound very dissimilar. Interestingly, people are frequently convinced that they are the only ones without an accent[26]. Nonetheless, all individuals speak with an accent and/or a dialect, depending on the person's origin and current location[20]. Speech sound production, its transmission, and perceptual features of listeners vary according to several elements, such as socio-economic status, education, geographic origin and cultural background[27,28]. Further, phonetic characteristics encompass both the speech produced and its perception by the listeners making communication a pluralistic product[22].

Bias

Despite general self and collective unawareness, people tend to act and react based on preconceived notions and attitudes[18]. The inability to consciously recognize personal bias may characterize an "implicit bias" which can shape interactions with others[29]. The dilemma surrounding implicit bias stems from the apparent seeming inevitability of stereotyping which plays a helpful role in creating associations for quick retrieval as part of our everyday cognitive functions, but has a negative effect when these inevitable associations do not reflect our true values, appreciations or goals[29].

Clinicians should avoid developing stereotypes and keep the individual at the forefront of any clinical encounter. This includes developing the competence to accept and appreciate others' cultural viewpoint[17,29]. Efforts to increase cultural awareness among future SLPs should prioritize self-examination, as an attempt to identify biases from their own culture and how this can have an impact in working with clients. Therefore, clinicians should conduct an examination of their personal attitudes and beliefs regarding diversity[17,29].

American Speech-Language-Hearing Association (*ASHA*) *position on accent*

ASHA's Code of Ethics states that SLPs and audiologists must deliver services equally to accented and non-accented clients. ASHA affiliates are urged to encourage an understanding of linguistic differences among consumers and the general population. Additionally, according to ASHA, SLPs and audiologists are responsible to educate clients, parents, and other professionals about CLD acceptance[21]. That same nondiscriminatory behavior is expected in recruiting students for higher education programs and hiring SLPs and audiologists[19,20]. Students and professionals in communication sciences and disorders who speak with an accent or a dialect can effectively provide speech, language, and audiological services to persons with communication disorders, provided that they have the expected level of knowledge about normal and disordered communication[20,21].

Furthermore, nonnative speakers who want to modify their speech production in order to accommodate speech-related tasks and needs, may **choose to receive** accent reduction services. Accent modification assistance is included under the scope of practice in SLP, under elective services targeting communication performance enhancement[30].

Multicultural education in communication disorders

Attitudes about racial issues have an impact on multicultural development in clinicians[16]. Therefore, multicultural competence should be added to the ability to develop attitudes, beliefs, knowledge, and skills in working with individuals from diverse backgrounds. An increase in exposure to CLD should lead to higher levels of multicultural proficiency.

Communication disorders students should be aware about the impact of culture on communication. Moreover, they should acquire multicultural competence in order to work with clients from diverse cultures. Although multicultural content typically has been included in curricula using infusion and embedding approaches[9], courses on multicultural issues may tend to address broad principles of language and social structure regarding cultural group variations[11]. Nevertheless, it is essential to address personal issues such as bias, prejudice and discrimination as well. Increasing awareness regarding these topics could have a positive impact on perception, and ultimately on treatment of future clients[15].

Rationale

A need to reduce cultural bias in speech-language clinical management has been described in the literature[17,18]. A study conducted prior to this investigation using a population of pre-professionals in rehabilitation revealed that a greater exposure to individuals with CLD backgrounds may increase multicultural awareness in university students, which can in turn impact quality of professional services delivered in the future[12].

While the literature hints that increased CLD experiences tend to reduce cultural bias, there is a need to validate this concept in order to advance evidence based practices in the field. Furthermore, understanding the specific role of accented speech in cultural background should lead future clinicians to provide culturally relevant services. Outcomes from this introductory study shall enlighten critical aspects of attitudes and beliefs of pre-clinicians towards CLD, such as self-reported cultural bias. Results ought to prompt reflections for further investigation, as well as considerations in developing curricula for SLP programs.

METHODS

Participants

The participants in this investigation were 20 undergraduate university students from a large university located in the U.S. Midwest, with a current enrollment of approximately 20,000 students. The participants were majoring in speech-language pathology; 17 female and 3 male, ranging in age from 18 to 35 years, all of whom were native English speakers, identifying themselves as primarily from a Caucasian background. Following appropriate approval by the Institutional Review Board (Southern Illinois University Carbondale Human Subjects Committee, Protocol Number 15091), the researcher contacted and explained this investigation to instructors. After the instructors' endorsement, their students were invited to participate. The legitimate population associated with the inferential process is an abstract population similar to those included in the sample.

Data collection

Questionnaire

The questionnaire implemented in this study was based on an instrument designed for a previous study applied to university students including demographic data in addition to questions related to attitudes about the announcement in particular and toward language diversity in general[12]. Items included on a pilot version of the questionnaire were originated from past

research[13,14], and revised several times based on feedback from University faculty.

The instrument included 50 questions regarding feelings concerning diversity, level of regular interaction with diverse populations, amount of information about diversity, and extent of CLD education. Participants were asked to indicate how true each statement was in their opinion by circling a number using a Likert-type scale. Association with level of agreement or disagreement with the statements posed were conducted using numbers from one to five. Additionally, participants were asked to estimate weekly interaction time with people who are from diverse backgrounds, as well as weekly time spent acquiring information about diversity. Furthermore, questions involved the extent of knowledge about aspects of diversity acquired both at university and non-university levels (see Appendix A). Demographic information included age and gender, directly indicated on scan sheets.

Procedure

The research study and instructions for completing the consent form and questionnaire were presented by a research assistant. After obtaining a signed consent form to join the study from each participant, an oral announcement of 200 words, describing a research related event on campus of interest of the participants, was given by a graduate student who speaks English as a second language (ESL) with a nonnative accent. Immediately after listening to the announcement, participants were asked to record responses in scan sheets. The responses were then electronically captured by optical scanning equipment.

Design

Correlations between specific concepts were applied to the data in order to inspect key aspects of the study. Multiple regressions were also used in this investigation, as a tentative approach to extend examination of the data. An *a-priori* power analysis indicated that with alpha coefficient and power set at .05 and.80, the present study needed 20-40 participants to detect a small effect.

Variables

In this study, items from the questionnaire were used in bidirectional correlations as well as a dependent and independent variables (i.e., criterion and predictors), with emphasis in identifying factors that may suggest an association with self-reported cultural bias. Correlations of self-reported CLD bias and all other variables were tested. Furthermore, statements such as "I usually have difficulty paying attention to what ESL speakers are saying" and "I would rather have a native language speaker giving the announcement, were applied as predictors of item number 12, which stated "I have cultural biases." Additional instances involved regularity of interaction and information about individuals from diverse characteristics such as age, gender, language, nationality, physical abilities, mental abilities, race, ethnicity, religion, and sexual orientation as predictors of self-reported cultural bias (see Appendix).

Data analysis

Statistical analyses were computed using SPSS software version 20.0 (SPSS Inc., Chicago. IL). Frequency distributions were also applied to examine the data. Because a change in the level of significance will affect the risk for both Type I and Type II error, the traditional alpha level of .05 was selected for the current study.

Variables in this study were analyzed using correlation statistical techniques. Prior to testing the hypotheses of the present study, the assumptions of correlation and multiple regression (i.e., normality, homoscedasticity, linearity, and independence of observations) were assessed. Results of the skewness and kurtosis analyses revealed that the data were normally distributed. Next, the assumption of homoscedasticity was tested using a visual analysis of bivariate scatter plots of residuals for all predictor and dependent variables. The visual analysis revealed that the variances of the error terms were normally distributed and constant, thus indicating the assumption of homoscedasticity was met. The assumption of linearity was tested by using a visual analysis of scatter plots of the variables of interest, demonstrating a linear relationship. Lastly, it was inferred that the assumption of independence of observations was met because each participant completed their own questionnaire individually.

RESULTS

Multicultural exposure

Frequency counts signaled limited exposure of participants to people of various cultures: 80% of the participants reported having minimal contact (i.e., less than one hour per week or no contact at all) with ESL speakers, approximately 50% of the participants reported having minimal contact with people from diverse race and ethnicity, and 60% of the participants reported having minimal contact with people of diverse nationalities. Furthermore, 75% of the participants reported having minimal access to information about ESL speakers; approximately 60% of the participants reported having minimal weekly access to information about people of diverse nationality, race, and ethnicity. Possible limited CLD proficiency was suggested by participants' indication (i.e., agree/strongly agree) of making a special effort to interpret what the speaker was saying (85%), and hardly thinking about multicultural issues (30%). Only 15% of the participants acknowledged awareness of their own cultural bias (see Tables 1, 2, Figures 1, 2 and 3).

Regarding prior academic information, 55% of the participants reported no previous university level coursework on second language acquisition or laws covering services provided to bilingual clients. Additionally, approximately 30% of the respondents reported no university coursework regarding differential assessment of bilingual vs. monolingual individuals or assessment tools for bilingual individuals, and 60% had accomplished no coursework on how to use a language interpreter (see Tables 1, 2, Figures 4, 5).

Table 1. Attitudes and beliefs toward CLD in SLP students: summary of responses

Statement	%SD	%D	%N	%A	%SA
I understood everything that was said by the speaker.	5	50	20	25	0
I was unable to concentrate on the announcement due to the speaker's accent.	5	40	20	35	0
I had to make a special effort to interpret what the speaker was saying.	0	10	5	55	30
I usually have difficulty paying attention to what ESL speakers are saying.	10	30	25	20	15
I would rather have a native language speaker giving the announcement.	5	25	45	15	10
I am used to being around people of various cultures.	10	25	20	35	10
I feel comfortable around people from different racial and ethnic groups.	0	0	20	40	40
I can learn something new from people of different ethnic groups.	0	0	0	30	14
Learning about cultural diversity has not much of an effect on me.	45	40	5	0	0
I don't have any problems with people of other cultures.	0	0	10	55	35
I frequently think about multicultural issues.	10	20	35	25	10
I have cultural biases.	15	55	15	15	0
%Interaction in Minutes/Week: Categories	**0**	**>60**	**60-420**	**421-840**	**<840**
Age	15	0	40	25	25
Gender	20	0	45	5	30
Language	75	5	10	10	0
Nationality	50	10	35	5	0
Physical abilities	50	20	15	10	5
Mental abilities	40	15	25	20	0
Race	30	15	30	20	5
Ethnicity	45	15	25	15	0
Religion	50	0	15	15	20
Sexual orientation	45	15	25	10	5
Low socioeconomic status	60	10	20	5	5
% Information in Minutes/Week: Categories	**0**	**>60**	**60-420**	**421-840**	**<840**
Age	35	20	25	5	5
Gender	30	20	30	10	10
Language	60	15	15	10	0
Nationality	60	25	10	5	0
Physical abilities	60	15	15	10	0
Mental abilities	55	5	10	5	5
Race	40	20	35	25	0
Ethnicity	60	10	30	0	0
Religion	60	15	20	5	0
Sexual orientation	70	20	0	20	0
Low socioeconomic status	80	5	15	0	0
High socioeconomic status	75	0	20	0	5
% University Coursework-Clock Hours: Topics	**0**	**1-100**	**101-200**	**201-300**	**<300**
Second language acquisition.	55	25	20	0	0
Communication patterns in cultures where a language other than English is spoken	20	60	20	0	0
Differential assessment of bilingual vs. monolingual individuals	35	50	15	0	0
Assessment tools for bilingual individuals	30	60	25	10	0
Language disorders vs. language differences	75	65	15	5	0
Laws involved in the assessment and treatment of bilingual clients	55	40	5	0	0
How to utilize a language interpreter	60	40	0	0	0
% Non-University Coursework-Clock Hours: Topics	**0**	**1-100**	**101-200**	**201-300**	**<300**
Second language acquisition.	75	10	5	0	10
Communication patterns in cultures where a language other than English is spoken	70	25	5	0	0
Differential assessment of bilingual vs. monolingual individuals	85	10	5	0	0

SD = Strongly Disagree; D = Disagree; N = Neither Disagree or Agree; 4A = Agree; SA = Strongly Agree

Table 1. Continued...

Statement	%SD	%D	%N	%A	%SA
Assessment tools for bilingual individuals	85	15	0	0	0
Language disorders vs. language differences	85	10	5	0	0
Laws involved in the assessment and treatment of bilingual clients	90	5	5	0	0
How to utilize a language interpreter	90	10	0	0	0

SD = Strongly Disagree; D = Disagree; N = Neither Disagree or Agree; 4A = Agree; SA = Strongly Agree
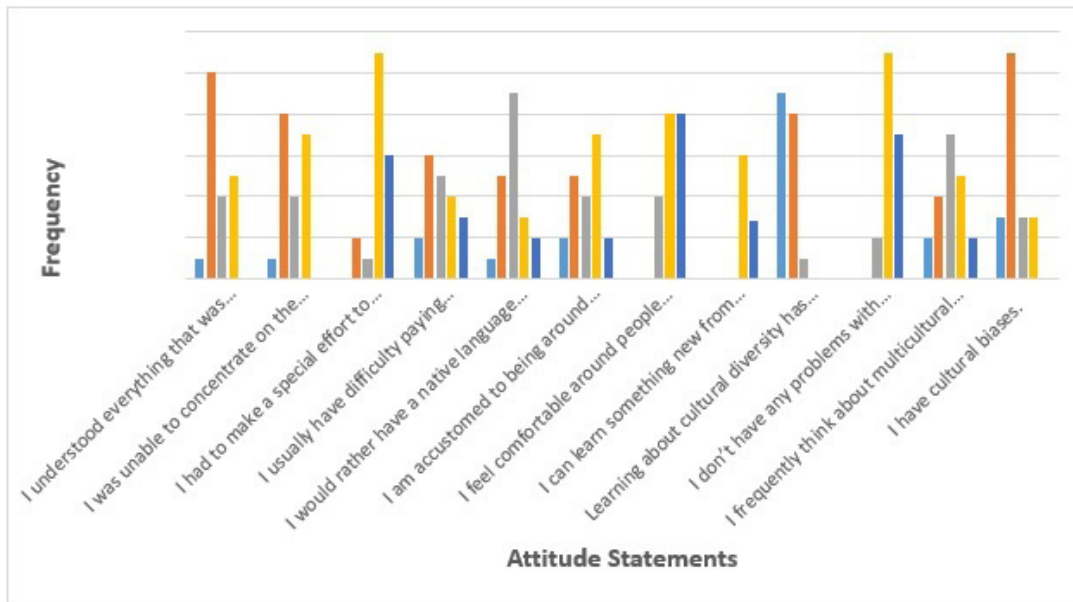
Table 2. Descriptive statistics

CLD Attitudes	Description	M	SD
1	I understood everything that was said by the speaker.	2.65	.93
2	I was unable to concentrate on the announcement due to the speaker's accent.	2.85	.98
3	I had to make a special effort to interpret what the speaker was saying.	4.05	.88
4	I usually have difficulty paying attention to what ESL speakers are saying.	3.00	1.25
5	I would rather have a native language speaker giving the announcement.	3.00	1.02
6	I am used to being around people of various cultures.	3.10	1.21
7	I feel comfortable around people from different racial and ethnic groups.	4.20	.76
8	I can learn something new from people of different ethnic groups.	4.70	.47
9	Learning about cultural diversity has not much of an effect on me.	1.70	.73
10	I don't have any problems with people of other cultures.	4.25	.63
11	I frequently think about multicultural issues.	3.05	1.14
12	I have cultural biases.	2.30	.92
CLD Interactions			
13	Age	3.40	1.31
14	Gender	3.25	1.44
15	Language	1.55	1.05
16	Nationality	1.95	1.05
17	Physical abilities	2.00	1.25
18	Mental abilities	2.25	1.20
19	Race	2.55	1.27
20	Ethnicity	2.10	1.16
21	Religion	2.55	1.70
22	Sexual Orientation	2.15	1.26
23	Low SES	1.85	1.22
24	High SES	1.75	1.16
CLD Information			
25	Age	2.50	1.31
26	Gender	1.75	1.07
27	Language	1.60	.88
28	Nationality	1.75	1.07
29	Physical abilities	1.80	1.15
30	Mental abilities	2.05	.99
31	Race	1.70	.92
CLD Information	**Description**	**M**	**SD**
32	Ethnicity	1.70	.97

M = mean; SD = standard deviation; CLD = Cultural and Language Diversity

Table 2. Continued...

33	Religion	1.50	.94
34	Sexual Orientation	1.35	.74
35	Low SES	1.60	1.14
36	High SES	2.65	.93

M = mean; SD = standard deviation; CLD = Cultural and Language Diversity

Frequency: 1=Strongly Disagree, 2=Disagree, 3=Neither Disagree or Agree, 4=Agree, 5 = Strongly Agree. Attitude Statements: I understood everything that was said by the speaker; I was unable to concentrate on the announcement due to the speaker's accent; I had to make a special effort to interpret what the speaker was saying; I usually have difficulty paying attention to what ESL speakers are saying; I would rather have a native language speaker giving the announcement; I am accustomed to being around people of various cultures; I feel comfortable around people from different racial and ethnic groups; I can learn something new from people of different ethnic groups; Learning about cultural diversity has not much of an effect on me; I don't have any problems with people of other cultures; I frequently think about multicultural issues; I have cultural biases

Figure 1. Attitudes and beliefs toward CLD in SLP students: Summary of responses
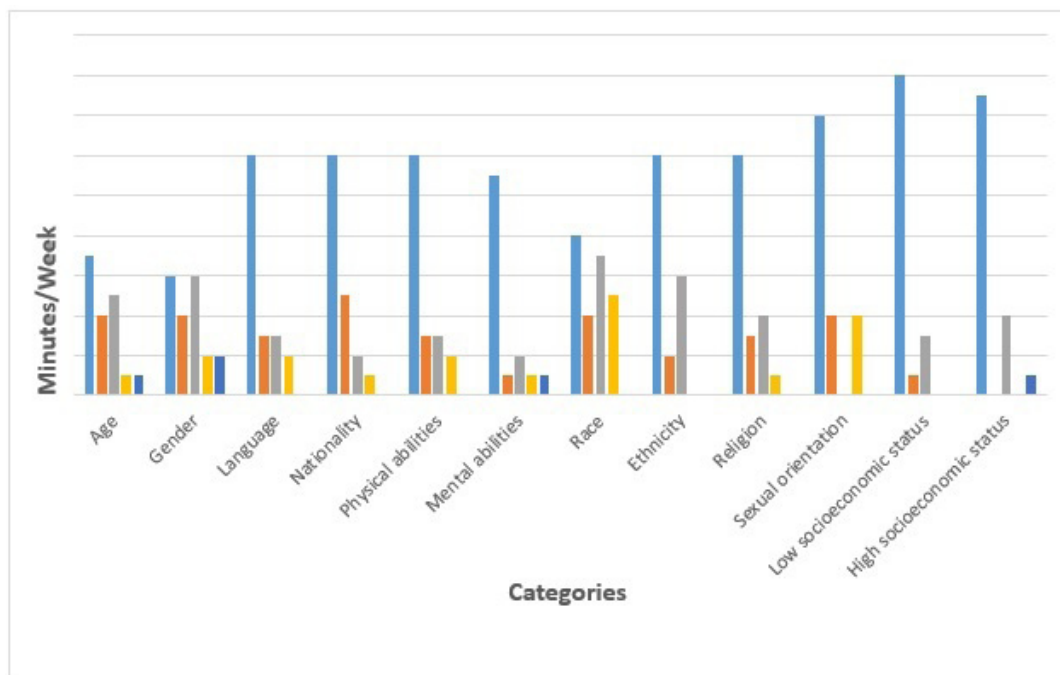
Minutes/Week: 1=0, 2=>60, 3=60,-420, 4=421-840, 5=<840. Categories: age, gender, language, nationality, physical abilities, mental abilities, race, ethnicity, religion, LSE, HSE
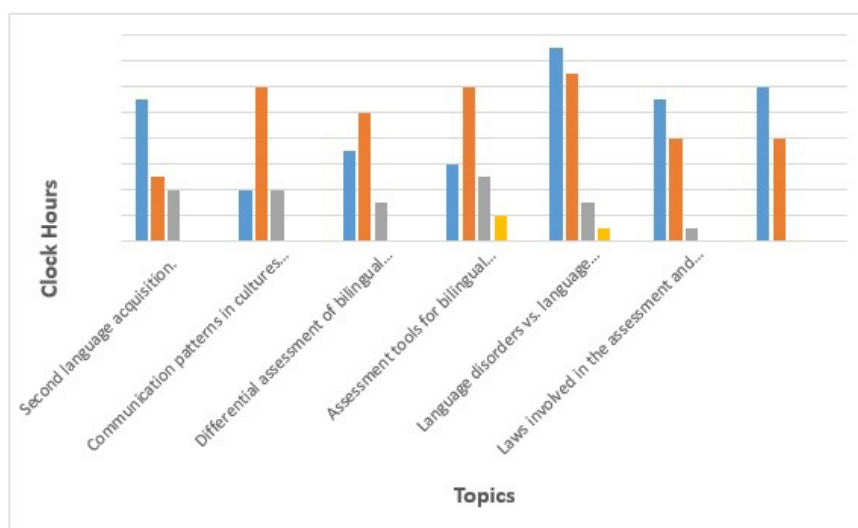
Figure 2. Interaction in minutes/week
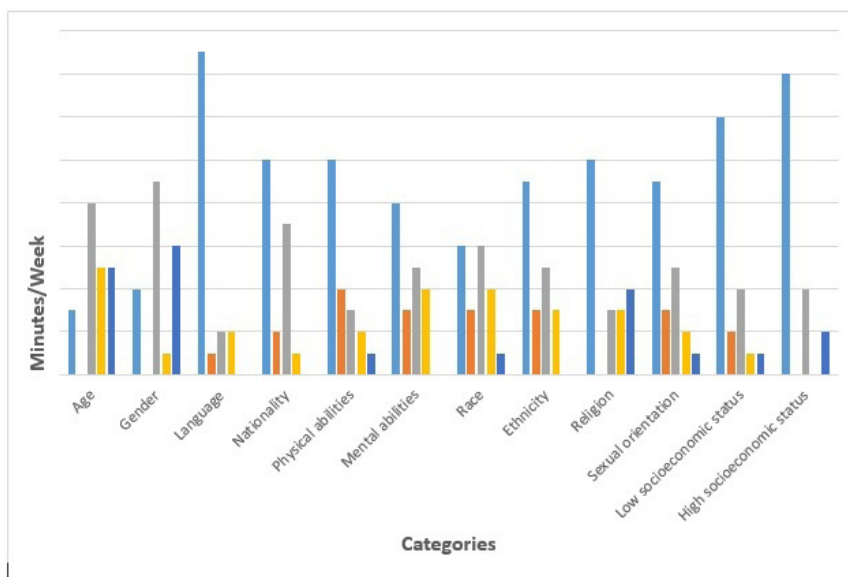
Minutes/Week: 1=0, 2=>60, 3=60,-420, 4=421-840, 5=<840. Categories: age, gender, language, nationality, physical abilities, mental abilities, race, ethnicity, religion, LSE, HSE
Figure 3. Information in minutes/week

Clock Hours: 1=0, 2=1-100, 3=101-200, 4=201-300, 5=<300. Topics: Second language acquisition; Communication patterns in cultures where a language other than English is spoken; Differential assessment of bilingual vs. monolingual individuals; Assessment tools for bilingual individuals; Language disorders vs. language differences; Laws involved in the assessment and treatment of bilingual clients; How to utilize a language interpreter
Figure 4. University coursework-clock hours

Cultural bias

In this study Pearson's correlations were used to test relationships of self-reported cultural bias (i.e., I have cultural bias) and several variables (i.e., attitudes towards language diversity, level of CLD interaction and information, amount of university and non-university CLD coursework). Statistically significant positive correlations were detected between cultural bias and effort in interpreting CLD speech, r = .495, p = .013, as well as between cultural bias and difficulty paying attention to CLD speech, r = .454, p = .022. This indicates that higher levels of cultural bias were related to higher levels of effort in interpreting CLD speech as well as difficulty paying attention

to CLD speech. Positive correlations were also demonstrated by the relationship between cultural bias and (a) level of interaction with low SES, r = .646, p = .001, as well as in (b) level of interaction with high SES, r = .465, p = .019 (see Table 3). None of the other correlations were significant.

Stepwise multiple regression analysis was used as a tentative approach to further examine the strength of correlation between self-reported cultural bias and CLD attitudes and beliefs. Results from a combination model including all 11 statements from section A of the questionnaire (see Appendix A) indicated a significant relationship among these factors, F = 5.835, p = .027, R^2 = .245 (see Table 4). Making a special effort in interpreting CLD speech was found to have the strongest beta coefficient,

indicating that this variable was the strongest contributor to the overall R^2 followed by having difficulty paying attention to CLD. Furthermore, cultural bias was predicted by level of interaction with individuals from diverse characteristics such as age, gender, language, nationality, physical and mental abilities, race, ethnicity, religion, sexual orientation, and socioeconomic status (see Appendix A). These combined variables statistically significantly predicted cultural bias, F = 12.914, p = .002, R^2 = .418; the strongest contributors to the overall R^2 in this model were associated with interactions with diverse SES. A similar approach

applied to level of information about individuals from diverse characteristic did not reach statistical significance (see Table 4).

Additional analyses were performed using self-reported bias as criterion and responses to attitudes' statements (i. e., questionnaire, section A) organized by "positive" and "negative" (i.e., 1, 6, 7, 8, 10 and 2, 3, 4, 5, 9 respectively) as predictors. A t-test revealed no differences between means of positive and negative statements (see Table 5). Lack of statistically significant decreases for some of the comparisons may be explained by the small sample size used in this stud as large sample sizes.
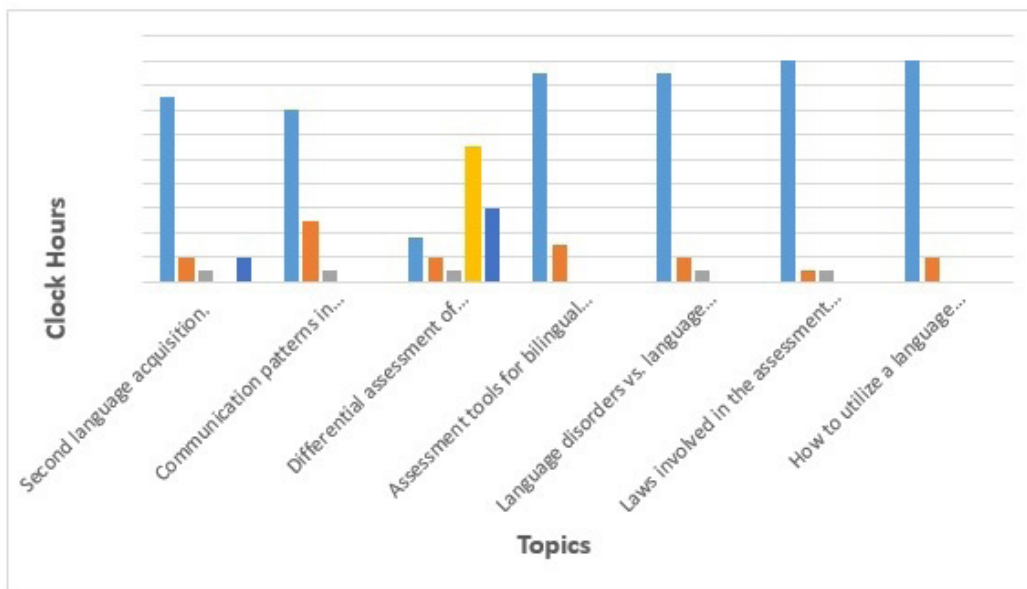
Clock Hours: 1=0, 2=1-100, 3=101-200, 4=201-300, 5=<300. Topics: Second language acquisition; Communication patterns in cultures where a language other than English is spoken; Differential assessment of bilingual vs. monolingual individuals; Assessment tools for bilingual individuals. Language disorders vs. language differences; Laws involved in the assessment and treatment of bilingual clients; How to utilize a language interpreter
Figure 5. Non-university coursework-clock hours

Table 3. Attitudes and beliefs toward language diversity in SLP students: Statistically significant correlations

Statements	r	p
Self-reported Cultural Bias & Special Effort to Interpret CLD Speech	.495	.013
Self-reported Cultural Bias & Difficulty Paying Attention to CLD Speech	.454	.022
Self-reported Cultural Bias and Interaction with Low SES	.646	.001
Self-reported Cultural Bias and Interaction with High SES	.465	.019

Table 4. Stepwise regression summaries

Attitudes Statements	R	R²	R² Change	F Change	df	p	F
	.495	.245	.245	.027	19	.027	5.835
CLD Interaction	R	R2	R2 Change	F Change	df	p	F
Overall	.646	.418	.418	12.914	13	.002	12.914
CLD Information	R	R2	R2 Change	F Change	df	p	F
Overall	.928	.861	.861	2.862	13	.102	2.862

Criterion: I have cultural biases. Predictors: Attitude Statements; I understood everything that was said by the speaker; I was unable to concentrate on the announcement due to the speaker's accent; I had to make a special effort to interpret what the speaker was saying; I usually have difficulty paying attention to what ESL speakers are saying; I would rather have a native language speaker giving the announcement; I am used to being around people of various cultures; I feel comfortable around people from different racial and ethnic groups; I can learn something new from people of different ethnic groups; Learning about cultural diversity has not much of an effect on me; I don't have any problems with people of other cultures; I frequently think about multicultural issues

Table 5. Attitudes and beliefs toward language diversity in SLP students: Comparisons between positive and negative attitude's statements

t	df	p	Mean Difference	Std. Error Difference
1.602	8	.148	0.860	0.536

Positive Statements: I understood everything what was said by the speaker; I am used to being around people of various cultures; I feel comfortable around people from different racial and ethnic groups; I can learn something new from people of different ethnic groups; I don't have any problems with people of other cultures. Negative Statements: I was unable to concentrate on the announcement due to the speaker's accent; I had to make a special effort to interpret what the speaker was saying; I usually have difficulty paying attention to what ESL speakers are saying; I would rather have a native language speaker giving the announcement; Learning about cultural diversity has not much of an effect on me

DISCUSSION

The main objective of this study was to examine procedures and aspects involved in a broad investigation regarding attitudes and beliefs regarding language diversity, by specifically examining attitudes and beliefs of SLP students toward the accented speech of individuals who are nonnative Standard American English (SAE) speakers. Understanding the specific role of accented speech in cultural background should lead future clinicians to provide culturally competent services.

Outcomes from this introductory study shall enlighten critical aspects of attitudes and beliefs of pre-clinicians towards CLD, such as self-reported cultural bias. Results should prompt reflections for further investigation, as well as considerations in developing curricula for SLP programs.

Results of this work indicated critical areas that need to be further investigated so that a more comprehensive knowledge base can be established to include priority items for consideration when developing multicultural curricula in SLP programs.

The results suggest that exposure to CLD may impact attitudes and beliefs of SLP students toward diversity. This pilot study revealed correlations between students' effort in interpreting CLD speech as well ability to pay attention to CLD speech with self-reported cultural bias. This may be associated with the finding that a large of the participants reported having minimal contact with those who are ESL speakers. Research in several disciplines has suggested that even minimal exposure to varied cultural groups may be associated with more positive attitudes, suggesting that educational activities allowing increased exposure to varied cultural groups may be a beneficial addition to SLP curricula. More than half of the participants reported having minimal access to information about ESL speakers and access to information about people of diverse nationality. Increasing exposure through the inclusion of guest speakers, through media supports and community activities are feasible additions to increase cultural competency. These outcomes are concurrent with previous findings associated with needs of increasing awareness towards cultural diversity in higher education, as well as efficacy of services delivered[13,14].

CONCLUSION

Results of this study have a variety of implications and uses. While the recommendations for increased CLD training is a logical and intuitive conclusion for practice, fostering awareness of implicit bias among students, given its dwelling unconscious nature, is much more complicated than fostering awareness of its explicit counterpart, which is consciously endorsed.

Data reported may help in determining procedures applicable in larger investigations regarding the effect of attitudes and beliefs toward language diversity in SLP. These results may also be considered when developing curricula in SLP programs. Finally, this study could inspire future research about attitudes and beliefs toward aspects of diversity.

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Author contributions

MCF carried out study concept and design, participants' recruitment, data collection, data analysis, and manuscript writing; LMCS was responsible for study design and manuscript writing; JLN was responsible for study design and manuscript writing; DSB carried out data tabulation and participants' management.

Appendix A. Attitudes and Beliefs Toward Cultural and Language Diversity (CLD) in University Students

Section A

Immediately after listening to the announcement made by a person who speaks English as a Second Language, please indicate how true is each statement by circling the appropriate number using the following scale:

1 = strongly disagree 2 = disagree 3 = neither disagree or agree 4 = agree 5 = strongly agree

1. I understood everything that was said by the speaker.	1	2	3	4	5
2. I was unable to concentrate on the announcement due to the speaker's accent.	1	2	3	4	5
3. I had to make a special effort to interpret what the speaker was saying.	1	2	3	4	5
4. I usually have difficulty paying attention to what ESL speakers are saying.	1	2	3	4	5
5. I would rather have a native language speaker giving the announcement.	1	2	3	4	5
6. I am used to being around people of various cultures.	1	2	3	4	5
7. I feel comfortable around people from different racial and ethnic groups.	1	2	3	4	5
8. I can learn something new from people of different ethnic groups.	1	2	3	4	5
9. Learning about cultural diversity has not much of an effect on me.	1	2	3	4	5
10. I don't have any problems with people of other cultures.	1	2	3	4	5
11. I frequently think about multicultural issues.	1	2	3	4	5
12. I have cultural biases.	1	2	3	4	5

Section B

Please refer to the following scale in order to answer questions 13-36:

A. 0

B. Less than 60 minutes per week

C. 60-420 minutes per week

D. 421-840 minutes per week

E. More than 840 minutes per week

Estimate the amount of time, in minutes per week, you interact with (talk /write to) people who are different from yourself in terms of the following characteristics:

13. Age

14. Gender

15. Language

16. Nationality

17. Physical abilities

18. Mental abilities

19. Race

20. Ethnicity

21. Religion

22. Sexual orientation

23. Low SES

24. High SES

Appendix A. Continued...

Estimate the amount of time, in minutes per week, you read, watch, or listen to factual information (as opposed to fiction) about people who are different from yourself in terms of the following characteristics:

25. Age

26. Gender

27. Language

28. Nationality

29. Physical abilities

30. Mental abilities

31. Race

32. Ethnicity

33. Religion

34. Sexual orientation

35. Low SES

36. High SES

Please refer to the following scale in order to answer questions 37-50:

A. 0

B. 1-100 h

C. 101-200 h

D. 201-300 h

E. More than 300 h

How many clock hours (not semester credit hours) have you had of university coursework that addressed the following?

37. Second language acquisition.

38. Communication patterns in cultures where a language other than English is spoken.

39. Differential assessment of bilingual vs. monolingual individuals.

40. Assessment tools for bilingual individuals.

41. Language disorders vs. language differences.

42. Laws involved in the assessment and treatment of bilingual clients.

43. How to utilize a language interpreter.

How many clock hours (not semester hours) have you had in non-university experiences that addressed the following?

44. Second language acquisition.

45. Communication patterns in cultures where a language other than English is spoken.

46. Differential assessment of bilingual vs. monolingual individuals.

47. Assessment tools for bilingual individuals.

48. Language disorders vs. language differences.

49. Laws involved in the assessment and treatment of bilingual clients.

50. How to utilize a language interpreter.