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Racial Colorblindness in Speech-Language Pathology Students


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Abstract

Purpose: Implicit racial biases have been documented across a variety of allied health professions and training programs. The purpose of this study was to examine implicit racial bias within speech-language pathology (SLP) students by evaluating their attitudes towards statements reflecting racial colorblindness.

Method: Fifty-nine students currently enrolled in an SLP program completed the Color-Blind Racial Attitudes Scale (CoBRAS; Neville et al., 2000) via an online Qualtrics survey, comprised of three subscales: Racial Privilege, Institutional Discrimination, and Blatant Racial Issues.

Results: Results suggested that although 67% do not endorse colorblind statements on the CoBRAS, 33% of the students either agreed with colorblind statements (18%) or indicated neither agreement nor disagreement with colorblind statements (15%). Colorblind statements related to Racial Privilege (e.g., *Everyone who works hard, no matter what race they are, has an equal chance to become rich.*) were rejected less frequently (55%) than statements related to Institutional Discrimination (68%; e.g., *Racial and ethnic minorities in the U.S. have certain advantages because of the color of their skin.*) or Blatant Racial Issues (79%; e.g., *Racial problems in the US are rare, isolated situations.*).

Conclusion: Voluntary self-examination of implicit racial bias within any pre-professional training program is a difficult, but important step towards addressing issues of systemic racism prior to entering the field. This study is the first to do so within speech-language pathology. Although data indicating relatively high rejection of colorblind statements found in this study are promising, students did not uniformly reject colorblind statements. Such response variation provides a foundation to further educate SLP students about implicit bias and its potential to impact one's cultural responsiveness.

Keywords: colorblindness, race, speech-language pathology, students

Introduction

Implicit racial biases have been documented across a variety of allied health professions. Systematic reviews of implicit bias in healthcare professionals indicate bias against Black, Indigenous, People of Color (BIPOC)¹ during diagnosis, treatment recommendations, and other aspects of the medical care they received (e.g., FitzGerald & Hurst, 2017; Hall et al., 2015; Maina et al., 2017). Speech-language pathologists (SLPs) interact with a diverse clientele in a clinical environment and yet have been excluded from much of the existing implicit bias literature. According to the Code of Ethics outlined by the American Speech-Language-Hearing Association (ASHA), SLPs are prohibited from discriminating in the delivery of professional services based on race, ethnicity, sex, gender identity/gender expression, sexual orientation, age, religion, national origin, disability, culture, language, or dialect (ASHA, 2016). Despite this mandate, minimal investigation of implicit biases within speech-language pathology have been conducted. Therefore, the purpose of this study was to gain insight into implicit bias within students currently enrolled in SLP programs by evaluating their perceptions and attitudes about one common form of implicit bias – racial colorblindness. Colorblind racism has been identified as pervasive issue in academia (Bonilla-Silva, 2022) and prevalent within the policies that govern speech-language pathology (Yu et al., 2021). This is particularly true for *minimization of racism* wherein the negative impact of racism is downplayed, and/or described as a historical phenomenon, which (a) permits individuals and institutions to avoid taking action that would

¹ The term BIPOC is considered the most accurate and appropriate term to use when referring to racial groups that often face injustice within our society. The distinction of Black and Indigenous in the term BIPOC signifies that not all people of color are equally discriminated against or face equal levels of injustice.

address systemic racial inequities, and (b) serves as a barrier to adopting a lens of cultural responsiveness within the workplace.

Implicit Bias in Health Care Professionals

Several systematic reviews conducted over the past decade highlight a pattern of explicit as well as implicit bias against BIPOC within the medical field and allied health professions. FitzGerald and Hurst (2017) reviewed 42 peer-reviewed studies investigating potential implicit bias within doctors, nurses, and other health care providers currently working in the medical field. These authors based their selection of studies on a definition of implicit bias which involves a lack of intention, conscious availability, or controllability. Results suggested that healthcare professionals exhibit levels of implicit bias comparable to the general population. Twenty of the 25 studies evaluated reported some form of bias in a variety of contexts, including (a) diagnosis, (b) treatment recommendations, (c) the number of questions asked to the patient, and (d) the number of tests ordered. For example, Lutfey (2009) found physicians were less confident in their diagnosis of coronary heart disease for Black and young female patients. Stepanikova (2012) reported that 81 general practitioners and family physicians demonstrated a greater time pressure while visiting Black patients, which resulted in a lower rate of referral to specialists. Furthermore, FitzGerald and Hurst (2017) found that there is a significant correlation between the level of implicit bias within health care providers and quality of life indicators for BIPOC. These findings highlight the consequence of implicit bias within clinical settings and the importance of analyzing and addressing implicit racial biases that may prevail within current institutional policies.

A systematic review by Maina et al. (2017) assessed 37 studies to evaluate racial/ethnic bias in health care providers by using the Race Implicit Association Test (Race IAT). Of the 37

studies, 31 (84%) revealed evidence of “pro-White or light-skin/anti-Black, Hispanic, American Indian, or dark skin bias among health care professionals across various levels of training and disciplines” (p. 221). The authors also found that health care providers who display a higher level of implicit bias exhibited poorer patient-provider communication (e.g., more verbal dominance and less emotional responsivity from providers) and greater disparities in treatment recommendations (e.g., predicted adherence to recommendations and follow-up appointments). These providers also held lower expectations of therapeutic bonds between their patients and themselves, pain management, and empathy for their patients. Similar implicit bias shown throughout the medical field has been observed in allied health professions. Steed (2014) surveyed the attitudes of students and faculty at one Southern school of allied health using the Racial Argument Scale (RAS; Saucier & Miller, 2003) to compare their racial attitudes in terms of cultural sensitivity to those of students and faculty of the general population in the United States. Steed compared occupational therapists’ bias to that of other allied health care providers (i.e., speech-language pathologists, physicians assistants, physical therapists). Findings from the RAS indicated that speech-language pathologists, physicians assistants, and physical therapists all displayed a higher anti-Black prejudice.

Implicit Bias in Speech-Language Pathology

Minimal investigation of implicit bias within speech-language pathology has been conducted. One way in which implicit bias has been examined is treatment of nonmainstream dialects of English (for review of implicit accent and linguistic biases, see Ayala-Lopez, 2020). Clark et al. (2020) utilized an online survey to assess the implicit bias of 129 Australian speech-language pathologists. SLPs were instructed to rank 28 statements regarding phrases spoken by children in primary and secondary school on a 5-point Likert scale based on agreeableness in

terms of their positive or negative attitude toward the child's dialectical variation (e.g., a survey item assessing language "impurity", such as *Youse* is an appropriate way to indicate 'more than one of you'). This study was adapted from Oliver and Haig (2005) who used statements from students in primary and secondary schools in Western Australia to investigate the attitudes of teachers. Clark et al. modified the study to evaluate SLPs, rather than teachers, to explore what SLPs believe to be acceptable or correct and standard Australian language. Data indicate that negative attitudes toward a person with a different dialect from the clinician can potentially impact their clinical judgment in distinguishing whether their client has a dialectical difference or a disorder. If this is the case, such judgements can result in an inequitable service provision, differential diagnosis, clinical goal setting, and diminish the overall quality of services to those who speak with non-standard dialects. Clark et al. demonstrated that more negative views are found in less experienced SLPs with respect to dialectal variation.

Hendricks et al. (2021) evaluated the perception of African American English by speech-language pathology graduate students by surveying 73 students from 46 randomly selected SLP graduate programs in the United States. This survey revealed that the students who participated held positive opinions of AAE but rank those who speak AAE, primarily African Americans, lower in three personal attribute categories: socio-intellectual, dynamism, and aesthetic. These findings indicate that training for future SLPs should be expanded to address negative attitudes toward dialect use, which reflect a systemic anti-Black linguistic racism and maintain a standard language ideology (Lippi-Green, 1994). In sum, although under-researched, it is reasonable to predict that the relatively implicit biases shown by Clark et al. (2020) and Hendricks et al. (2021) towards linguistic or accent biases in SLPs may lead to the associated patient-care consequences observed in similar allied medical fields (e.g., FitzGerald & Hurst, 2017; Hall et al., 2015).

Racial Disparities and Self-Examination in Speech-Language Pathology

According to ASHA's CSD Education Survey: Communication Sciences and Disorders Education Trend Data (2021), 23.3% of students enrolled in speech-language pathology master's programs identified as a racial or ethnic minority in the 2019-2020 academic year. Although this is an upward trend from 13.6% reported in the 2010-2011 academic year, there is still a large discrepancy in minority student enrollment for speech-language pathology programs (ASHA, 2020). Due to the current racial composition of the field and the potential for implicit bias within allied health professions, the need to evaluate implicit bias within SLP programs is immediate. A critical step towards providing thorough, culturally responsive speech-language pathology programs is to examine the perceptions of racial privilege and compare racial attitudes across races within the field. Ebert (2013) surveyed the awareness of White privilege among graduate-level SLP students from 11 programs across the United States. Responses indicated that there is a predominance of White racial majority individuals in graduate-level training programs and in professional roles, particularly within instructors or supervisors (at least 90% White). The author also found that 57% of White students who completed the survey believe that both White and BIPOC graduate students experience the same challenges throughout their program. This was one of the six survey questions where over 50% of White students expressed their belief in fairness pertaining to the experience and delivery of services for students of all races enrolled in SLP graduate programs. However, the survey revealed that graduate BIPOC students held lower rates of agreement on all questions pertaining to racial equality. Data also indicated an inconsistent awareness of White privilege among White students. Combined, these findings demonstrate a discrepancy in awareness regarding racial equality in SLP graduate-level programs between White and BIPOC students.

Preis (2013) discusses the positive impact of teaching SLP students ($N = 20$) about White privilege during an undergraduate course entitled Cultural Diversity in Communication which focused on the importance of communication in a diverse society, specifically, “the role racial bias and perception of race have on intercultural communication” (p. XX). Preis defines White privilege as an unjustified advantaged earned entirely because of skin color, which results in racial obliviousness (e.g., not recognizing the influence of one’s culture or race) and colorblindness (e.g., stating that all people are the same), effectively ignoring, consciously or unconsciously, that racial discrimination and privilege exist. Preis notes that a conversation surrounding race with SLP students should begin with discussing White privilege. The author also mentions that the racial obliviousness or colorblindness seen in the SLP students may be due to minimal racial diversity within the profession.

Implicit Bias and Colorblindness

Implicit bias can be manifested as attitudes or behaviors that have negative consequences on a marginalized group, regardless of whether the perpetrator is aware of their actions. Primary ways in which implicit bias can impact people of racial minority is through colorblindness, microaggressions, and White privilege (Preis, 2013, Ebert, 2013). Colorblindness is considered a byproduct of White privilege and a form of implicit racial bias (Preis, 2013). It is defined by Neville et al. (2000) as a belief that race does not and should not matter to people. Colorblindness results in a disregard of racism by creating the notion that if a race does not matter, then racism does not matter. A meta-analysis of 83 studies conducted by Yi et al. (2023) found that specific aspects of colorblind ideology, such as color evasion and power evasion, were significantly linked to anti-Black prejudice, anti-social justice behaviors, and lower diversity openness and racial/ethnocultural empathy. The American Psychological Association (APA)

acknowledged the dangers of colorblind practice 25 years ago (*Can – or should-America be color-blind?*; APA 1997), and found colorblind racial ideology negatively impacting practicing clinicians as well as student trainees (e.g., Johnson & Jackson Willams, 2015; Neville et al., 2013) The APA (2021) recently published a resolution to actively, systematically examine and help to dismantle institutional racism in a range of professions (education, science, health care, work and economic opportunities, criminal and juvenile justice, early childhood development, government and public policy). The Council of Academic Programs in Communication Sciences and Disorders (CAPSCD, 2020) proposed a similar resolution to formally acknowledge, and enact change, to combat systemic and colorblind racism in speech-language pathology. ASHA's (2023) Strategic Plan also includes increasing diversity, equity, and inclusion within the profession. In support of both resolutions, similar to those of the APA, the need to acknowledge the existence of colorblind racism is considered a critical step towards dismantling longstanding systemic inequities.

Summary and rationale for study

Given the existence and negative impact of implicit bias within the medical field and allied health professions (e.g., FitzGerald & Hurst, 2017, Hall et al., 2015; Maina et al., 2017) the pronounced racial and ethnic disparities in the field of communication science and disorders (ASHA, 2020) and the concerns about pre-professional education for SLPs expressed by Preis (2013) and Ebert (2013; see also Kimmons, 2017 and Rodriguez, 2016), it is important to examine implicit bias within SLP programs. This examination should include the assessment of racial attitudes and awareness of implicit bias, such as colorblindness, among SLP students. Colorblindness within our field allows systemic racism to take root or flourish in such a disproportionately White workplace (e.g., a person who does not believe racism exists would not

feel the need to adopt culturally responsive practices). The aim of this study, therefore, is to analyze implicit racial bias in SLP students by administering a well-validated quantitative survey – the Color-Blind Racial Attitudes Scale (CoBRAS; Neville et al., 2000) – with respect to two specific research questions:

RQ1: What are the overall perceptions of speech-language pathology (SLP) students towards statements that reflect racial colorblindness?

RQ2: Does agreement with colorblind statements differ between SLP students based on the respondents' self-identified race (White versus BIPOC)?

Methods

Participants

This study was approved by a university Institutional Research Board (IRBAM-21-0294). Potential participants were recruited from SLP students currently enrolled in a Communication Sciences and Disorders program within a large public university in the Southern region of the United States ($N = 334$, including both undergraduate degree and master's degree-seeking graduate students). Both BIPOC and White students were recruited to participate to gain a comprehensive understanding of the level of implicit racial bias within SLP students. Although comparison of data from an equal number of students who identify as a member of each race is ideal, a disproportionate distribution of race was not unexpected and indicative of composition of speech-language pathology programs across the country.

Procedure

Students within the speech-language pathology program were invited to participate via email in November of 2021. Two follow-up email reminders were sent within two weeks of initial contact. Students consented to participating in the study by clicking a link to a Qualtrics

survey included in the recruitment email. Once opening the survey, students were presented with a basic description of the study and prompted to again provide consent to be a participant in the study. If a student selected *I consent*, the survey began; if a student selected *I do not consent*, the survey was immediately terminated. Participants were then instructed to complete the CoBRAS (Neville et al., 2000) and a second survey related to implicit bias that was included as part of a separate study (Mekawi & Todd, 2018). After completing the survey, students were then required to provide general demographic information. The demographics section of the survey included the following questions: (1) Please select your race/ethnicity (e.g., White, Black or African American, Hispanic or Latino, Asian, Native Hawaiian or Pacific Islander, other [insert other]), (2) Please select your gender(s), (3) Please select your age, (4) Please indicate your country of origin, (5) Please select your current student distinction (e.g., first year master's student, second year master's student, doctoral student, undergraduate student), (6) Please select your anticipated graduation year, and (7) Please describe your political affiliation [optional]. Students were then required to acknowledge that the parent university, department, and research team do not endorse any of the preceding statements or opinions included in the survey. Lastly, students were encouraged but not required to provide feedback on the survey in a free-response text box. This feedback was not required for completion of the survey.

Measure

Color-Blind Racial Attitudes Scale (CoBRAS) Construction and Validation

The Color-Blind Racial Attitudes Scale (CoBRAS) was established by Neville et al. (2000) to assess attitudes related to racial colorblindness. It includes three factors: (1) Racial Privilege, (2) Institutional Discrimination, and (3) Blatant Racial Issues. These factors pertain to the respondent's level of awareness of racially colorblind statements regarding each factor. The

CoBRAS consists of 20 statements which are each individually ranked on a Likert-scale based on their agreeableness. The survey was completed by selecting a response on a 5-point Likert-scale based on the respondent's personal agreement with each statement for the CoBRAS (e.g., 1: Strongly Disagree to 5: Strongly Agree)². Factor 1, Racial Privilege, consists of seven items: statements 1, 2, 6, 8, 12, 15, 20 (e.g., Statement 1: *Everyone who works hard, no matter what race they are, has an equal chance to become rich.*). Factor 2, Institutional Discrimination, consists of seven items: statements 3, 4, 9, 13, 14, 16, 18 (e.g., Statement 14: *English should be the only official language in the US.*). Factor 3, Blatant Racial Issues, consists of six items: statements 5, 7, 10, 11, 17, 19 (e.g., Statement 7: *Racism may have been a problem in the past, but it is not an important problem today.*). Scores are obtained for each of the CoBRAS factors, as well as a total score, with higher scores on the CoBRAS indicating greater levels of colorblindness.

Neville et al. (2000) completed five studies utilizing 1,100 observations from college students ($n = 1,188$) to test the validity and reliability of CoBRAS. The first study completed on the preliminary 26-item CoBRAS scale revealed that a three-factor scale resulted in the most interpretable solution. The three factors include (1) Racial Privilege, (2) Institutional Discrimination, and (3) Blatant Racial Issues. The second study tested whether the previously established factors were the best overall structure to use compared to competing models and to assess the validity of CoBRAS. During this study, a 20-item CoBRAS was used. Confirmatory factor analysis suggests the three-factor model of CoBRAS is the best model compared to other

² During conversion of Likert-scales for online format, the original 6-point Likert scale (1: strongly agree, 6: strongly disagree) used by Neville et al. (2000) was inadvertently truncated to a 5-point Likert scale. Data should be interpreted with acknowledgment of this important methodological deviation.

competing models and was a good fit of the data according to the goodness-to-fit index. Study three was used to evaluate the CoBRAS test-retest reliability; this study indicated the Institutional Discrimination and Racial Privilege factors were acceptable (.80), while the Blatant Racial Issues factor showed .34 and CoBRAS total showed .68 after a 2-week period. Study four was performed to provide additional information regarding concurrent validity. Results indicated significant correlations among CoBRAS, Modern Racism Scale, and Quick Discrimination Index scales. The fifth study assessed whether the colorblind racial attitudes CoBRAS scores were sensitive to an intervention pertaining to multicultural training.

Descriptive statistics of all five studies reported moderate levels of colorblind racial attitudes among participants and showed significant intercorrelations among CoBRAS factors (subscales). Higher results from the CoBRAS factors and total score suggest greater (a) racial prejudice, (b) global belief in a just world, (c) sociopolitical dimensions of a belief in a just world, and (d) racial and gender intolerance. Following these studies, Neville et al. (2000) concluded that the CoBRAS has criterion-related, discriminant, construct, and concurrent validity and is reliable.

Participants

Of the 334 students who were invited to complete the survey, 104 (31%) started the survey, and 59 (18%) completed the survey. Of the 59 students who completed the survey, a majority identified themselves as White ($n = 42$; 71%; see Table 1). Sixteen BIPOC students completed the survey (27%), including students who identified as Black or African American ($n = 7$; 12%), Hispanic or Latino ($n = 2$; 3%), Asian ($n = 2$; 3%), and multiracial ($n = 1$, 2%). There were four students (7%) who identified as White and BIPOC (e.g., Hispanic or Latino, Native Hawaiian, or Pacific Islander), and one student marked *Other* as their race and indicated

that they preferred not to say. All participants were required indicate their class cohort distinction. Of the 59 students who completed the survey, there were 19 undergraduate students (32%) and 40 master's students, either in the 1st year of their program ($n = 16$; 27%) or the 2nd year ($n = 24$; 41%).

Table 1

Student Participant Self-Identified Race and Gender by Class Cohort

	Undergraduate	1 st Year Graduate	2 nd Year Graduate	Total
White	10	12	20	42
BIPOC	8	2	2	12
Multiracial	-	2	2	4
DNR	1	-	-	1
<i>N</i>	19	16	24	59
Female	16	14	24	54
Male	2	1	-	3
DNR	1	1	-	2

Note. Graduate-level students are enrolled in a speech-language pathology master's program. The Multiracial category refers to students who identified as both White and BIPOC (e.g., Hispanic or Latino, Native Hawaiian or Pacific Islander). DNR refers to students who chose not to report their race.

Results

Results were analyzed with respect to the two research questions. As described by Neville et al. (2000), higher CoBRAS scores are positively associated with an increased level of colorblindness (1: strongly disagreeing, 5: strongly agreeing), as are higher scores on each of the CoBRAS three subscales (i.e., Racial Privilege, Institutional Discrimination, Blatant Racial Issues). The Racial Privilege subscale is thought to reflect opinions associated with blindness of the existence of White privilege. The Institutional Discrimination subscale is thought to reflect

opinions associated with a limited awareness of the effects of institutional forms of racial discrimination. The Blatant Issues subscale is thought to reflect opinions associated with an unawareness of pervasive racial discrimination in general.

RQ1: What are the overall perceptions of current speech-language pathology (SLP) students towards statements that reflect racial colorblindness?

On average, SLP students reported low-to-moderate beliefs in colorblind statements ($M = 2.17, SD = 1.38$; see Table 2). A repeated measures ANOVA was conducted to assess differences between three CoBRAS subscales (Racial Privilege, Institutional Discrimination, Blatant Racial Issues). Greenhouse-Geisser correction was applied due to rejection of sphericity assumption for ANOVA. Findings indicated a significant main effect of subscale $F(1.80, 104.35) = 52.87, p < .001, \eta_p^2 = .48$ (very large effect size). Post-hoc comparisons indicated that agreement with statements that reflect Racial Privilege (e.g., *Everyone who works hard, no matter what race they are, has an equal chance to become rich.*) were rated by students as significantly higher ($M = 2.58, SE = .14, p < .001$) than statements that reflect Institutional Discrimination ($M = 2.17, SE = .12$; e.g., *Immigrants should try to fit into the culture and adopt the values of the U.S.*) and Blatant Racial Issues ($M = 2.17, SE = .12$; e.g., *Racism may have been a problem in the past, but it is not an important problem today.*)

Table 2
CoBRAS Factor Means and Standard Deviations

	Racial Privilege		Institutional Discrimination		Blatant Racial Issues		Overall Score	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
	Total ($n = 59$)	2.58	1.52	2.12	1.26	1.76	1.20	2.17

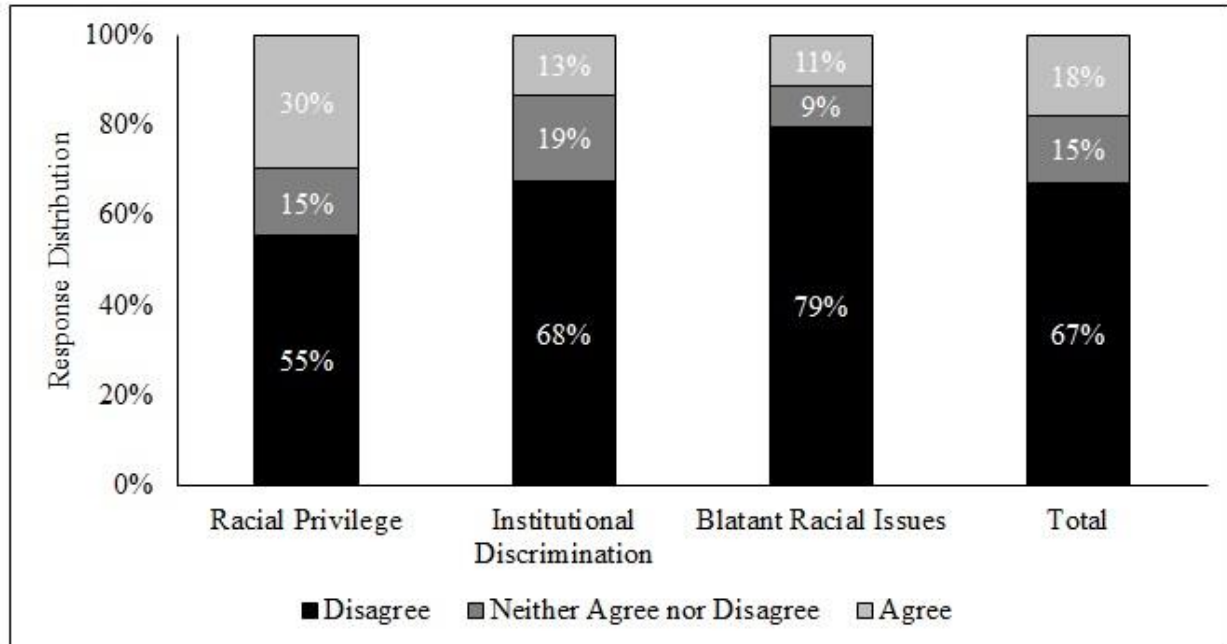
Note. CoBRAS = Color-blind Racial Attitudes Scale.

The findings indicated that SLP students surveyed displayed an overall low-to-moderate agreement with colorblind statements. To provide a more comprehensive description of response patterns across participants, the total number of student responses was calculated based on overall disagreement with colorblind statement (scores of 1-2, with 1 = *Strongly Disagree*), agreement with colorblind statements (scores of 4-5, with 5 = *Strongly Agree*), or neither agreement nor disagreement (score of 3).

Figure 1 depicts the total variance in agreement with colorblind statements included on the CoBRAS questionnaire. A total of 1,180 opportunities to respond to colorblind statements were provided (59 students x 20 colorblind statements on the CoBRAS). Of these 1,180 responses, 789 (67%) indicated that students disagreed with colorblind statements. The remaining 391 (33%) responses indicated that students agreed with colorblind statements (173 of 1180 responses, 15%) or that students neither agreed nor disagreed with colorblind statements (218 of 1180 responses, 18%).

Figure 1

Student ratings of agreement with colorblind statements on CoBRAS and subscales (Racial Privilege, Institutional Discrimination, Blatant Racial Issues).



Note. 5-point scale (1 – Strongly Disagree, 5 – Strongly Agree). *Disagree*: score of 1 or 2; *Neither Agree nor Disagree*: score of 3; *Agree*: score of 4 or 5. Percentages derived from 1180 total responses (59 respondents x 20 questions).

Figure 1 also depicts the total variance in responses to colorblind statements for each CoBRAS subscale: Racial Privilege, Institutional Discrimination, and Blatant Racial Issues. Of the 413 responses from the Racial Privilege subscale (59 students x 7 statements), 229 (55%) indicated students’ disagreement with colorblind statements related to Racial Privilege. The remaining 184 (45%) responses indicated that students agreed with Racial Privilege statements (123 of 413 responses, 30%) or that students neither agreed nor disagreed with Racial Privilege statements (61 of 413 responses, 15%). Of the 413 responses from the Institutional Discrimination subscale (59 students x 7 statements), 279 (68%) indicated students’ disagreement with colorblind statements related to Institutional Discrimination. The remaining 134 (32%) responses indicated that students agreed with Institutional Discrimination statements

(55 of 413 responses, 13%) or that students neither agreed nor disagreed with Institutional Discrimination statements (79 of 413 responses, 19%). Of the 354 responses from the Blatant Racial Issues subscale (59 students x 6 statements), 281 (79%) indicated students' disagreement with colorblind statements related to Blatant Racial Issues. The remaining 73 (21%) responses indicated that students agreed with Blatant Racial Issues statements (40 of 354 responses, 11%) or that students neither agreed nor disagreed that Blatant Racial Issues statements (33 of 354 responses, 9%).

RQ2: Does agreement with colorblind statements differ between SLP students based on the respondents' self-identified race (White versus BIPOC)?

The results for the CoBRAS were assessed based on race (i.e., White, BIPOC) to evaluate any potential between- and within-group differences in awareness of factors associated with racial colorblindness. Student respondents who identified as Black or African American, Hispanic or Latino, Asian, or Native Hawaiian or Pacific Islander were classified as BIPOC ($n = 12$). Students who identified as White ($n = 42$) were classified as White. Data from students ($n = 4$) who identified as multiracial/multiethnic – both White and BIPOC (e.g., Hispanic or Latino or Native Hawaiian or Pacific Islander) – were included in the BIPOC group categories, resulting in $n = 16$ BIPOC respondents. The student who did not report their race was excluded from analyses (total $N = 58$).

As depicted in Table 3, both White and BIPOC students expressed relatively low-to-moderate levels of colorblindness, (< 3 on 5-point Likert scale; White: $M = 2.32$, $SD = .98$, $SE = .15$; BIPOC: $M = 1.73$, $SD = .33$, $SE = .08$; 1: strongly disagree, 5: strongly agree). An independent samples t -test was conducted to examine Total CoBRAS ratings between groups.

White students indicated significantly higher agreement with colorblind statements than BIPOC students $t(55.51) = 3.45, p < .001, d = .69$ (moderate effect size).

Table 3

CoBRAS Factor Means and Standard Deviations by Race

	Racial Privilege		Institutional Discrimination		Blatant Racial Issues		Overall Score	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
	White (<i>n</i> = 42)	2.79	1.08	2.17	.97	1.92	1.03	2.32
BIPOC (<i>n</i> = 16)	1.93	.53	1.81	.48	1.33	.94	1.73	.33

Note. CoBRAS = Color-blind Racial Attitudes Scale.

A mixed model repeated measures ANOVA was conducted to examine ratings between group (White, BIPOC) and subscale (Racial Privilege, Institutional Discrimination, Blatant Racial Issues). Greenhouse-Geisser correction was applied due to a violation of the sphericity assumption for ANOVA. Findings indicated a significant main effect of subscale $F(1.80, 100.71) = 35.44, p < .001, \eta_p^2 = .39$ (very large effect size) and race $F(1, 56) = 5.95, p = .018, \eta_p^2 = .10$ (medium-to-large effect size) as well as a significant interaction between subscale and race $F(1.80, 100.71) = 4.08, p = .023, \eta_p^2 = .07$ (medium effect size). Post-hoc comparisons indicated that agreement with statements reflecting Racial Privilege and Blatant Racial Issues was significantly higher for White students (Racial Privilege: $M = 2.79, SE = .15$, Blatant Racial Issues: $M = 1.93, SE = .14$) than BIPOC students (Racial Privilege: $M = 1.93, SE = .24, p = .004$; Blatant Racial Issues: $M = 1.33, SE = .23, p < .028$).

Within race comparisons indicated that White students agreed with statements reflecting Blatant Racial Issues significantly less than both Institutional Discrimination ($M = 2.18, SE = .13; p < .001$) and Racial Privilege ($p < .001$). White students also indicated significantly higher

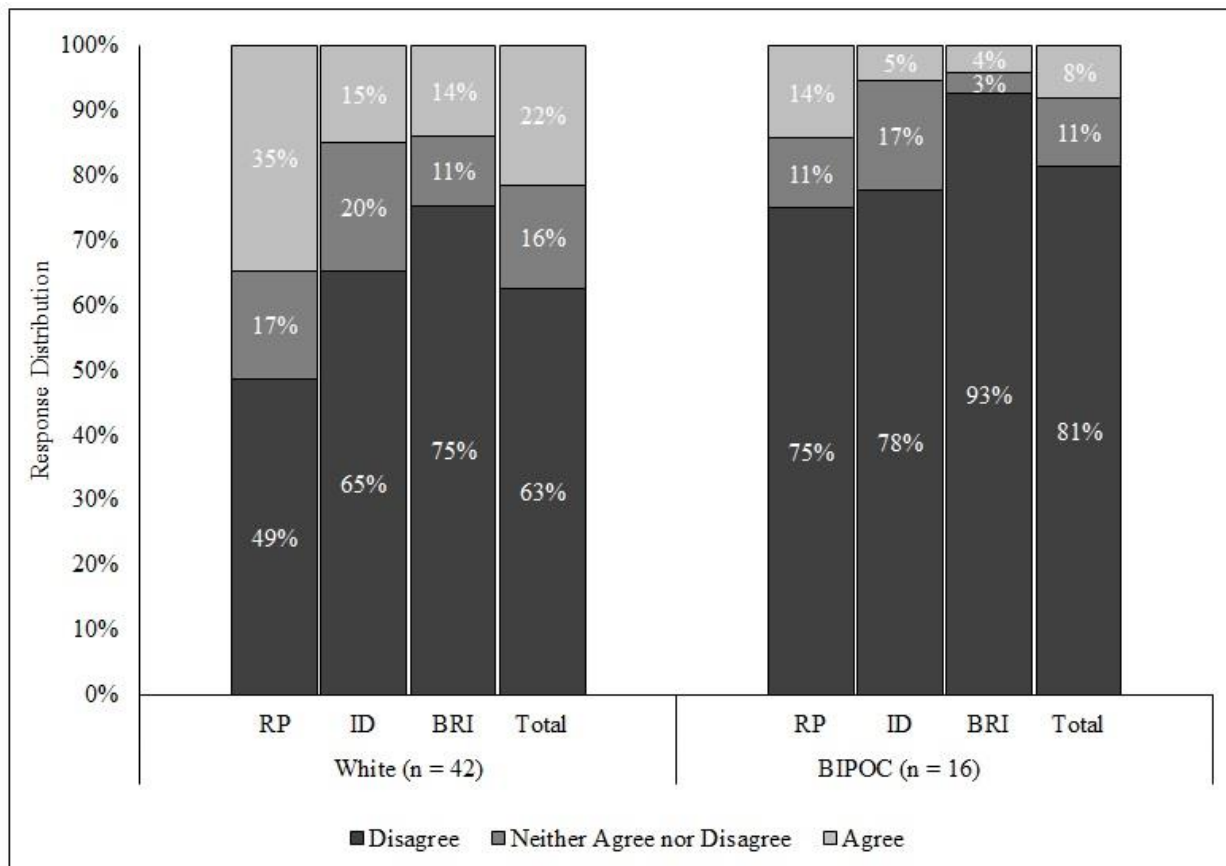
agreement with statements reflecting Racial Privilege than Institutional Discrimination ($p < .005$). By comparison, BIPOC students indicated significantly greater disagreement with Blatant Racial Issues statements ($p < .001$) compared to statements related to Institutional Discrimination ($M = 1.81, SE = .22; p < .001$) and Racial Privilege ($p < .001$)

Like overall ratings in RQ1, the proportion of responses across participants was calculated within each group (White: 840 responses [42 respondents x 20 items]; BIPOC: 320 responses [16 respondents x 20 items]). Classification categories were identical to RQ1 (scores of 1-2 = Disagree; scores of 4-5 = Agree; scores of 3 = Neither Agree nor Disagree).

Results are depicted in Figure 2. Of the 840 responses from White respondents, 525 (63%) indicated disagreement with colorblind statements. The remaining 315 (37%) responses indicated agreement with colorblind statements (181 of 840 responses, 21%) or neither agreement nor disagreement with colorblind statements (134 of 840 responses, 16%). Of the 320 responses provided by BIPOC students, 260 (81%) indicated disagreement with colorblind statements. The remaining 60 (18%) responses indicated agreement with colorblind statements (26 of 320 responses, 8%) or neither agreement nor disagreement (34 of 320 responses, 10%).

Figure 2

Student ratings of agreement with colorblind statements on CoBRAS and subscales (Racial Privilege, Institutional Discrimination, Blatant Racial Issues) by race (White, BIPOC).



Note. 5-point scale (1 – Strongly Disagree, 5 – Strongly Agree). *Disagree*: score of 1 or 2; *Neither Agree nor Disagree*: score of 3; *Agree*: score of 4 or 5. Percentages derived from 1160 total responses (58 respondents x 20 questions; White: n = 840, BIPOC: n = 320). RP = Racial Privilege; ID = Institutional Discrimination; BRI = Blatant Racial Issues.

As shown in Figure 2, the greatest disparity of responses between groups were observed for Racial Privilege and Blatant Racial Issues. Of the 294 statements from the Racial Privilege subscale provided by White respondents, 143 (49%) indicated disagreement with Racial Privilege statements, 102 (35%) indicated agreement with these statements and 49 (17%) indicated neither agreement nor disagreement. Of the 112 statements from the Racial Privilege subscale provided by BIPOC respondents, 84 (75%) indicated disagreement with these statements, 16 (14%) indicated agreement with these statements, 12 (11%) indicated neither

agreement nor disagreement. Of the 252 statements from the Blatant Racial Issues subscale provided by White respondents, 190 (75%) indicated disagreement with that Blatant Racial Issues statements, 35 (14%) indicated agreement with these statements and 27 (11%) indicated neither agreement nor disagreement. As a reminder, higher agreement for statements on the Blatant Racial Issues subscale reflect greater colorblindness (e.g., Statement 19: *Racial problems in the U.S are rare, isolated situations.*). Of the 96 statements from the Blatant Racial Issues subscale provided by BIPOC respondents, 89 (93%) indicated disagreement, 4 (4%) indicated agreement, and 3 (3%) indicated neither agreement nor disagreement.

Discussion

Investigating potential implicit racial bias in speech-language pathology students is an incremental step toward providing more inclusive and culturally responsive speech-language pathology programs. In this study, a well-validated measure of attitudes towards colorblind remarks – the Color-Blind Racial Attitudes Scale (CoBRAS; Neville et al., 2000) – was completed by 59 SLP students. Results indicated that at the time of the survey, SLP students displayed overall low-to-moderate colorblind attitudes, as indicated by a majority of responses (67%) indicating disagreement with colorblind statements. However, there was notable variation in agreement with colorblind statements across subscales, particularly the Racial Privilege subscale, and response variance was significantly mediated by respondents' self-identified race.

RQ1: What are the overall perceptions of speech-language pathology (SLP) students towards statements that reflect racial colorblindness?

The first research question investigated in this study asked about the perceptions of current SLP students in terms of colorblindness. Responses to the CoBRAS revealed that SLP students display low-to-moderate levels of implicit bias with respect to colorblindness. Majority

disagreement with colorblind statements is encouraging and suggests that, when presented a statement identified as racially colorblind by Neville et al. (2000), approximately 2 out of 3 SLP students in 2020 disagreed and identified these statements as unacceptable during personal and professional interactions.

Although the main findings of low-to-moderate bias amongst SLP students is encouraging, the responses were not uniform. Significant levels of disagreement were identified for statements related to Racial Privilege compared to other subscales. Students agreed with colorblind statements included on the Racial Privilege subscale 30% of the time and disagreed only 55% of the time. The statement with the highest average rating of the CoBRAS was part of the Racial Privilege subscale (Statement 6: *Race is very important in determining who is successful and who is not.*, $M = 4.06$ rating of 5). It is possible that respondents interpreted this question differently due to a non-specific definition of the term “race”. Nevertheless, higher ratings on the Racial Privilege subscale suggests that SLP students may be more likely to agree with similar statements that deny or minimize the existence of racial privilege, or that students are less aware of the negative implications of these statements to BIPOC students.

RQ2: Does agreement with colorblind statements differ between SLP students based on the respondents’ self-identified race (White versus BIPOC)?

The second research question posed asked whether there are any significant differences in perceptions between the groups (White vs. BIPOC) being assessed. It is important to note that the number of BIPOC respondents was low ($n = 16$, or 28% of 58 respondents [1 student did not identify race]). Nevertheless, results from student responses on the CoBRAS suggest that White students hold higher levels of implicit racial bias based on their attitudes toward colorblind comments. The largest, significant discrepancy was identified for statements pertaining to Racial

Privilege (White $M = 2.79$, BIPOC $M = 1.93$). Although average ratings for both groups did not exceed scale midpoint (3 – neither agree nor disagree with statements). This indicates that White students may agree with colorblind statements more often than their BIPOC peers.

It is also important to note that, although 63% of the time students disagreed with statements included on the CoBRAS, 37% of the time students either responded neutrally (indicated by a neutral score of 3) or agreed with the colorblind statements (indicated by 4-5; see Figure 1). Said another way, given the opportunity to reject colorblind statements, SLP students did not always identify the statements as harmful. As educators, this finding provides an opportunity for self-reflection of the messages we send (or forget to send) to students, either during our formal class lectures or informally as we converse with students outside of class or during clinical supervision interactions. This finding can also be used as a foundation from which to educate students in the future about implicit bias and potential blind spots in interactions with others. Specific statements from this survey, for example, could serve as an ideal focal point for active teaching activities within classrooms, wherein students role play (and reverse role play) field-specific scenarios in which colorblind statements may be likely to occur. By doing so, SLP students can be provided the opportunity to explore, rather than be instructed, why such statements may be ill-received by the opposite group (for detailed tutorial regarding active learning focusing on issues of cultural diversity in SLP classrooms, see O'Fallon & Garcia, 2023). Additional steps to successfully address colorblind racism within existing academic training programs, as described by Yu et al. (2021), include racial equity impact assessments (Annie E. Casey Foundation, 2014), wherein decisions that impact curriculum and training are guided by a series of equity-focused questions (e.g., Has the institution developed

specific values focused on anti-racism? Did stakeholders from all population groups who will be impacted by the proposed action participate in the development of the proposed action?))._

Limitations

Several limitations should be noted. First, only 18% of students completed the survey, even though 31% began it, indicating likely self-selection response bias. Second, despite patterns of response variability data in Figures 1 and 2 suggest otherwise, there is no way to confirm that social desirability did not play some part in student responses that were provided. Response variability, however, counters the researchers' initial concern that social desirability would dominate student response. That is, it was possible that all respondents would present themselves in the most favorable light, and in turn, respond unanimously with extreme disagreement to all statements³. Although the presence of colorblindness within SLP students should not be considered a positive outcome, it does provide a basis to begin, or continue, honest discourse within pre-professional training programs. Third, as noted, comparison of data from this survey to the standardized population reported by Neville et al. (2000) and subsequent studies using the CoBRAS is not possible due to differences in response scale. Although responses patterns from the present study cannot be directly compared to response patterns provided in the normative data, the directional trends regarding awareness of colorblindness by SLP students can be compared.

³ To address this potential concern from the outset, each question of the survey was accompanied by a 0-100 visual analog scale to allow respondents to rate how strongly they felt about their opinion. This was not a part of the original CoBRAS survey and were included by the researcher to provide response variance in anticipation that many, if not most, respondents would uniformly select the most socially appropriate response (i.e., *Strongly Disagree*). As observed after data collection, and as reported, response variation was not a concern. For these reasons, data from the visual analog scales were disregarded during analyses. We do, however, acknowledge that this likely prolonged the survey duration and impacted response rate.

Finally, as expected, an unfortunate limitation of this study is the disproportionately low number BIPOC students who completed the survey. The small number of BIPOC respondents is not ideal and, indeed, a byproduct of the problem of racial disparity within our field (ASHA, 2020). To be clear, the CoBRAS was established using normative data collected from a large cohorts of predominately White university students (Neville et al., 2000). In that respect, the racial disparity of the present sample is not dissimilar from the normative sample. It is possible that greater or unexpected between-group differences, or lack thereof, would emerge upon collection of a greater number of BIPOC respondents and from more than one university sample. Future studies are certainly warranted to further investigate implicit biases from larger, more diverse samples.

Conclusion

This present study surveyed implicit bias in speech-language pathology students using a questionnaire measure of racial colorblindness. Results suggested that although 63% of students did not endorse colorblind beliefs, a notable one-third of SLP students either endorsed these statements or held a neutral opinion about these statements. BIPOC students displayed lower levels of implicit bias based on their scores of statements on the CoBRAS. Although data indicating low-to-moderate levels of implicit bias found in this study are promising, responses were not uniform, and further education can potentially increase SLP students' awareness of implicit bias and colorblindness.

Acknowledgements

The authors would like to thank the participating university department for their willingness to examine the difficult topic of implicit racial bias. It is our hope that other departments take their lead and begin a similar process of self-audit. We would also like to thank

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The Effects of Mentorship with Speech-Language Pathologists of Color on the Professional Readiness and Emotional Support of Undergraduate Speech-Language Pathology Students

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Abstract

Background: A lack of emotional and professional support may be an obstacle to success for students in speech-language pathology. As students navigate the rigors of their academic programs, mentorship can provide opportunities for growth and development. This study investigated the ways in which undergraduate students were supported for further study and professional engagement in the profession after being provided with guidance from speech-language pathologists (SLPs) of color.

Purpose: Using mentoring theory (Ragins & Kram, 2007) as a lens for data analysis, this qualitative study explored the ways in which professional mentors of color and their undergraduate proteges developed bidirectional discourses to help make meaning out of academic and professional concerns.

Method: Eight undergraduate students, four self-identified White students (three women and one man) and four self-identified women of color were assigned to four female mentors of color. Participant interviews were employed to explore the ways in which students were prepared for future professional engagement following a short mentoring experience.

Findings: Data suggested that students had a better understanding of the importance of excelling within academic pursuits as a result of their mentors helping to make practical connections to academic knowledge. Participants reported greater appreciation for issues related to diversity, equity, and inclusion and how they affect the profession of speech-language pathology. They acknowledged that the mentoring program provided them with a safe space for related discourses related to diversity, equity, and inclusion. Finally, participants shared obstacles to effective mentor/protegee interactions (e.g., scheduling concerns) and the creative ways in which they were able overcome such concerns (e.g., technological interactions and virtual spaces for meeting).

Keywords: mentorship, diversity, equity, inclusion, SLPs of color

Situating the Study

When we first began our research, we planned to investigate the ways in which students of color could be effectively mentored by SLPs of color. Following our participant recruitment, however, a number of White students expressed their interest in being mentored. Embracing inclusion in its most fundamental form, we decided to match interested students with mentors. Our participating speech-language pathologists were eager to accommodate.

Half of our students self-identified as individuals of color and the other half self-identified as White. We wish to be transparent with our readers and acknowledge that our theoretical lens, mentoring theory (Ragins & Kram, 2007) was founded in work primarily exploring academic and professional support systems existing outside of a critical, racialized framework. We understood a need to understand how mentoring could be used to best support the needs of students of color. Although we make mention of mentoring research in a general sense, our literature review centers on the limited research that explores the implementation of mentoring our students of color. We believe that this topic deserves attention so that as a field, we can better understand the importance of professional mentorship. We argue that this can lead to greater diversity within our professional community by assisting in minority student recruitment and retention.

Our results and ensuing discussion reveal the value of incorporating effective mentoring into academic programs. Although our findings indicate that such support was beneficial for all students irrespective of racial and/or ethnic identity, we have noted race-specific differences in perceptions when they occurred. Comprehensively comparing these notions was not the focus of this project, despite this being an evocative and valid concern. Future studies can and should explore more in-depth contrasts between students and mentors when racial differences are noted.

Introduction

In the field of speech-language pathology, there are numerous culturally and linguistically diverse clients, yet there also exists a lack of diversity among clinicians and current speech-language pathology students (Rodriguez, 2016). According to the American Speech-Language-Hearing Association (ASHA), the updated 2020 *Profile of ASHA Members & Affiliates* found that 91.6% of ASHA member and nonmember certificate-holders in speech-language pathology identified as White (ASHA, 2021). Of the remaining individuals, 0.3% identified as American Indian or Alaska Native, 2.9% identified as Asian, 3.6% identified as Black or African American, 0.2% identified as Native Hawaiian or Pacific Islander and 1.4% identified as Multiracial (ASHA, 2021).

Scholars have noted that there is disparity among the support provided by clinicians and the needs of the clients of color (Alicea & Johnson 2021; Dwivedi, 2018). Additionally, they assert that there is a striking absence of students of color at the collegiate level in the field of communication sciences and disorders. Although a number of potential barriers impact the success of students of color in education, it also appears that many non-White students have an overall lack of exposure and knowledge about the field of speech-language pathology as well as audiology (Mahendra & Kashinath, 2022; Richburg, 2022). This lack of exposure may result in a lack of knowledge and apparent interest in the field, thus contributing to the lack of diversity in speech-language pathology as a whole. McCoy et al. (2015) suggest that this issue is further complicated by the fact that many academic programs appear to be race-neutral and employ colorblind ideology. They note this may contribute to problematic practices and perpetuate a lack of diversity in the field.

According to a recent survey about demographics in the field of communication sciences

and disorders (CSD), approximately 29.5% of undergraduate students and anywhere between 10.5% to 21.3% of graduate students identified as a racial or ethnic minority (Council of Academic Programs in Communication Sciences and Disorders, 2019). It is important that upcoming and current SLP students receive the support needed to better serve diverse clients.

Growing Population of Culturally Linguistic & Diverse Clients

Demographic changes within the United States have led to an increased need for SLPs to work with culturally and linguistically diverse clients (Narayanan & Ramsdell, 2022). Individuals who identified as being multiracial increased by 276% between 2010 and 2020, while individuals identifying as White decreased by 8.6% (Jones et al., 2021). Furthermore, it is estimated that more than 43% of children in the United States speak a language other than English in the home (Santhanam & Parveen, 2018). As a result of these shifting demographics, many clinicians are likely to interact with clients who have a linguistic and/or cultural background that differs from their own. Unfortunately, clinicians have reportedly been underprepared for working with clients of varying linguistic backgrounds and they typically lack clinical experiences with diverse populations while in graduate school (Maldonado et al., 2019). Taliencich-Klinger (2022) suggests engaging graduate students in clinical experiences early on with CLD populations in order to engage in culturally appropriate practice with increasingly diverse caseloads.

Santhanam and Parveen (2018) have noted that there has been a positive trend in the availability of educational resources for clinicians working with clients from culturally and linguistically diverse backgrounds. They suggest that there has also been an overall increase in clinicians' willingness and desire to work with this population. There is a continued need for more clinicians who come from culturally and linguistically diverse backgrounds to better

connect with clients from diverse communities.

Need for Representation in the Field

From the perspective of a student of color, the need for emotional and professional support may feel like an obstacle when it comes to navigating the field of speech-language pathology. In an opinion piece featured in *The ASHA Leader*, one clinician stated that, “*It seemed that the very things that attracted me to CSD—the opportunity to understand and celebrate diverse cultural and linguistic backgrounds—were absent from the field itself*” (Rodriguez, 2016, p. 1). As students of color navigate the difficulties of undergraduate and graduate school, Rodriguez further suggested that mentorship can provide opportunities for additional support. By supporting these students in their journeys toward their professional careers, we can better facilitate the inclusion of more diversity and representation in the field of speech-language pathology. In one study where students of color were interviewed regarding their pursuit of higher education, one student stated this regarding representation, “*They [teachers of color] care for me because I look how I do and because they do want me to do well...sometimes it is nice to have someone that represents you. You think, ‘I can do that,’ because you see someone who looks like you*” (Dwivedi, 2018, p. 22).

Concerns for Students of Color

Undergraduate students of color may benefit from direct mentorship from clinicians of color to help prepare them professionally and provide emotional support that would likely not be provided due to traditional higher-education pedagogies (Mahendra & Kashinath, 2022). Students in CSD programs are required to demonstrate knowledge and clinical skills in a variety of areas. The academic rigor associated with this mastery may further contribute to high levels

of stress at the undergraduate level. It has also been suggested that graduate students often experience anxiety related to taking tests, a high academic workload, clinical hour requirements, and the financial burden of being in higher education (Hyun et al., 2006).

A recent study that surveyed 126 students pursuing graduate studies in CSD, found that the financial burden inherent to graduate studies was a common barrier for those with low-income backgrounds (Fuse, 2018). Specifically, students of color who succeeded in getting accepted into a speech-language pathology major had support, internal motivation, and were financially stable (Dwivedi, 2018). Given the high stress levels and risks impacting success in graduate school, mentorship is a viable way to support students seeking a degree in speech-language pathology (Fuse, 2018; Mahendra & Kashinath, 2022).

Literature Review

What is Mentoring?

Mentoring is a powerful tool that creates opportunities for individuals to collaborate, share ideas, and help each other gain academic and professional skills. It can further be defined as “a developmental partnership through which one person shares knowledge, skills, information, and perspective to foster the personal and professional growth of someone else” (ASHA, 2023, para. 1). A mentor may be someone who provides academic guidance and encouragement. Additionally, they may also provide social support and general guidance beyond academic needs (Crisp, 2010). Mentoring is not a novel concept. In fact, one of the earliest documented mentoring constructs first appears in the years 2635–2595 BCE when a man named Imhotep, a master in numerous fields such as architecture, health, and education, provided tutelage and

support for a number of proteges (Wright-Harp & Cole, 2008). Today, mentoring can be seen throughout academic and professional preparation programs.

Current Research Related to Mentoring in the Field

Overall, current research related to mentorship by speech-language pathologists of color (SLPOCs) in the field of speech-language pathology is limited. Previous studies highlighted the benefit of community building between students of color and student-led initiatives to provide emotional support and a “safe place” (Alicea & Johnson, 2021; Girolamo & Ghali, 2021). It was also found that the presence of a college-educated role model positively impacted students’ success in graduate school, regardless of their varying backgrounds (Fuse, 2018). Research has indicated that providing structured mentoring for students of color was beneficial in supporting their advancement in the field of speech-language pathology (Mahendra & Kashinath, 2022; Wright-Harp & Cole, 2008).

Professional Readiness and Emotional Support

Academic support can typically be defined as the support a student receives that helps to increase their potential for academic achievement. One study defined academic support as the environmental resources available to a student throughout the school day at a university (Robayo-Tamayo et al., 2020). Measures of this type of support included the students’ perception of a professor’s perceived ability to encourage class participation during a lesson and the level of concern the professor had for the students’ academic performance. The study also found that when a student’s perceived level of academic support was high, they were more engaged in the classroom and learning process overall. For the purposes of this current study, academic support will be defined as, “the mentee’s perception of the mentor’s ability to provide them with

information about the field of speech-language pathology, as well as answer questions related to academics and the career as a whole.

Some scholars have used the term “emotional support” to mean demonstrating active listening skills as well as having an empathetic demeanor (Klyver et al., 2018). In more academic settings, teacher given emotional support has previously been measured by looking at the teacher’s level of sensitivity, regard for the students’ perspectives, and the ability to create a positive environment while promoting students’ autonomy (Romano et al., 2020; Ruzek et al., 2016). Of note, Ruzek et al. found that when teachers provided emotional support as defined above, students showed improved autonomy in the classroom. For the purposes of the current study, emotional support will be defined as the mentees’ perception of their mentor’s ability to provide empathy, foster positive interactions, share personal experiences and build a relationship with the mentee.

Importance of Advisement and Mentorship for Undergraduate Students of Color

Recent studies have started to highlight the experiences of undergraduate students of color and the barriers that impact their educational journeys (Allen, 1992; Boatman & Long, 2016; Dulabaum, 2016; Museus, 2009; Unverth et al., 2012). These common barriers include financial stress, reliance on financial aid with limited knowledge about resources available, lack of social support and various forms of racism faced in a higher education environment.

Dwivedi (2018) reported that having a solid foundation of emotional support can have a positive influence on a student and their decision to further their education. Students in this study noted that their cultural and linguistic background caused them to struggle with their identity and they were more reluctant to pursue a degree in speech-language pathology because of these

differences. One participant reported that connection to a mentor through a student organization provided the opportunity to learn more about the field of speech-language pathology through mentorship. Given the current absence of diversity in the field of speech-language pathology, there is much more that needs to occur in terms of recruiting and retaining students of color at both the undergraduate and graduate levels, such as increasing diversity among clinicians by engaging students in culturally diverse clinical experiences and classroom-based activities (Taliancich-Klinger et al., 2022).

It has been found that the type of mentorship provided to students of color may also be a barrier to their academic success. McCoy et al. (2015) noted differences that may exist between advising for students of color and their White counterparts as a result of “colorblind mentorship.” They posit that this phenomenon occurs when White faculty advisors insufficiently mentor students of color by ignoring topics related to race, thus creating distrust between the students and advisors. They further noted that better mentorship is needed for students of color in higher education. However, there is a lack of research related to how these students are impacted by the differences that they experience.

One study described an effective model for creating an affinity group and mentorship for underrepresented undergraduate and graduate students enrolled in speech-language pathology programs at predominately white institutions (PWIs) (Alicea & Johnson, 2021). This study emphasized the lack of diversity in communication sciences and disorder (CSD) programs, as only 29.5% of undergraduate CSD students identified as a racial or ethnic minority. The percentage falls between 10.5% and 21.3% at the master’s and doctoral level. By creating a group specifically geared towards supporting students of color in the field, students reported an improvement in levels of academic and clinical success and stress management. Furthermore,

students who participated in the program reported feelings of belonging to the CSD department and the institution as a whole. Students felt as though the affinity group provided a “safe space” where they could discuss their experiences as minorities. Similarly, student-led initiatives have been identified as a way to potentially support minority students in CSD programs (Girolamo & Ghali, 2021). Creating similar programs across other CSD departments could encourage diversity in the field and might help to support students of color pursuing a degree in speech-language pathology (Alicea & Johnson, 2021).

Due to the overall lack of diverse students and clinicians paired with the growing needs of representation of minority communities, providing appropriate mentorship is especially relevant. Mahendra and Kashinath (2022), designed a program providing structured mentorship to underrepresented students in the field. Participants consisted of undergraduate and graduate students who considered themselves to be underrepresented in the field of speech-language pathology. These students were then placed in one-on-one and small-group mentoring pairs with peer mentors, faculty, and SLPs in the community. It was found that participants found value in participating in a program that provided early exposure to prepare them for their career in health care. Specifically, it was found that students of color were able to better imagine a successful career trajectory for themselves.

Methods

Research Design

This project is a qualitative study of the effects of one-on-one mentorship with a speech-language pathologist of color on undergraduate students’ emotional support and professional readiness. The data for this study were collected through structured interviews that were

conducted virtually with various speech-language pathologists of color (SLPOCs) across the country and undergraduate students in the Speech-Language Department at SUNY Buffalo State University. Each one-on-one interview was conducted independently. Students and mentors were interviewed separately in an effort to eliminate their responses from informing others' reports. Participants were obtained following a criterion-based voluntary process. Due to the nature of this study, randomized subject selection was not utilized.

Participants

Participants included four ASHA-certified SLPOCs and eight undergraduate students majoring in speech-language pathology. Four of the mentees identified as students of color and four students identified as White. The mentee inclusion criteria included participants who were undergraduate students majoring in speech-language pathology. Mentee participants were all at least 18 years of age. The aim of this inclusion criteria was to identify participants who had an interest in the field and intended to pursue speech-language pathology as a career. Inclusion criteria for mentors included being an ASHA-certified speech-language pathologist and identifying as a person of color (POC). All SLPOC participants were licensed in their state of practice. All mentor participants had completed their graduate studies and Clinical Fellowships. The aim of this inclusion criteria was to identify SLPOCs who could provide appropriate mentorship to students desiring to become speech-language pathologists (SLPs). No consideration was given to age or sex for this study.

Potential mentee candidates were recruited by graduate student researchers through email communication and announcements during meetings for the affiliate chapter of the National Black Association for Speech-Language and Hearing at SUNY Buffalo State University. Potential mentor candidates were recruited by the senior researcher through email

communication and announcements on a social media group for alumni of the Speech-Language Department at SUNY Buffalo State University. Several individuals who initially expressed interest in the mentorship program never completed an initial interview.

Participants were provided with an informed consent form which was approved by the university's Institutional Review Board (IRB) prior to the initiation of the mentorship program. Verbal informed consent for recording purposes was established during the beginning of each interview. Participants were primarily matched based on their shared interest area(s) within the field of speech-language pathology. Availability was utilized as a secondary criterion for matching mentees to mentors. Pseudonyms were assigned to each participant to uphold privacy and anonymity during data analysis. All of the participants' names used throughout the study have been changed to ensure their anonymity.

Participants' Background

Mentee participants for this study consisted of eight undergraduate students enrolled in the speech-language pathology major at SUNY Buffalo State University. Of the eight total mentee participants, seven identified as female and one identified as male. The racial and ethnic backgrounds of the students are as follows: two African-American or Black mentees, one Asian mentee, four Caucasian mentees, and one Latinx or Hispanic mentee. The ages of the mentee participants ranged from nineteen to twenty-eight. The majority of mentees were between the ages of nineteen and twenty-one.

Mentor participants for this study consisted of four ASHA certified speech-language pathologists. All four mentor participants identified as female and as African-American or Black, with one also identifying as Latinx or Hispanic. The age of the mentors ranged from twenty-five

to thirty-seven. Specific demographic information for the participants in this study is displayed in the tables below.

Table 1

Mentee Demographic Information

Mentee Pseudonym	Age	Self-Reported Gender	Self-Reported Ethnic and/or Racial Identity
Blake	19	Female	Caucasian
Brianna	20	Female	African-American or Black
CeCe	21	Female	Caucasian
Courtney	21	Female	Asian
Logan	28	Male	Caucasian
Nayely	19	Female	Caucasian
Riley	19	Female	Latinx or Hispanic
Skylar	20	Female	African-American or Black

Table 2

Mentor Demographic Information

Mentor Pseudonym	Age	Years of Clinical Experience	Self-Reported Gender	Self-Reported Ethnic and/or Racial Identity
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Ivy	37	1 year, 5 months	Female	African-American or Black
Lisa	25	3 years	Female	African-American or Black
Opal	27	3.5 years	Female	African-American or Black; Latinx or Hispanic
Tori	29	4 years	Female	African-American or Black

Data Collection

Mentees who expressed interest in the mentorship program were provided with an Informational Intake Form. Specific questions for the participants in this study are displayed for the mentees in Appendix A and for the mentors in Appendix B. This form requested information about the availability of the mentee and potential areas of interest within the field. A similar form was provided to mentors, inquiring about their current field(s) of practice and area(s) of expertise. After analyzing the acquired information from each participant, potential mentees were paired with their potential mentors based on shared interest(s). In the event that shared interests were not identified between individuals, participant availability was prioritized when creating mentorship pairs.

Three one-on-one interviews were conducted with each participant, held separately from other participants, throughout the course of the study. This included an initial, midterm and final interview. The initial interviews were conducted prior to the initiation of the mentorship program. The midterm interviews occurred following the third meeting between each individual

mentor and mentee group. The final interviews were conducted at the end of the study. Each of these interviews were transcribed and coded for common categories. All interviews were conducted virtually through Zoom and were audio transcribed and recorded using Grain, an online audio transcription service. Specific questionnaires for the participants in this study can be found in the appendices of this article.

Following each one-on-one meeting between mentees and mentors, participants were instructed to complete a questionnaire on Google Forms. There were separate Google Forms provided to both mentees and mentors. Participants used their assigned pseudonyms when completing these questionnaires to maintain confidentiality and anonymity throughout this process. Each of these questionnaires were reviewed and coded for common categories. Specific questionnaire questions for the participants in this study are displayed for mentees in Appendix E.

The study was conducted over 6 weeks in the Spring 2022 semester. Each mentorship pair was required to meet one-on-one virtually for a total of seven times. Initial, midterm, and final interviews took place to record data throughout the progression of the study. Initial interviews took place in the month of January, prior to the beginning of the mentorship program. Midterm interviews took place in the month of March, following three one-on-one meetings between mentorship pairs. Final interviews took place at the conclusion of the study in the month of April.

Theoretical Considerations

The current study is grounded in mentor theory, which was proposed by Ragins & Kram (2007) as an expansion of Kram's work in 1983 regarding mentoring. Ragins and Kram (2007)

used mentoring theory to analyze data in their qualitative mentorship study. Mentoring theory is centered around various aspects of the relationship between mentors and mentees that lead to successful mentorship experiences. Mentorship can be structured in a variety of ways, including peer, formal, e-mentoring, group, leader and cross-organizational. E-mentoring stands for electronic mentoring primarily using email. It does not include video-calling platforms as noted in the context of this article.

When considering cross-race mentor relationships, several authors suggest that initiating interactions electronically may be helpful to avoid triggering stereotypes during the establishment of a relationship (Blake-Beard, 1999; Hall & Chandler, 2007; Ragins & Cotton, 1991). However, face-to-face interactions are considered optimal when continuing and developing a relationship. Factors like personality, race, ethnicity, gender developmental needs, career stages and relationship skills all influence the process and outcome of mentorship. The mentorship process usually occurs in mentorship episodes and may be based on developmental networks. These mentorship episodes can be defined as, “short-term developmental interactions that occur at a specific point in time” (Fletcher & Ragins, 2007, p. 662). Establishing a mutual and reciprocal relationship is also an essential component of mentorship. This occurs when both parties engage in bidirectional discourses that are perceived as equally beneficial (Russell & McManus, 2007). Challenges to mentorship may include minor problems such as poor communication, ranging to significant problems such as sabotage that damages the mentorship relationship. Other authors reported that mentorship pairs with complimentary personality traits were predictors of a successful outcome (Turban & Lee, 2007). It has been suggested that mentors entering a new stage in their career may be less able to help a mentee enter a new cycle in their career simultaneously (Hall & Chandler, 2007).

Several authors have posited that in cross-racial mentoring relationships, individuals of color may be expected to exhibit and assimilate to the behaviors of the dominant culture (e.g., Cherniss, 2007; Ragins & Kram, 2007). Behaviors that are expressed based on a non-majority culture are prone to be viewed as incorrect or indicate a deficit. The authors indicate that mentored interactions should be viewed as opportunities to facilitate emotional and social competencies required to successfully negotiate a diverse workforce.

Cherniss (2007) noted that mentors can serve as emotional role models. A mentor's ability to show compassion, empathy and care may allow for a deepened mentor-mentee relationship (Boyatzis, 2007). The process of mentorship is also likely to focus on work-life balance. Ragins and Kram (2007) noted that, "there may be a cyclical process in which the achievement of work-life balance in one partner changes norms and facilitates a spiraling process of reassessment that leads to more balance in the life of the other member of the relationship" (p. 666).

Although past literature has been focused on more measurable outcomes such as increased job performance and job advancement, several authors have expanded the outcome measures of mentorship to include aspects such as personal skill development, personal identity growth, relationship job learning, and personal adaptability (Allen et al., 2004; Lankau & Scandura, 2002; Lankau & Scandura, 2007; Noe et al., 2002; Ragins & Kram, 2007). Mentorship outcomes involve high levels of personal development that may be expressed as growth in self-esteem, self-confidence, self-identity, psychological success, adaptability and self-awareness (Hall & Chandler, 2007).

There are many personal factors that contribute to mentorship outcomes such as mutuality, reciprocity, personality, and stage of development and stage of career of both parties.

Cross-race mentorship can be beneficial if stereotypes are examined and managed appropriately throughout the mentorship process. Challenges that arise from mentorship may be a result of poor communication or a personality mismatch. Mentors are likely to serve as emotional role models and may encourage growth in nonwork areas such as work-life balance, self-esteem, and identity growth. These antecedents to mentorship are critical to consider since each of these factors and topics greatly influence each mentoring relationship.

Data Analysis

Transcription

The interviews were transcribed and recorded using the online audio transcription service, Grain. Each transcript was reviewed to consensus among both researchers to ensure accuracy before coding for notable categories. Some utterances were debated before reaching unanimity while others were marked as being unintelligible with the symbol “XX” when the utterance could not be determined.

Coding

The data in this study were generated using principles of grounded theory outlined by Glaser and Strauss (1967). Grounded theory is an approach to qualitative research which allows researchers to make connections based on common categories that emerge from collected data (Glaser & Strauss, 1967; Neuman, 2006). After data were collected and transcribed from mentee and mentor interviews, codes were created and organized into emerging categories. The process of coding is defined in the following quote from Maldonado et al. (2019):

“... as researchers explain, interpret, and provide meaning to the data, new theoretical ideas are formed and explored. In the current research study, the transcripts and field

notes generated by the participant interviews constituted a mass of data, which were then analyzed for organization into categories via a process known as coding” (p. 6).

Triangulation

Triangulation is a process that helps to verify findings from qualitative research. Previous research noted that analyzing the data from the varied perspectives of multiple researchers allows categories to appropriately emerge during the coding process (Denzin, 1978). We engaged in triangulation by including four mentors and eight mentees of differing backgrounds and perspectives in our study. Each participant completed an initial, midterm, and final interview, resulting in three different interviews for each participant. Each of the interview responses was reviewed and coded, resulting in several central categories that emerged based on the range of responses. Each participant was required to fill out a questionnaire on Google Forms after each mentorship meeting, equating to six questionnaires for each participant. The data from the questionnaires investigated the research questions and added another level of crystallization. Saturation occurred when a common theme emerged across a multitude of participants. Following the analysis of data points into categories, the different viewpoints were organized based on their significance to the current study. The collaboration of several authors from varied racial, cultural, and gender-based backgrounds helped to enhance trustworthiness of the data analysis.

Results

The use of open-ended interview questions allowed participants to craft unique and unguided responses focusing on their experiences throughout the mentorship program. As previously discussed, data were transcribed and then analyzed using a grounded theory approach.

The following table provides an overview of the categories, themes, and sub-themes developed from the data. A more comprehensive presentation of the data follows.

Table 3

Thematic Analysis

MENTORING'S IMPACT ON PROFESSIONAL READINESS
<ul style="list-style-type: none"> ● Bridging the gap between theoretical construct and clinical application <ul style="list-style-type: none"> ○ Supporting academic knowledge and professionalism ○ Providing resources and materials to aid in growth/understanding
<ul style="list-style-type: none"> ● Cultivating culturally and linguistically diverse perspectives <ul style="list-style-type: none"> ○ Engaging in DEI-related conversations ○ Serving culturally and linguistically diverse clients
<ul style="list-style-type: none"> ● Supporting knowledge about a variety of clinical settings and practices <ul style="list-style-type: none"> ○ Engaging in discussion regarding ASHA's Code of Ethics and HIPAA laws
<ul style="list-style-type: none"> ● Providing advisement related to the timeline of educational pursuits (e.g., graduate school application and Clinical Fellowship Year)
MENTORING'S IMPACT ON EMOTIONAL SUPPORT
<ul style="list-style-type: none"> ● Fostering a personal connection with a professional in the field <ul style="list-style-type: none"> ○ Sharing mentors' personal experiences and challenges
<ul style="list-style-type: none"> ● Developing a sense of belonging in SLP programs <ul style="list-style-type: none"> ○ Challenging imposter syndrome ○ Cultivating the presence of a safe space for challenging conversations
<ul style="list-style-type: none"> ● Making connections related to personal struggles and support <ul style="list-style-type: none"> ○ Emphasizing the ongoing importance of mental health
<ul style="list-style-type: none"> ● Relieving stress by providing reassurance
BARRIERS TO EFFECTIVE MENTORSHIP
<ul style="list-style-type: none"> ● Acknowledging limited representation of SLPOCs in the field <ul style="list-style-type: none"> ○ Discussing mismatch between client population and clinicians providing services
<ul style="list-style-type: none"> ● Recognizing goodness of fit within mentor and mentee relationships <ul style="list-style-type: none"> ○ Identifying difficulties related to personality and varying levels of understanding ○ Overcoming limited engagement by the mentees ○ Scheduling and time management
<ul style="list-style-type: none"> ● Brokering meaningful conversation related to difficult topics

-
- Approaching conversations related to diversity, equity, and inclusion (DEI)
 - Creating a safe space for mentees and mentors
 - Demonstrating understanding of a variety of topics
 - Overcoming a lack of face-to-face interaction (virtual interactions only) with mentorship pairs
-

Existing Support

Academic Support & Professional Readiness

Results from our study revealed that students felt varying degrees of support from their academic faculty members. Although most students reported their appreciation for the concerns and efforts of academic faculty members, one participant expressed feeling more supported by their family than academic mentors. Several participants expressed that they felt supported in the CSD program, especially following the changes in instruction in the wake of the COVID-19 pandemic. Logan stated that, *“I feel like if I need support...it's there for me. If I have any questions, people are willing to, like, hear me out and listen, and to answer the questions that I have.”* The return to in-person instruction was found to be beneficial in supporting academics of undergraduate students. However, several participants noted the desire to be more supported by academic instructors in the program. Participants noted feeling separation between students and professors and the absence of supportive relationships. Brianna stated, *“I just think that I'm not that close with any of my professors, like, that in a way...we could be supported more by the teachers.”* Participants discussed uncertainty in their knowledge of course material, resulting in anxiety related to furthering their academic pursuits. Courtney stated that, *“I'm really nervous and anxious that I'm not prepared enough.”*

Emotional Support

Interview data from the mentees offered insight into the participants' level of emotional support currently experienced before the mentorship program began. Students appeared to feel the most supported by their family, social events on campus, as well as some sense of community with peers. Brianna noted that familial encouragement was her most significant source of support, stating:

I would definitely say my family. Um, they support me in, you know, helping me get through college and always, you know, saying little things like, "Oh, I'm proud of you and keep going," and things like that. I think I just feel very supported within my family and that also gives me the drive to actually, you know, go forward with college and make something of myself, you know?

Another student shared her perspective on viewing her classmates as a form of community by discussing how encouraging it is to learn alongside others in her class. In contrast, some students also expressed that they did not feel emotionally supported by their advisors and professors. After becoming frustrated with her academic advisor's lack of emotional support and belief in her ability to succeed as a speech-language pathology major, one mentee said she used her academic roadmap (i.e., a departmental publication that provided step-by-step instructions related to graduate requirements and course order within the undergraduate curriculum at SUNY Buffalo State University) independently and was hesitant to visit her advisor again. Brianna expressed her desire for a deeper connection and level of emotional support with her professors, stating that there's "*never been that much of a time to bond with them.*"

Motivation for Mentorship

Many mentees expressed the desire for hearing about their mentors' experiences in the field and learning from them. This is what Courtney had to say about her hopes for the program:

Gaining knowledge, gaining wisdom from the SLP and, um, just getting this opportunity to ask them any questions that I have or any concerns, um, you know, going forward and just kind of get[ting] a feel of how things have been for them in the field and their experiences, their ups and downs, and really just getting to know them as a person and an SLP and everything they've gone through.

Many mentees also stated that they wanted to learn more about the profession and viewed the mentorship program as a way to become connected to the field by connecting with their mentor.

Mentees shared their desire to learn about specific sites such as a medical setting, since the classroom material at the undergraduate level is typically more focused on the educational side of speech-language pathology. CeCe stated her motivation for participation in this way: *“I decided to participate...because I love the field of speech therapy and I'm always excited when there's an opportunity to learn and become more immersed in the field.”* CeCe also cited the opportunity to learn from an SLPOC in particular by saying, *“I also chose to participate in this program to broaden my views on different backgrounds and diversities [sic] that will help me treat patients better in the future.”* Riley, who self-identified as a POC, also stated her excitement regarding being mentored by an SLPOC by stating, *“I think diversity is great, like having diversity and, you know, also working with women and I think...that'd be a good thing to have too.”* Mentees expressed participation in this mentorship program for a variety of reasons such as gaining academic knowledge and resources, making a connection to someone in the field, and having an opportunity to learn about a POC's experience in the field and diversity in client populations.

Expectations of Professional Knowledge

Academic Support & Professional Readiness

Among mentee participants, several categories related to topic-specific interests were identified as expectations of academic knowledge to gain through participation in this mentorship program. Several participants expressed a desire to learn about the medical field. They were particularly interested in treating clients with aphasia and traumatic brain injuries (TBIs). Other participants looked to the mentorship program as an opportunity to fulfill unanswered questions related to the field, exemplified by Courtney's comment:

Just getting this opportunity to ask them any questions that I have or any concerns, you know, going forward and just kind of get a feel of how things have been for them in the field and their experiences, their ups and downs, and really just getting to know them as a person and an SLP and everything they've gone through.

Overall, mentee participants desired to make a connection with someone who was already in the field and to learn from their experiences as practicing clinicians. Nayely spoke about gaining a better understanding of the daily responsibilities of the profession, by stating the importance of building a relationship “*with somebody who's already working in the field, like present day, to be able to go to them and ask like, 'Okay, in this specific situation, what are you doing?'*”

Several participants expressed interest in learning from the perspective of an SLPOC, specifically as an avenue to diversify perspectives as future clinicians. Logan, a White man, discussed the importance of working with an SLPOC to help him better support his future clients by stating the following:

I think their experiences are really valuable, especially with the populations that we would be working with and begin to have their point of view and maybe what they experienced, like what they've seen in their work or growing up and all of that.

One mentee expressed her desire to see an actual therapy session with a client in order to learn more about what would be expected from her in the future. Furthermore, all mentee participants discussed that having a connection with an SLPOC mentor in the field would provide them with the opportunity to learn from the mentors' first-hand experiences in the profession.

Emotional Support

Mentees desired guidance and support from their relationship with their mentor in hopes of growing their connection over time in the program. On this topic, Courtney said: *“The knowledge and wisdom from the mentor, and just building those strong connections and foundations where you can grow with each other both personally and professionally and just learning all there is about the field.”* Skylar hoped that this mentorship program could serve to connect them to a mentor who could help them become more comfortable with being an SLP major and *“give me the inside scoop as to what goes on, like, so I'm more comfortable.”* Lastly, mentees commented on the desire for things to get easier as they progress to becoming speech-language pathologists, and the desire to learn how to advocate for themselves and for their clients in the future.

Role of Mentor

Mentees mentioned many characteristics about mentors that they greatly appreciated. In particular, several mentees viewed their mentor as being someone who could serve as a connection to the field, being someone who has already successfully navigated an academic

program in speech-language pathology. Blake said she wanted, "... *advice from a person who has been, you know, who has gone through what I'm going to have to go through.*" Blake also stated the following regarding conversations with her mentor:

She'll explain her day-to-day life and explain it in great detail... I think when I see it being explained to me day by day, step-by-step what she does throughout the day, it makes it really easier to visualize that this is what I want to do. So, I think that's been the most influential part of it for me, and she explains it in such great detail that it's like, "Oh, I can, like, see." Like, envision it in my mind quite well.

Many mentees reported their mentor being willing to answer their questions and listen to their concerns. In fact, being able to answer questions about the field was one of the most common roles that the mentors fulfilled, according to the mentees. A few mentees also mentioned their mentor helped them reach their academic and career goals while growing in professionalism. Lastly, many mentees stated that they viewed their mentor as someone who would provide encouragement and resources for them at the undergraduate level. One of the mentors incorporated more visual resources, such as graphics and short posts on Instagram, since her mentee had voiced her preference for visual materials as a visual learner.

Professional Readiness

Professional Aspects of the Field

Several of the mentees wanted to learn about different clinical settings in the field of speech-language pathology. Many mentees mentioned learning more about the medical setting in particular, since most of the classes at the undergraduate level are more focused on the educational side of the field. Nayely noted that the "*most influential [part] would just be how*

much we've talked about, like the medical setting... she's really piqued my interest in it a lot more than I was already interested in it." Several mentees commented on receiving information about unfamiliar clinical settings throughout conversations with their mentors. Similarly, Blake shared this about her mentor:

She's just been really insightful about the medical aspect of this, which I want to work in. So, and I've been learning a lot of great things that I think it's better to know from a person who's actually working in the medical side of this rather than just reading it in our textbook or something.

Mentees also learned more about clinically based information from their mentor's experience, usually in a variety of clinical settings. Along with that, a few mentors shared their "real-world" challenges that they have faced as SLPOCs in the field clinically. Skylar said, *"It's always nice to like know what we will go through. Like, you know, it's not always going to be like peaches and cream, rainbows and sunshine."* Some mentors also shared about how they interact with their clients by building rapport and emphasizing the importance of family/caregiver training into their therapy. Mentees were also informed about various aspects of professional development and professionalism. An example of a professional issue that was covered by one of the mentors includes going over ASHA's Code of Ethics (2015) and talking with the mentee about the importance of using a client's initials instead of a client's full name in order to stay in compliance with the Health Insurance Portability and Accountability Act (HIPAA, 1996). A mentor also mentioned the importance of building rapport with professors, and also building rapport with clients in the future as well and comporting oneself in a professional way with professors. One mentor specifically addressed how to write professional emails to professors and how to conduct oneself in class appropriately. Additionally, mentors provided specific

educational materials about ASHA and information about professional conferences, such as the NBASLH National Conference. One mentor even shared information about student scholarships for the conference and encouraged her to apply while also sharing information about the conference itself.

Academic Support

Mentors also provided mentees with various forms of academic support throughout the mentorship program. Some of the mentors provided additional information and resources beyond class material, tutored studies in specific subject areas, answered questions about class material and helped mentees with building their resume. Logan even appeared to primarily view his mentor as a source of academic knowledge and support by saying, *“If I had trouble finding resources, she guided me in that direction to find the correct resources so I can get some homework done.”* Many mentees reported that their mentor supported them academically by helping with projects as well. The mentees also asked their mentors many questions related to academic topics. When reflecting on the fact that the mentees have many questions, Ivy connected it to the profession by saying: *“Asking questions is something that has to be done in the field as well. So, you need to be comfortable now asking questions because later on you're going to have to do parent interviews. You're going to have to feel comfortable being face-to-face and getting that case history.”* This mentor provided insight for the mentees into the importance of professional engagement with clients and their families.

A few mentors also offered to review their mentees' resumes and offer changes in order to appear more professional and prepared. The mentors also emphasized the need for excellence in academic performance at the undergraduate level. Tori in particular stated:

I also really reiterated to them to like, while they're in undergrad and then...into grad school, like, treat this as a job. Like, this is your job...this is your main focus. Kill it. We are getting A's and A-minuses and that's it. I was telling them, I'm like, you need to, number one, you need to shoot for the stars with A's and A-minuses because you need to know your stuff...Number two, I was saying to them once you guys get into grad school, the lowest you could get is a B. If you get anything lower than a B, you're going to have to keep doing stuff over and over again and remediating quiz [sic], tests, homework, et cetera. Who's trying to do all that all over again? So, just know your stuff. Get it right.

This mentor in particular outlined the expectations that students would be held to in graduate school, and she encouraged them to obtain the highest level of success possible in their current classes to prepare for the future. Mentors also provided academic support by challenging the mentees to actively participate in class with both their professors and their peers. Specifically, a few mentors talked with their mentees about how to interact with their professors and peers in a professional manner. Ivy even suggested code switching when she said, *“I hope I helped them with understanding that the language that you use when you're with your colleagues and, you know, um, your professors is very different from the language used, you know, code switching and stuff when you're with your family or friends. So, just being mindful of being professional overall and trying to stay within those [sic] Code of Ethics.”* Mentors helped guide the conversations with their mentees towards topics related to professionalism and provided academic support in several areas.

Mentors Bridging the Academic Gap

Mentors often embodied the role of a teacher when interacting with their mentees. By providing clinical information and sharing their own experiences in the field, mentors were able

to give academic material a clinical application. The mentees often commented about the benefits of hearing their mentors' real-life experiences. Logan noted that:

I find myself, like, every week, that I learn something new in my classes. So, um, whenever I learned something but kind of, like, have a question about it, but forget to ask the professor or something, um, or thinking about it later. Uh, I just ask her during the week. I make a list. It's been good. She's been answering those questions for me.

Blake even expressed her hesitancy to ask professors questions, and how her mentor was able to take on that role in some capacity during their mentorship meetings. She stated:

So, it's like either you have to do the research on your own or talk to the professor. But like, it's like, you don't even know where to go with that, even know how to start doing the research. So, it's like I'll just ask her a question and then she'll be like, "Oh, I do that all the time. I do that every day." Um, you know, yesterday. I asked her, "So how do you do the oral mech exam?" because like there's different ways of doing it. She was like- she did it step-by-step and, like, she actually showed me how she does an oral mech exam, which was, like, amazing.

Courtney mentioned her lack of experience talking with a professional in the field by reporting:

I would say, just the most influential portion of this program is being able to talk to like a professional in the field. I haven't really had the chance to do that one-on-one yet, I haven't had that opportunity to get to know what it's really like to be in the field. So, it's just really nice to get that, that other side of that perspective. I haven't gotten that, so it's just cool to know what I'm working towards basically.

Courtney also commented that having a connection between her current academics and being a future clinician has been beneficial for her by saying she now has:

Insight about, like, the writing that I'm doing in language acquisition right now...and like communication as far as, like, how that's going to relate when we get into the field. Like, what I'm gonna have to use those skills that I'm learning in both of those classes.

Brianna also mentioned that her mentor reviewed the ASHA website with her and explained things that, “*she learned outside of the class that she didn't get taught in class and that, like, actually in the field that she learned.*” These experiences have been invaluable for her when it comes to making the connection between class material and being a speech-language pathologist.

Blake stated a similar sentiment when she responded to what the most influential part of the mentorship program was by saying,

I would say, just the enthusiasm that my mentor had for her job and, like, with her clients and, like, you could tell, like, she really, really likes being an SLP. You know, she isn't there just for the paycheck. She is, like, she was telling me, like, you know, different trick[s] she does for certain things, you know, things that she does with her job, um, you know, explaining how...little things that you wouldn't learn from a textbook, from, like, an actual person with experience. So, I think that, and her telling me her experience makes me not so afraid, I guess of the field. So, yeah, that was pretty influential.

The mentors also noted that they felt sharing their personal experiences in the field would be beneficial to their mentees since, “*It's not always going to be as black and white as a textbook.*”

Overall, the mentors greatly saw the value in connecting their mentee's studies with their own experience. Ivy shared this by saying, “*I think the fact that in our field, we do need to come*

together maybe a little more and just help those starting out and not just think that the book work and the lectures are enough.”

Graduate School and Beyond

Mentees were also curious about many aspects of graduate school including graduate school applications, coursework, and the expectations overall in graduate school. When reflecting on her mentee’s desire to know more about graduate school, Tori said that her mentee:

“...really appreciates, like, me giving her a heads up on things that she wouldn't know, whether, you know, she wouldn't know, unless it came from somebody who went through it kind of thing. Because she was even asking about, like, how things go. Like, ‘When do we do our internships? When do we do classes? Uh, do you have to do classes and internships at the same time?’ et cetera, et cetera. I told her about the comps, research and master's project, the difference between those and you know, how one of those is required to graduate and things like that. So, she definitely did express gratitude, like, ‘Oh, thank you so much because I wouldn't have known, you know, any of this.’”

Moreover, many mentees also asked their mentors about the trajectory to becoming a speech-language pathologist including getting into graduate school, completing graduate school, completing the clinical fellowship year and beyond. Courtney said this about her conversations with her mentor, *“I think with her just being able to tell me like her experiences throughout it and like what grad school looked for her and her CF and where she's worked thus far and her experiences, I guess that's helped me kind of get an idea a little bit of like the field in general from somebody else's perspective.”* Several mentors also shared their own personal experiences about graduate school being competitive and stressful at times. One mentor reviewed the

requirements of the specific graduate program the mentee was applying to, and she guided her through the general application process as part of their meeting. In general, mentees asked many questions related to what graduate school would look like, and they asked their mentors about their specific experiences.

Emotional Support

A consensus among several participants was the role of rapport when establishing relationships within their mentees. Courtney stated, *“The first time we met, it was kind of just a “introducing each other” kind of getting to know each other...just so we were more comfortable.”* Similarly, a mentor participant stated that they emphasized *“...trying to build that rapport and get an understanding of what, you know, kind of emotional support you can give to them.”* Mentee participants reported that they appreciated having someone who endured similar academic experiences to listen to their concerns. Notably, Courtney also stated:

I was just telling her how it's really nice to have somebody to talk to about these things and someone to be like [listening] with you about everything. Just being able to talk about some of the struggles I've had so far going through my education. It's been really nice. She offered a bunch of advice and things that could help me...

Similarly, mentees reported enjoying having somewhere to talk about mental health exemplified by CeCe stating, *“She wants to make sure that I'm still keeping my mental health in check too which is, I feel, really important. So, it's really nice to have that when I haven't always received that from professors or teachers and stuff.”*

When discussing emotional support related to graduate school, mentors discussed providing counseling throughout meetings. Specifically, mentees reported that conversations

with mentors were beneficial in humanizing the field and providing support, especially throughout the initial application process. Opal discussed the role she took on when addressing her mentee's anxiety related to graduate school and progressing into their professional careers:

[I] like easing their concerns about, like, grad school and, like, real life...like, these girls or guys, whoever, are just, like, stressing out over things that are, they're trying to do, like, two, three years from now. Um, so I was just, like, telling them, like, how, like, the real world works and if, like, someone like me, who's, like, a Type B can navigate in this world, like, it's going to be okay. Like, everything's going to be fine. Um, so I think I liked that part and I feel like it. You know, the feedback that I got it. It's nice for them to talk to someone who is, like, in the field.

Meetings were used to facilitate such discussions centered on easing concerns related to clinical experience and gaining a better understanding of practicing within the field, according to several participants.

Challenges to Successful Mentorship

Throughout the mentorship program, challenges related to meaningful conversations, connection between mentor and mentee pairs, and personal differences were identified by both mentee and mentor participants. Several participants expressed a desire for more structure and guidance in topics of conversation. Brianna stated, “[Sometimes] I don't even have any questions, or how can I keep this going? That's kind of like the little ‘struggle.’” Mentors expressed a similar concern related to mentee engagement and its impact on their own participation in the program. Opal expressed, “I think the engagement really affects, like, how much, like, I gave as well.” This mentor went on to detail the inconsistencies between her

relationships with her two mentees as she felt more involved with the mentee who reciprocated her engagements.

Mentors identified goodness of fit and personality as factors that also impacted their relationships with their mentees. Notably, one mentee participant reported difficulty initiating conversations related to race due to their racial mismatch. Some mentors reported that their mentees' willingness to initiate conversation and prepare questions would impact the flow of meetings. Ivy explained that while differences may exist in one's level of extroversion, there is still the potential that not everyone is "*open to [mentorship] or has a full understanding of what mentorship is.*"

The mentors' own knowledge and experience in the field was identified as a challenge when mentees desired to know about aspects of the field outside of mentors' area(s) of expertise. Similarly, the mentors' past experience in their educational and professional careers may differ from what was presently experienced by their mentee(s), creating a disconnect in shared experiences. Mentors specifically noted a difference in their own graduate school admission experiences compared to that of their mentees. Many mentor participants reported a need to be competent in several areas (e.g., academics, social engagement, emotional support, etc.) to appropriately support the needs of their mentees.

In terms of structure of the mentorship program, some participants expressed a desire to meet in person, citing that some methods of communication (e.g., texting, FaceTime) were more effective than others (e.g., trying to meet in person). Scheduling was an area of concern for some mentorship pairs, resulting in missed meetings and a prolongation of the program beyond the initial 6-week requirement. One mentor spoke of an instance of rescheduling a meeting due to distraction and a lack of enthusiasm from the mentee.

Use of Technology

The use of the technology was paramount to the success of this study, given that virtual platforms were used to broker the mentorship conversations throughout the program. Opal recommended many resources in a virtual form with one of her mentees who had specifically voiced concerns with learning from other materials since she was a visual learner. These virtual resources included informative Instagram posts/videos, podcasts, and YouTube videos. At least one mentee and one mentor met virtually using the iPhone platform FaceTime, as this was most convenient for her mentees. Most mentees noted that their mentors were available at any time for questions, and most mentors provided their personal phone numbers so that the mentees could text them. One mentor preferred contact through email as opposed to texting. Mentees tended to ask questions, confirm meeting times, or reschedule meeting times over text. In comparison, one mentor in particular used the texting platform to confirm logistics while also supporting them emotionally. This is what Blake had to say about her mentor's communication:

I think I feel supported because...she'll be texting me, like, throughout the week like, "How's the week going?" She'll want to know how my classes are. Not just like my speech classes, like my other classes and, you know, she wants to know like, "Oh, is there anything interesting that you learned in your speech classes?"

Both mentees and mentors cited the frequent use of technology to continue communicating with each other throughout the week, and not just merely during their one hour a week mentorship session. When the mentees were asked if there was anything they would like to see changed in the mentorship program, there was a mix of responses in terms of technology. Many noted the benefits of technology such as convenience and being able to communicate with someone who is

in a different location. However, mentees also voiced the desire to meet their mentor in person. Riley noted the following:

The only thing I would change is maybe in person, if we could do it in person. I mean, online is good...at first I did think it was in person and I was like, "Oh, that's cool I get to meet someone in the same time zone" and then I found out it was on Zoom and I was like, "Okay," but it's not that bad 'cause I think the past two years of COVID I got used to, like, stuff being on Zoom."

Other resources included PowerPoints created by the mentors and other professionals, articles, informational handouts, and Instagram posts/videos. The mentors used a variety of technological platforms and resources to support their mentees both academically and emotionally, along with using a virtual space to conduct weekly mentorship sessions. Overall, the use of technology appeared beneficial to this program.

Diversity, Equity, and Inclusion

Representation of diversity in the field of speech-language pathology is critically important, and mentees of color reported a significant lack of diversity in their educational careers. These students were eager to share their own experiences within their academic programs. They positioned themselves within these narratives as being "othered" and as outsiders. Courtney reported:

I have grown up most of my life in America. You know, I do look different than my peers and people growing up, and so that diversity factor always kind of played a role in my life and it was kind of hard to sometimes be supported in that sense, just because I didn't have people around me that understood. You know, looking different can be enough...to make

you feel like you're different than other people around you. So, yeah, just the diversity aspect, having representation in the field itself.

Statements such as this were frequently made by all participants of color. They seemed comfortable having these discussions and understood that their racial backgrounds were an integral part of who they were. Reports of isolation within academic and clinical programs were commonplace. They were easily initiated and openly discussed. When such discourses were noted within the recorded interviews, participants of color generally focused on their own lived experiences as people who had been marginalized within their professional community and society, more globally.

Although less frequently occurring, several White students were interested in diversity, equity and inclusion in the field. It should be noted that these discussions generally centered on these topics as professional issues or abstractions. They were not situated within their own lived experiences, nor did they share any of their personal encounters with racism, prejudice, or subjugation.

Nayely reported that she had conversations regarding allyship and diversity in the field and referenced an Instagram Reel where a White SLP invited an African American SLP and an Afro-Latina SLP to talk about racial discrepancies between colleagues and patients. Nayely stated:

We...took a few days and just talked about that and like allyship and...I learned a lot of things that I hadn't seen before, and I think that'll really help in my career so I could be a better co-worker and better SLP in general.

Logan expressed the desire to know more about “difference versus disorder,” especially when evaluating clients who speak African American English. Logan’s mentor sent him a resource about how to recognize the features of that specific language. Logan also asked how to converse with family members about the languages and/or dialects they speak to better inform therapeutic practice. A meaningful exchange detailing the importance of honest and open communication between clinicians and their clients ensued.

White students in this study also articulated the benefit of developing their own cultural humility through a brokered relationship with an SLPOC. Nayely stated the benefit of having a mentor of color by saying, *“I honestly liked the whole thing how it was. I especially liked how, um, it was specifically from- with someone who is a person of color. I thought that was really good, especially so you can, like, see different perspectives.”* Courtney expressed her desire to know more about, *“why there’s a lack of diversity in the field and what could be done about it.”* She also expressed her desire to explore issues related to diversity in the future by saying:

I would say this is kind of more like, focused on the promoting diversity aspect...this is my personal interest, but what like ASHA and what the profession of SLP can do kind of to promote diversity and support those who are, um, financially disadvantaged and like how they can help them. So, that, like, finances aren’t really, like a make or break when deciding whether or not you want to pursue SLP. So, I think that’s kind of interesting to think of and like what can be done to kinda go forward with that.

Mentorship As a Success

Overall, numerous factors were identified as contributions to identified success within mentorship pairs. SLPOC mentors reported using meetings with mentors as an opportunity to

provide information related to professional information in the field. Several participants noted that successful mentoring was contingent on bridging the gap between academic and practical knowledge. When asked about the most influential portion of this program Courtney stated speaking to a professional who is already in the field gave her *“the opportunity to get to know what it’s really like to be in the field.”*

Consistent meeting times were identified as an important aspect of maintaining strong relationships, even beyond the requirements of this mentorship program. Several participants reported exchanging personal contact information with the expectations of maintaining the connection established through this process. In order to continue such conversations informally, the use of email and texting were identified as beneficial means of communication. One mentor expressed their pride in seeing their mentee accepted into graduate school and supporting them in their future endeavors. Opal, in reference to what they hope to see as their mentees progresses as a professional, stated, *“To me, like, if the mentees don't want to keep pursuing speech, that's totally fine because, you know, I just want them to be happy, like, with their decision as a person. Um, and I think this will help them decide.”*

Throughout the program, the importance of established mentorship pairs was highlighted as a critical factor in outcomes. Tori expressed that despite differences between herself and her mentees, she believes that established a connection with one another and valued *“the flexibility that we have in how we can kind of make it our own as a mentor.”* In addition, mentors spoke to the self-reflection that occurred based on the connection that they established with their mentees. Opal stated this in relation to her relationship with their mentees, *“Um, so it's helping me see, like, how, like, what my own strengths and weaknesses are. Um, and, like, figure out my own feelings around, around like the SLPs and my job and clinical practice and all this stuff.”* Lisa

described this experience as being “*enlightening,*” stating that, “*There definitely was a lot of, like, self-reflection, um, kind of stepping out of my comfort zone, talking about different things. So, I feel like overall, it has helped me grow as a person.*”

Goodness of fit between mentorship pairs was expressed to be a significant aspect of a successful experience with Ivy stating:

I mean, I just feel like, um, you guys did a good job as far as like, you know, I know that probably was hard with matching and I also feel like, I mean, I don't know if that was intentional, but giving me two different mentees on two different levels, maybe to see, you know, um, I just feel like that was good because it allowed me to see the needs of someone at different levels and kind of their thought process too, during that. So, I think that was pretty, um, good that I was able to see two different sides of a coin in a sense.

The informational intake forms (Appendix A and Appendix B), which were provided to participants at the beginning of the mentorship program, were referenced as an integral part of supporting the relationship between mentees and mentors. Brianna, a mentee participant, stated, “*I think that [the informational intake form] was a good idea because y'all gave me a good person to work with, because our- I guess, like, our answers probably kind of aligned. So, I think that like, definitely should still be the initial step...that is taken in this process.*” Building relationships was expressed by participants as a contribution to success with Courtney stating:

So, overall, I'd definitely say that I had a really great experience with my mentor. Um, so myself and my fellow mentee and mentor, we were all able to ask questions and, you know, kind of express our feelings and concerns about a lot of things, which was really great. Um, because it allowed us to kind of, you know, work through the topics that we were talking

about and issues that we brought up together, which was really great. Um, because it allowed me to like, hear their perspectives as well and then consider on- later on.

Riley expressed, *“It was nice getting to meet a new person and now, I have, like, somebody else I could connect to, you know, and could relate to someone who already went through, like, what I’m going through. So, I think overall the experience was, like, it was nice.”*

Discussion

Professional Readiness

Mentees benefitted from many aspects of the mentorship program relating to professional readiness and academic support. Mentors addressed information relating to topic specific interests. These interests stemmed from class material for most of the mentees, while some had questions about information not yet covered in their class material depending on their specific stage in the undergraduate program. Mentees overwhelmingly cited their interest and perceived benefit in hearing their mentor’s everyday clinical experiences in the workplace. Specifically, these interactions were beneficial in bridging the gap between their current academic knowledge and how they will use that knowledge in the field. Undergraduate programs should consider more ways to incorporate a mentorship program or access to speech-language pathologists as mentors. Although some professors are still practicing in the field, there also appeared to be a trend that students felt more comfortable asking their mentor questions than their professors. This may be due to the one-on-one nature of the program, and the unique accessibility and approachability exhibited by the mentors.

Many mentees were unfamiliar with the timeline to becoming an SLP, and some were unfamiliar with the requirements for graduate school. Those who were familiar with graduate

school requirements were often intimidated and anxious about the process of applying and feared rejection from graduate school. It is recommended that undergraduate programs continue or start to educate their students about the timeline and requirements for graduate school by providing information about it early on in their studies so that they can prepare appropriately.

The Code of Ethics appeared to be a helpful framework for the guiding topics provided to all participants and this information was new to many of the mentees. Applying concepts from the Code of Ethics in class material and a mentorship program should be considered for future use. Many mentors also commented on the lack of professional skills some of the mentees exhibited such as writing emails, interacting with professors, and engaging during class. Early training regarding professionalism and professional development should be considered, especially for students first entering their studies at the undergraduate level.

Emotional Support

Many important conversations relating to emotional support were noted by both the mentees and the mentors. Mental health was of particular interest and was talked about by every mentorship pair at some point during the six-week program. Mentees cited their appreciation for their mentors listening to any concerns and checking in with them on a regular basis. Many mentees also noted the various benefits of having their mentor ask them how they are doing overall, and even having short conversations about topics unrelated to speech-language pathology. This holistic approach taken naturally by mentors was well received by all mentees.

Self-care strategies were also covered by many of the mentors, and some of the mentors encouraged the mentees to develop their own plan on self-care. This included activities such as taking a break, taking a walk outside, organizing events using a planner, going shopping or

spending time with friends and family. This encouragement to, “allow you to feel like you're one with the world for a second, and you're not just consumed with all work” was noted highly among the mentees as a form of emotional support. It is recommended that undergraduate programs and mentorship programs should place a greater emphasis on acknowledging mental health concerns while also implementing mental health strategies and counseling for their students. Similar personalities between the mentee and the mentor pairs were also cited as contributing to the success of mentorship overall. Ragins and Kram (2007) also wrote about the benefits of complementary personality styles that may contribute to successful mentorship. Continued consideration for pairing mentees and mentors based on similar clinical and personal interests is considered.

Implications for the Field

Students' level of emotional and financial support from family and their school system as a whole, as explored by Dwivedi (2018), is an area of concern. The students of color in that particular study all discussed their previous experiences with microaggressions and blatantly racist comments made throughout their educational pursuits. These various experiences negatively impacted the participants' sense of self and their belief in their ability to succeed. However, all three participants were able to continue their pursuit of education through family support and belief in themselves.

Similar to the previously mentioned study, students in this mentorship program voiced their varying levels of support in their undergraduate educational experiences. Throughout the mentorship programs, participants expressed feeling supported in their relationships with their mentors. Specifically for the mentee participants of color, interacting with a successful SLPOC encouraged them in their own educational and personal pursuits. As students of color in CSD

programs have historically had difficulty with being provided with safe spaces within their academic programs, mentorship with SLPOCs may provide necessary support (Abdelaziz et al., 2021; Alicea & Johnson, 2021). The inclusion of SLPOCs in mentorship roles could potentially affirm the experiences of students of color and lead to more conversations related to diversity, equity, and inclusion (DEI). Notably, conversations related to diversity involving White students were infrequent. These discourses primarily focused upon a lack of racial diversity within the field rather than addressing issues of violence or (micro)aggression perpetrated against people of color. Additionally, these brief conversations were clinically-oriented in nature (e.g., discussing the observable dialectal variations associated with different speakers), rather than focused on sociological or philosophical considerations of injustice experienced by members of marginalized communities. White students appeared to lack the personal experiences associated with acts of racial discrimination to actively engage these conversations like their fellow students of color. Although a more comprehensive analysis of these data using a critical and racialized lens is of significant interest, it falls outside the scope of this current paper. We freely acknowledge the importance of this topic and we hope that future research endeavors will explore this issue in greater depth.

Brokering conversations related to DEI may be difficult for a number of reasons. Particularly, when a racial mismatch occurs between a mentee and a mentor, as discussed in McCoy et al. (2015), it may lead to difficulties in establishing and maintaining an effective relationship. CSD students may be hesitant to engage in conversations when they feel uninformed about DEI topics, especially at an undergraduate level. As seen in this study, students often waited until their mentor prompted these conversations. However, this phenomenon leaves the responsibility of starting “uncomfortable” conversations entirely to the POC. Among students

of color and SLPOC mentors, the initiations of conversations related to diversity seemed to occur more organically, leading us to consider how this can impact the future of cultural responsiveness in our field. Encouraging SLPOCs to share their experience and provide guidance may prompt an initial movement towards connectivity, although the responsibility of being a culturally responsive clinician must fall on the individual clinician. Training can be provided to support engagement and growth in such conversations among all individuals, not just people of color. The inclusion of DEI-related conversations directly into undergraduate CSD programs may assist in encouraging allyship in the field of speech-language pathology.

Limitations of the Study

During the recruitment process, 11 potential mentees were initially recruited for the program. However, three of the potential mentees expressed their inability to commit to the program prior to the start date, resulting in eight remaining mentees in total. Additionally, seven potential mentors initially expressed interest to the senior researcher via email. Ultimately, four mentors responded to the initial recruitment email and confirmed their participation in the mentorship program.

Throughout the interview process, both mentee and mentor participants requested the addition of a structured curriculum to the mentorship program. A list of guiding topics, structured based on ASHA's Code of Ethics (2015), was provided at the onset of the mentorship program. This resource was provided as a point of reference however, weekly conversation topics were determined by each individual mentorship pair. The structure of this program was intentionally designed to provide mentorship pairs with autonomy over their mentorship experience. Mentee participants expressed a desire to have a more active role in what content was discussed during their meetings. While mentor participants expressed a desire to have more guidance regarding

what topics they should discuss, as they felt as though the responsibility to facilitate meetings and conversation was based solely on them.

Communication barriers also existed with both the mentors and mentees throughout the mentorship program. Varying levels of inconsistent responses and response times led to a change in timeline of the program at the mid-way point by delaying the end of the program by a week. Additional follow-up was needed for several of the mentees by the researchers which was a limitation. Mentees were contacted primarily through email. However, in some cases, mentees were contacted through texting or a private message through the online application GroupMe when needed due to lack of response through email. Mentors were contacted through email only and did not have as much of a variety of response times.

Directions for Future Research

Throughout the mentorship program, a few ideas were suggested as ways to continue the mentorship program in the future. Although all participants were provided with a guiding topics sheet (see Appendix F) at the beginning of mentorship, a few participants also noted that having a more extensive list of topics would be helpful to guide the conversation. More structure related to the topics of conversation was a common theme. A list of topics related specifically to speech-language pathologists in educational settings that differ from questions related to a medical setting may also be helpful. One mentee Brianna noted specifically that during some mentorship meetings she would have a difficult time coming up with relevant questions to ask her mentor. Opal suggested a training for all participants relating to roles and responsibilities before starting the mentorship program to build more of a “foundation” for starting the process of mentorship. Some participants also proposed having a virtual orientation with all of the program participants and hearing about the variety of work settings and clinical experiences of the mentors.

Participants then may reach out to several mentors based on their setting of interest so each individual mentor's experience does not limit the type of information the mentee is seeking. Exploring the effects of group mentorship with more participants in the program overall may also be beneficial. Requiring participants to sign a weekly commitment to meeting may also help reduce scheduling and rescheduling concerns regarding the mentorship meetings. Some mentees expressed the desire to meet their mentor in person and shadow their mentor at their place of employment for a day as part of the program. Given the current study, this was not possible since most of the mentors were out of state. However, having the mentees shadow one or two local SLPs during the course of the program may be considered. Further analysis of differences in conversations related to DEI amongst White mentees and mentors of color should also be explored. Lastly, implementing a similar mentorship program for an entire academic year or longer is also a suggested area for future research.

Conclusion

The participants in this study expressed that participation in this mentorship program resulted in a positive growth in feelings towards professional readiness and emotional support. Mentee participants expressed the benefit of connecting with someone who could provide them with real-world experience related to the field. Intentional discourses related to diversity, equity, and inclusion and its impact on SLPOCs happened variably across mentorship pairs.

Relating to previous studies, researchers found that when undergraduate students were mentored by professional mentors of color, bidirectional discourses developed, which supported the mentees both academically and professionally. The mentors intentionally initiated conversations related to diversity, equity, and inclusion during the mentorship process and related these topics specifically to the field of speech-language pathology. The data showed that mentors

employed many strategies to facilitate these conversations such as role modeling, acceptance-and-confirmation, counseling and fostering a relationship with the mentees, which was first suggested by Kram (1983). Future advancements in the field should seek to include the experiences of SLPOCs to support ongoing cultural responsiveness and education for all individuals in the field of speech-language pathology.

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Appendices

Appendix A

Mentee Informational Intake Form

1. What year are you in the speech-language pathology undergraduate program?
2. Are you interested in working in a particular setting in the future (Education, Medical, Pediatrics, Geriatrics, etc.)? If you are unsure, what would you be interested in learning more about at this time?
3. Do you have any specific areas in the field of speech-language pathology that you would be interested in learning more about?
4. What do you like to do in your free time?
5. Please list your availability to meet with your mentor, including the days and/or times that work best.

Appendix B

Mentor Informational Intake Form

1. How many years of clinical experience do you have?
2. What settings have you worked in (Educational, Medical, Pediatrics, Geriatrics...etc.)? What setting do you currently work in?
3. I would like to be paired with a student(s) who _____. (Fill in the blank with what interests you hope the mentee has)

4. Do you have any specific clinical experiences that would be of particular interest to a student?
5. What do you like to do in your free time?
6. Please list your availability to meet with your mentee, including the days and/or times that work best.

Appendix C

Mentee Interview Questions

Initial Mentee Questions	Midterm Mentee Questions	Final Mentee Questions
<p>Why did you decide to participate in this mentorship program?</p>	<p>What are your experiences with the mentorship program thus far?</p>	<p>What have your experiences been with the mentorship program overall?</p>
<p>What are your expectations for this mentorship program?</p>	<p>How would you describe your mentor’s engagement in the program this week?</p>	<p>How would you describe your mentor’s engagement in the program overall?</p>
<p>How prepared do you feel to become an SLP in the future and why?</p>	<p>What has been the most influential portion of this experience thus far and why?</p>	<p>What has been the most influential portion of participating in this mentorship program and why?</p>

What would you still like to learn about the field of speech-language pathology and why?	Are you satisfied with your mentorship experience? If not, what would you change?	How has this mentorship program helped you learn more about the field of speech-language pathology?
On a scale of 1-10 (1 being “Not at All,” 10 being “Always Supported”), how supported do you feel in this program? Why or why not?	On a scale of 1-10 (1 being “Not At All”, 10 being “Always Supported”), how supported do you feel by your mentor? Why or why not?	Is there anything else you want to know that was not covered by your mentor?
What has contributed to your feelings of support thus far?	What ways can they support you more effectively?	How has this program helped you feel supported as an undergraduate student?
In what ways do you feel you want to be supported?	How has your mentor contributed to your knowledge about the field of speech-language pathology?	What other ways do you wish that you could be supported in the program?

What do you anticipate gaining from this mentorship program?

What else would you like to know about the field of speech-language pathology?

Overall, has this program impacted your thoughts towards professional readiness or emotional support? If so, please explain.

On a scale of 1-10 (1 being “Not At All”, 10 being “Always Support”) how supported did you feel by your mentor? Why or why not?

Is there anything you felt went particularly well and you would like to keep in the mentorship program and why?

Are you satisfied with your mentorship experience?

Is there anything that you would like to see changed in the mentorship program in the future?

Appendix D

Mentor Interview Questions

Initial Mentor Questions	Midterm Mentor Questions	Final Mentor Questions
Why did you decide to participate in this mentorship program?	What are your experiences with the mentorship program thus far?	What have your experiences been with the mentorship program overall?
What are your expectations for this mentorship program?	How would you describe your mentee's engagement in the program this week?	How would you describe your mentee's engagement in the program overall?
What would you like to educate students about related to the field of speech-language pathology and why?	What has been the most influential portion of this experience thus far and why?	What has been the most influential portion of participating in this mentorship program and why?
On a scale of 1-10 (1 being "Not at All," 10 being "Always Supported"), how supported do you feel in this field? Why or why not?	Are you satisfied with your mentorship experience? If not, what would you change?	How has this mentorship program helped you learn more about the field of speech-language pathology?
What has contributed to your feelings of support thus far? (Further Explaining Previous Rating Scale Question)	On a scale of 1-10 (1 being "Not At All", 10 being "Always Supported"), what is your perceived level of support for your mentee based on your interactions so far? Why or why not?	How has this mentorship program helped your mentee learn more about the field of speech-language pathology?
In what ways do you want to support your mentee(s)?		How has this program helped your mentee feel supported emotionally as an undergraduate student?
What do you anticipate gaining from this mentorship program?	What ways can you support them more effectively?	How has this program helped your mentee feel supported professionally as an undergraduate student?
		Overall, has this program impacted your thoughts towards professional readiness

How have you supported your mentee(s) in their professional readiness related to the field of speech-language pathology thus far?

How have you supported your mentee(s) in their emotional support related to the field of speech-language pathology thus far?

or emotional support? If so, please explain.

On a scale of 1-10 (1 being “Not At All”, 10 being “Always Support”) what is your final level of perceived support for your mentee and why?

Is there anything you felt went particularly well and you would like to keep in the mentorship program and why?

Are you satisfied with your mentorship experience?

Is there anything that you would like to see changed in the mentorship program in the future?

Appendix E

Mentee Questionnaire Questions

Please indicate what you have experienced from your mentorship meeting this week.

Mentor Questionnaire Questions

Please indicate what you have experienced from your mentorship meeting this week.

On a scale of 1-10 (1 being “Not at All,” 10 being “Greatly Impacted”), how has this mentorship meeting impacted your emotional support? Why or why not?

How have you facilitated emotional support through your mentorship meeting?

On a scale of 1-10 (1 being “Not at All,” 10 being “Greatly Impacted”), how has this mentorship meeting impacted your professional readiness? Why or why not?

How have you facilitated professional readiness through your mentorship meeting?

Note. All questionnaires were conducted using Google forms.

Appendix F

Mentorship Guiding Topics

- American Speech- Language-Hearing Association (ASHA) Code of Ethics
- Evidence Based Practice (EBP) Triangle
- ASHA Big 9 Areas of Treatment
- Evaluation & Treatment Procedures
- Appropriate & Fair Treatment of Clients
- Interprofessional Collaboration
- Difference vs. Disorder in Patient Diagnosis
- Professionalism in the Workplace
- Work & Life Balance
- Mental Health

- Experiences of Mentor in the Field
- Academics & School Work
- Timeline of Becoming an SLP
- Links
 - [https://www.asha.org/code-of-ethics/#:~:text=The%20four%20Principles%20of%20Ethics,competence%3B%20\(III\)%20responsibility%20to](https://www.asha.org/code-of-ethics/#:~:text=The%20four%20Principles%20of%20Ethics,competence%3B%20(III)%20responsibility%20to)
 - <https://www.asha.org/research/ebp/>

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An Investigation of the Differences in Phonological Awareness Performance Based on Cognitive Style

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Abstract

Purpose: Research in cognitive style has shown its relevance in predicting reading ability. However, its effect on phonological awareness, which plays a central role in reading acquisition, remains unclear. The purpose of this study was to investigate differences in phonological awareness based on cognitive style.

Method: Twenty-nine monolingual English speaking African American and Caucasian 6-year-old 1st grade students from the Washington DC metropolitan area participated in the study. Participants were distributed as follows: 11 females, 18 males, 21 African Americans, and 8 Caucasians. Participants were of middle-class socioeconomic background with no evidence of cognitive, language, phonological, articulation or hearing deficits. Testing occurred over two sessions scheduled on different days. During the first session, participants were individually administered the Cognitive Style Assessment Protocol (CSAP) to measure cognitive style and assigned to either the wholistic or analytic cognitive style group. In the second session, the Phonological Awareness Assessment Protocol (PAAP) was administered to measure the main components of phonological awareness. Raw data consisted of participant scores on the CSAP and PAAP. Data were analyzed using two-tailed t-tests to determine if there were significant group differences between the analytic and wholistic groups in phonological awareness and its components.

Results: Results showed that students with an analytic cognitive style performed better than those with a wholistic cognitive style on overall phonological awareness and on the following phonological awareness components: syllable segmentation, phoneme substitution, and phoneme blending. No significant group differences were found on rhyming, phoneme isolation, phoneme deletion, and phoneme segmentation tasks.

Conclusion: Findings showed some differences in phonological awareness between analytic and wholistic students with analytic students performing better than wholistic students. These differences in aspects of phonological awareness seem to implicate cognitive style in reading acquisition given the central role that phonological awareness plays in reading development and suggest that wholistic students may experience reading difficulties that stem from their cognitive orientation.

Keywords: cognitive style, phonological awareness, reading, early detection, diversity

Introduction

Reading is the fundamental skill upon which all formal education depends. When a student masters reading, they have built a foundation on which they can learn any academic content. A student that struggles with reading will likely have difficulty achieving academic success, have a higher risk of failing grade-levels, and is more likely to have diminished occupational success (NRP, 2002). Gaining a better understanding of why some students struggle with reading helps facilitate the development of effective remediation strategies that can lead to improved academic and occupational outcomes for at-risk students.

Phonological awareness and cognitive style are two factors that are thought to play a role in reading acquisition. Phonological awareness is the general ability to attend to the sounds of language as distinct from its meaning. It involves the conscious ability to detect and manipulate sounds and access to the sound structure of language (NRP, 2002). Cognitive style is a psychological construct that describes an individual's preferred and habitual approach to organizing and representing information which shows up in perceptual or intellectual activity (Riding & Rayner, 1998). It addresses how an individual learns, perceives, thinks, and problem solves (Simpson, Portis, & Weiseman, 1994). Understanding differences in phonological awareness based on cognitive style can help in developing effective reading interventions.

Phonological Awareness and Reading

Betourne and Friel-Patti (2003) identified three component skills important in a student becoming a good reader: word attack, word identification, and comprehension. Word attack is the ability to sound out unfamiliar words; word identification involves the rapid access of phonological and semantic information to recognize familiar and unfamiliar words; and

comprehension utilizes the student's knowledge of the text's subject, their narrative and syntactic competence, and the ability to recognize familiar words and decode those that are unfamiliar. To varying degrees, all these skills rely on knowledge and use of phonological information. Ehri et al. (2001) suggested that students can decode words in five different ways depending on their reading competency: (1) assembling letters into a blend of sounds; (2) pronouncing and blending familiar spelling patterns; (3) retrieving sight words from memory; (4) analogizing to words already known by sight; and (5) using context cues to predict words. Students learn to read words in all five ways as they become skilled readers with early reading involving assembling letters into a blend of sounds. Students must know how letters typically symbolize sounds in words to be able to blend the sounds of letters into pronunciations that approximate real words, a process that involves letter knowledge and phonological awareness.

Phonological awareness is a critical prerequisite for word decoding although it is not a sufficient condition. Research (Goswami, 2003; NRP, 2002; Sprugevica & Hoiem, 2003) shows that phonological awareness is one of the predictors of the speed with which students acquire reading accuracy and fluency. Phonological awareness is now recognized to play a causal role in the acquisition of literacy; the presence of good phonological awareness has been associated with good readers and reduced awareness with poor readers (Hulme et al., 2012; Goswami, 2003; NRP, 2002).

Understanding Cognitive Style

Examples of cognitive styles through the years include Field Independence-Field Dependence, Leveling-Sharpening, Reflection-Impulsivity, Converging-Diverging, Holist-Serialist, Assimilator-Explorer, Adaptor-Innovator, Verbaliser-Visualizer, and Wholistic-Analytic and Verbal-Imagery. The variety of style labels is largely a result of researchers working in their

own contexts in isolation from one another, developing their own instruments for assessment, and giving their own labels to the styles they were studying with little reference to the work of others (Riding & Rayner, 1998). Evidence (Miller, 1987; Riding & Cheema, 1991; Riding & Rayner, 1998) suggests that these different cognitive style labels are simply different conceptions of the same dimensions which Riding and Cheema (1991) conceptualized as the wholistic-analytic and verbal-imagery cognitive styles. According to this model, the wholistic-analytic and verbal-imagery cognitive styles are discrete cognitive styles that lie on a continuum independent of each other. Position on one cognitive style does not influence position on the other. The wholistic-analytic cognitive styles reflect the way in which a student organizes information, either in parts or as a whole. Although students can use either a wholistic or analytic way of organizing information, there is an inherent preference to using one over the other (Riding & Cheema, 1991). Table 1 shows the functional differences between wholistic and analytic students.

Table 1

Psychological Characteristics Associated with Analytic and Wholistic Cognitive Styles (Adapted from Cohen, 1969)

Analytic	Wholistic
Sensitivity to parts of stimuli	Sensitivity to global characteristics of stimuli
Awareness of obscure, abstract nonobvious features of stimuli	Awareness of obvious, sensed features of stimuli

High ability to detect changes in monotonous but constantly changing perceptual field over a long period of time	Low ability to detect changes in a monotonous constantly changing perceptual field
Extracts from embedded context, names extracted properties and gives meaning in themselves	Parts are not named and not given meaning in themselves

Evidence (Perney, 1976; Ramirez & Castaneda, 1974) suggests that students may differ in their cognitive styles because of cultural differences. Members of some cultures tend to be analytic, while those of other cultures tend to be wholistic because of culture-specific socialization practices that encourage the development of one cognitive style over the other (Witkin & Goodenough, 1986; Ramirez & Castaneda, 1974). Cole and Scribner (1974) observed that a student's method of perception, memorization, and thinking are inseparably bound to the patterns of activity, communication, and social relations of the culture in which the student is socialized. Ramirez and Castaneda (1974) suggested that African Americans and Hispanic Americans are likely to be wholistic while Caucasians are more likely to be analytic. Perney (1976) showed that African Americans were significantly more wholistic than Caucasians. Preference for a wholistic cognitive style was also shown among fourth grade Mexican American students (Rameriz, Castaneda, & Herold, 1974).

Cognitive Style and Reading

Understanding the role of cognitive style on phonological awareness is important because of the central role that phonological awareness plays in reading acquisition. Several studies have looked at the impact of cognitive style on learning and educational attainment, providing some

evidence that cognitive style may be related to reading (Davies, 1994; Davies, 1988; Kirchner-Nebot & Amador-Campos, 1999; Paramo & Tinajero, 1990). Davies (1988) suggested that students with the analytic cognitive style might be better than those with the wholistic style in certain areas of the reading process that require visual restructuring. Using a lexical decision task, Davies (1994) concluded that analytic students appear to favor a phonological route to reading while wholistic students preferred the use of visual strategies. Kirchner-Nebot and Amador-Campos (1999) reported a relationship between cognitive style and reading that was gender specific. Cognitive style had no effect on the reading scores of girls, while analytic boys tended to be faster and more accurate readers than wholistic boys.

Although studies (Paramo & Tinajero, 1990; Kirchner-Nebot & Amador-Campos, 1999) have shown that wholistic and analytic cognitive styles are related to overall reading ability, with analytic students performing better than their wholistic peers in reading, there's no research examining the performance of analytic and wholistic students on phonological awareness. A few studies (Davies, 1994; Davies, 1988; Widiger, Knudson, & Rorer, 1980) have looked at the effect of cognitive style on tasks that somewhat involve phonological awareness. On tasks requiring the detection of short words embedded in longer words, Widiger et al. (1980) found that analytic students performed better than wholistic students. Davies (1994) obtained similar results and noted that analytic students appear to favor the use of phonological versus visual reading strategies.

Rationale for the Present Study

The study investigated the differences in phonological awareness based on cognitive style to better understand the possible genesis of reading difficulties experienced by some students and help explain reading differences among some groups of students. A review of characteristic of

the wholistic-analytic cognitive styles outlined in Table 1 suggests that students with the analytic cognitive style may be better suited to the psychological and cognitive demands of reading than those with the wholistic cognitive style. For example, reading requires a progressive shift in speech perception from larger units (words and syllables) to segmental (phonemes) units (Jusczyk, 2000). Analytic students appear to be more sensitive to parts of stimuli, an important quality in acquiring greater understanding of the phonological units of speech. Reading also requires the student to understand that the alphabet is a symbol system for sounds, understand the nature of words and how written words consist of letters that map to speech sounds, and that words are the building blocks of phrases and sentences. This expanding awareness of language requires abstract thought. An ability that favors analytic students whose greater awareness of obscure and abstract features of stimuli is likely to facilitate the abstraction necessary to connect oral to written language. Regarding wholistic individuals, the tendency to devalue linear concepts might be an impediment to reading acquisition since word decoding and speech segmentation are founded on linear identification of strings of letters and phonemes. Comparing the cognitive characteristics of analytic and wholistic students to the phonological skills necessary in reading acquisition suggests that students with an analytic cognatic style may be better equipped to acquire reading compared to their wholistic peers.

Method

Participants

Twenty-nine 6-year-old first-grade students attending elementary school in the Washington DC Metropolitan Area participated in the study. All students were monolingual speakers of English with a middle-class socioeconomic background determined by their non-eligibility for the free or reduced-price lunch program. It was also a requirement that the parents

of participants be native English speakers. The language requirement allowed for the control of effects on phonological awareness that may be associated with second language exposure, acquisition, and/or use. Participant criteria also required that all students be typically developing with no evidence of cognitive, language, phonological, articulation or hearing deficits.

Information regarding typical development was provided by the classroom teacher. Participants were distributed as follows: 11 females, 18 males, 21 African Americans, and 8 Caucasians.

Participants were selected to include students belonging to the two cognitive styles, wholistic and analytic. Students ranged in age from 6 years and 3 months to 6 years and 9 months.

Materials

Cognitive Style Assessment Protocol

Students were administered the Cognitive Style Assessment Protocol (CSAP) to measure cognitive style. The CSAP consisted of the complete Children's Embedded Figures Test (CEFT; Karp & Konstadt, 1971) and select stimuli from the Cognitive Styles Test (CST; Kagan, Moss and Sigel, 1971) and the Sigel Cognitive Style Sorting Task (SCSST; Sigel, 1967).

The CEFT consists of 24 complex figures, each with an embedded familiar simple shape. Students were instructed to find the embedded shape and awarded one point for each shape that was correctly identified. A total score was computed. A high score on the CEFT indicated an analytic cognitive style, while a low score indicated a wholistic cognitive style. The CEFT was selected to measure cognitive style because it is a widely used test of the analytic-wholistic cognitive styles. It is standardized for children ages 5 to 9 years and offers high reliability (Karp & Konstadt, 1971). Saracho (1984) showed split-half reliability of 0.90 and test-retest reliability of 0.91 for first and third graders. The test has been shown to meet the criteria for construct

validity by demonstrating age differentiation and convergent and divergent validity (Glynn & Stoner, 1987).

A criticism of the CEFT as a measure of cognitive style is that it measures only one pole of a bipolar construct (Riding & Rayner, 1998). To address this, items from the CST and SCSST were included as supplemental measures. The CST and SCSST were selected because they measure both poles of the analytic and wholistic cognitive styles (Witkin, 1973 and Kagan et al., 1973). Eight items of the CST and four items of the SCSST were included in the CSAP. Each item consisted of three drawings. Students were asked to select two of the figures that were alike or went together in some way and justify their selection.

To be assigned a wholistic or analytic cognitive style, a student's performance on the CEFT had to be consistent with their performance on the 12 items of the CST and SCSST. A student with a low score on the CEFT had to produce a predominance of wholistic versus analytical responses on the CST and SCSST items to be coded as having a wholistic cognitive style. A student with a high score on the CEFT had to produce a predominance of analytic versus wholistic responses on the CST and SCSST items to be coded as having an analytic cognitive style. Failure to show such consistency indicated inability of the CSAP to reliably identify the student's cognitive style. These students were excluded from the study.

Phonological Awareness Assessment Protocol

To measure phonological awareness, the Phonological Awareness Assessment Protocol (PAAP) was administered. The PAAP consisted of select subtests of the Phonological Awareness Test (Robertson & Salter, 1997) that measure the main components of phonological awareness, namely: rhyme, syllable segmentation, phoneme isolation (initial, medial, and final positions),

phoneme deletion, phoneme segmentation, phoneme substitution, and phoneme blending. Seven of the nine PAAP subtests assessed phonemic awareness because it is a strong predictor of reading acquisition. They included the following tasks: 1) phoneme isolation, which required the student to identify the sound in a particular position of a spoken word, 2) phoneme substitution, which required the student to mentally replace a sound in a word by another to make a new word, 3) phoneme segmentation, in which the student was asked to break a word into its component sounds, and 4) phoneme blending, which involved the student combining sounds that were spoken separately into a word.

Procedure

Students were individually administered the CSAP and PAAP over two sessions scheduled on different days. Test administration was conducted by the researcher. To minimize the risk of students missing valuable class time, the researcher worked with classroom teachers to make certain that testing time did not take away from classroom instruction time. This included scheduling testing during noninstructional time and arranging for students to receive compensatory instruction. Administration of the CSAP allowed for classification of students as wholistic or analytic. The CSAP was administered during the initial session and the PAAP during the subsequent session. Students whose cognitive style could not be reliably classified were excluded from the study. Final distribution of participants resulted in 20 analytic and 9 wholistic students. Student PAAP testing order was randomly assigned.

Rapport was established with each student before testing. The examiner ensured that each student fully understood task directions and performance expectations by providing appropriate reinforcement, repetition, and clarification. On average each test took approximately 30 minutes to administer.

Raw data for the wholistic and analytic groups consisted of students' scores on the PAAP. Data were analyzed using two-tailed t-tests to determine if there were significant analytic-wholistic group differences in phonological awareness and its components. A significance level of 0.05 was used for rejection of null hypotheses.

Results

Table 2 shows the performance of analytic and wholistic student in phonological awareness and its components.

Table 2

Phonological Awareness Performance by Cognitive Style

Test/Subtest	Analytic		Wholistic		<i>t</i> (27)	<i>p</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
PAAP Composite	70.2	13.1	53.7	19.5	2.7	.01
Rhyming	8.8	2.0	6.3	4.3	2.1	.04
Syllable Segmentation	8.8	1.7	6.2	2.7	3.0	.006
Phoneme Isolation-Initial	9.5	1.1	9.3	0.7	0.5	.61
Phoneme Isolation-Medial	8.0	1.7	6.7	2.8	1.5	.15
Phoneme Isolation-Final	7.6	2.1	6.2	2.3	1.6	.12
Phoneme Deletion	7.5	2.1	5.7	3.4	1.6	.12
Phoneme Segmentation	5.6	2.5	3.8	2.8	1.7	.11
Phoneme Substitution	5.6	2.6	2.9	2.0	2.7	.01
Phoneme Blending	8.8	1.5	6.2	3.3	2.8	.009

The students' PAAP Composite performance examined the effect of cognitive style on overall phonological awareness. Findings showed that analytic students scored significantly higher than wholistic students ($t(27) = 2.7, p = .01$) indicating better overall phonological awareness performance. The effect size was large (Cohen $d = 0.9$).

Students' performance on the PAAP subtests allowed for examination of the effect of cognitive style on components of phonological awareness. On the subtest examining students' ability to segment one-, two-, three-, and four-syllable words (syllable segmentation), findings showed that analytic students scored significantly higher than wholistic students ($t(27) = 3.0, p = .006$), indicating that analytic students performed better than wholistic students on this task. The effect size was large (Cohen $d = 1.1$). On the subtest examining students' ability to substitute phonemes at the beginning, middle, and end of words (phoneme substitution), findings showed that analytic students scored significantly higher than wholistic students ($t(27) = 2.7, p = .01$), indicating that phoneme substitution is an aspect of phonemic awareness where analytic students performed better than wholistic students. The effect size was large (Cohen $d = 1.1$). Analytic students also performed significantly better than wholistic students ($t(27) = 2.8, p = .009$) on phoneme blending, a phonemic awareness task requiring students to blend phonemes in one- and two-syllable words. The effect size was large (Cohen $d = 1.0$). No significant group differences were found on rhyming tasks, phoneme isolation tasks involving identification of phonemes at the beginning, middle, and end of words, on phoneme deletion tasks involving deletion of phonemes at the beginning and end of words, and on phoneme segmentation tasks involving the ability to segment simple words into their constituent phonemes.

Discussion

The purpose of this study was to investigate differences in phonological awareness based on cognitive style in order to advance understanding of why some typically developing students experience reading difficulties. Differences in overall phonological awareness, with analytic students performing better than wholistic students, offer insight into the possible source of the reading differences that may be observed between these groups. It helps in identifying the

possible source of the problems wholistic students may experience in mastering reading since phonological awareness plays a central role in the ability to effectively decode printed words, a foundational process in reading. This result may explain findings by Kirchner-Nebot and Amador-Campos (1999) and Paramo and Tinajero (1990), which showed global reading differences between analytic and wholistic students with analytic students scoring better than wholistic students.

Findings show that analytic students performed better than wholistic students on some phonemic awareness tasks (phoneme blending and phoneme substitution). This has implications for reading since phonemic awareness is strongly correlated with reading achievement. Phonemic awareness is a component of phonological awareness that involves the ability to focus on and manipulate phonemes in spoken words (Enri, Nunes, Willows, Schuster, Yanghoub-Zadeh, & Shanahan, 2001). Phonemic awareness has been shown to explain over 25% of the variance in word reading in kindergarten and 9% of the variance in first grade (NRC, 2002). Phoneme blending is particularly important in reading because it allows students to combine individual sounds together to form words. In beginning readers, difficulties related to phoneme blending may manifest as global reading decoding difficulties. For older readers, difficulties might only be evident when attempting to read unfamiliar words when other strategies at decoding, such as sight word reading, reading by analogy, and use of context to predict the word have been unsuccessful. Phoneme substitution is the most advanced phonemic awareness ability. In a phoneme substitution task, the student must recognize the component parts of a word (segment the word into its phonemes), isolate a specific phoneme, delete that phoneme, add the new phoneme, and blend the phonemes together to say the new word. Phoneme manipulation

tasks (i.e., phoneme addition, deletion, and substitution) are the best predictors of word-level reading proficiency (Kilpatrick, 2015).

These findings may also help explain Davies' (1994) observation that analytic students appear to favor a phonological route to reading while wholistic students prefer the use of visual strategies. Wholistic students may naturally default to using visual cue reading strategies (e.g., sight word reading) because the processes involved are less demanding for them compared to using phonological strategies. Even though using visual cue reading strategies is a less effective route to reading than using phonological strategies, wholistic students may be drawn to it because of cognitive incompatibility with phonological awareness related tasks.

Better syllable segmentation in analytic students compared to wholistic students provides further evidence that wholistic students may encounter reading problems because of difficulties with phonological awareness. This finding is significant because research (Goswami, 2003) has suggested that students are spontaneously aware of syllables and that approximately 90% of 6-year-olds are able to segment by syllables. The challenges that wholistic students experience with syllable segmentation, a task that most of their age peers would have mastered, suggest that their phonological awareness difficulties are independent of level of task difficulty.

Present findings appear to show differences in phonological awareness based on cognitive style with analytic students performing better than wholistic students. Given the role of phonological awareness in decoding, reading fluency, and reading comprehension, these findings have implications for how we identify students who are at-risk for reading problems and the types of remediations that are offered. They indicate the need for early identification of wholistic students at-risk for reading difficulties and the provision of early phonological awareness instruction to promote reading success.

The findings showing analytic-wholistic group differences in phonological awareness have implications for reducing the reading achievement gap between minority and majority students, as well as raising reading achievement for all students. Providing targeted phonological awareness instruction to wholistic students who are at-risk for reading difficulties would not only benefit both majority and minority students, but could also result in steeper gains for minority students since they tend to be wholistic.

The findings of this study and their implications regarding reading acquisition should, however, be tempered given the exploratory nature of the study and the study limitations. Additionally, there were components of phonological awareness where no significant differences were observed between wholistic and analytic students. Nonetheless, findings offer a line of inquiry on possible underlying mechanisms that may impact the ease with which students in certain segments of the population learn to read. This is worthy of further exploration.

Limitations

The study sample was limited in terms of total number of participants and the number of participants that were wholistic. Out of the 29 students in the study, only 9 were wholistic. The small sample size is a key limitation. The findings need validation in a much larger sample. Additionally, generalizability of findings may be somewhat limited given that study sample was a convenience sample of middle socioeconomic status students. Students from other socioeconomic groups may differ from their middle socioeconomic status peers on a number of factors which may modify the effect of cognitive style on phonological awareness.

Implications

Given the study limitations, it is important that interpretation of implications be tempered by recognition of these limitations. That said, this study presents findings that suggest weaker phonological awareness in wholistic students compared to analytic students. Given the central role that phonological awareness plays in reading acquisition these findings have implications for reading-related screening, assessment, and intervention.

The findings suggest the need for early cognitive screening by educational practitioners (i.e., teachers, speech-language pathologists, reading specialists, etc.) to help identify wholistic students who might be at-risk for reading difficulties because of difficulties with phonological awareness. It is important to provide phonological awareness instruction to wholistic students early in their development since phonological awareness skills have been shown to develop as early as age three and preschoolers appear to benefit more from phonological awareness than kindergartners or primary school students. Additionally, phonemic awareness explains 25% of the variance in word reading in kindergarten compared to 9% in 1st grade (Ehri et al., 2002; Sprugevica & Hoiem, 2003). Instruction should particularly seek to address the phonological awareness areas that wholistic students find challenging that have been identified in this study such as phoneme substitution and phoneme blending. Since the reading difficulties experienced by wholistic students have been shown to be related to their cognitive style, it may be necessary to differentiate phonological awareness instruction methodologies and materials to accommodate the students' cognitive style. The differentiation of phonological awareness instruction relative to cognitive style is an area that needs further research.

The study findings may have implications for reducing the reading achievement gap between minority and majority students. Since more minorities tend to be wholistic, early

identification of wholistic students at-risk for reading difficulties and the provision of effective phonological intervention would benefit more minority students.

Conclusion

This study examined the differences in phonological awareness performance based on cognitive style. The findings show analytic students performed better than wholistic students in overall phonological awareness and in the following phonological awareness components: syllable segmentation, phoneme substitution and phoneme blending. Since phonological awareness and its components are good predictors of reading ability, the reduced phonological awareness in wholistic students has implications regarding the ease with which they acquire reading. The study findings suggest that wholistic students may experience reading difficulties stemming from their phonological awareness difficulties. It is, therefore, important to identify these students early in their educational careers and offer them appropriate remediation services.

Additionally, since minority students are more likely to be wholistic compared to their majority peers, the early identification of at-risk wholistic students combined with the provision of targeted phonological awareness intervention could help reduce the minority-majority reading achievement gap. This study offers a significant contribution to our understanding of the role of cognitive style in the reading acquisition process and helps explain why some students find reading challenging.

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Authorship Guidelines for Faculty Collaborating with Students and Professionals Collaborating with Other Professionals

The NBASLH Advisory Council on Ethical Conduct


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Publications and presentations are the primary means for disseminating scholarly information and advancing research. Authorship establishes professional credibility and delineates the individuals responsible for developing and implementing the research. Publications and presentations are often a major determinant of advancement in the academic setting. The issue of authorship in collaborative research endeavors between faculty and students, therefore, is of interest and concern.

Authorship and other publication credits reflect actual scientific or professional contributions, regardless of an individual's profession, job, or institutional status. Graduate and undergraduate students are frequently members of research teams; however, they are not in a position to advocate for the recognition of their scholarly contributions to work conducted with and/or supervised by more senior level researchers or academicians. The most serious outcome of this situation is that the students carry out the work, but do not receive recognition for their efforts in the form of authorship.

Purpose of Guidelines

These guidelines will help those who contribute to the development of a scholarly manuscript or presentation to be aware of what constitutes the responsibilities of being an author, and the criteria for students receiving credit for authorship. The primary purpose of these guidelines is to encourage open discussion and proper crediting of authorship based on substantive contributions to a paper or presentation submitted for review by other professional peers.

Fine and Kurdek (1993), who have written on these issues, offer the following remarks on faculty-student publications, "To be included as an author on a scholarly publication, a student should, in a cumulative sense, make a professional contribution that is creative and intellectual in nature, that is integral to completion of the paper, and that requires an overarching perspective of the project. Examples of professional contributions include developing the research design, writing portions of the manuscript,

integrating diverse theoretical perspectives, developing new conceptual models, designing assessments, contributing to data analysis decision, and interpreting results..." (p. 1145).

Ethical Issues in Determining Authorship Credit on Faculty-Student Collaborative Projects

The ethical dilemmas that arise when faculty collaborate with students on projects that result in a publication or presentation stem from the unique nature of the faculty-student relationship. Although collaboration between two professionals can occur on an egalitarian basis, collaboration between faculty and their students is inherently unequal. Fine and Kurdek (1993) believe that there are several potential ethical dilemmas in faculty-student collaborations. The primary dilemma arises when faculty take authorship credit that was earned by the student. Many of the authorship-related issues identified in the literature, or by students, concern faculty taking a level of authorship credit that was not merited and not giving students appropriate credit. Another dilemma, which is opposite to the first, occurs when students are granted undeserved authorship credit. There are three reasons why this dilemma is an ethical one. First, a publication that is not legitimately earned may misrepresent the student's scholarly expertise. Second, if, because they are now a published author, the student is perceived as being more skilled than a peer who is not published, the student is given an unfair advantage professionally. Finally, if the student is perceived to have a level of competence that they do not actually have, they will be expected to accomplish tasks that may be outside their range of expertise.

Ethical Principles in Determining Authorship Credit and Order on Faculty-Student Collaborative Projects

Two ethical principles may be relevant to ethical dilemmas that arise with regard to authorship on faculty-student collaborative projects: beneficence and justice (Fine & Kurdek, 1993). These principles, from which codes of ethics have been developed, may provide guidance when the codes themselves are inadequate (Kitchener, 1984). To be beneficent is to do good for others, to do no harm. In the context of

the authorship issue, beneficence implies that faculty should grant students authorship credit and first author status when they are deserved. Justice, the second ethical principle, refers to the ethical duty to treat others fairly and to give them what they deserve. Kitchener (1984) states that the formal meaning of justice is “treating equals equally and unequals unequally but in proportion to their relevant differences” (p. 49). If an individual is to be treated differently, the rationale for this difference must be clear. In the authorship setting, if students are not considered to be meaningfully different from professional colleagues, then they should be awarded authorship credit and order on the same basis as those of nonstudent colleagues.

Determination of Authorship Credit and Order on Faculty-Student Collaborative Projects

Authorship should be discussed early in the development of the project work and reviewed periodically for changes in participation and contribution of relevant parties to the work and any subsequent publications or presentations. Students should be considered as the principal author on any multiple-author article that is substantially based on the student’s dissertation or thesis (or other research project) – ***except in instances where the student voluntarily agrees not to be first author.*** Any professional dissemination of work completed by a student should be worthy of either authorship or other acknowledgement.

Authorship Guidelines for Publication of Research from Doctoral Dissertations and Master’s Theses

Although guidelines for authorship on publications resulting from doctoral dissertation research are listed by selected institutions, they generally are not published or formally addressed by institutions. It is generally assumed, however, that the doctoral candidate who holds the copyright on the dissertation will be the lead author on publications based on the dissertation research. The dissertation is often the primary culminating research experience for many doctoral students, and publication of the resulting

research is an important component of that experience. It is appropriate for the doctoral candidate to be the sole author on any research publication resulting from the dissertation. In many instances, the doctoral candidate will ask their faculty mentor to co-author a publication based on the dissertation. It is important to acknowledge that this is an option, not a requirement. What is most important is that the doctoral student is the lead author. The only time this is not the case is if the doctoral candidate simply will not or does not take the initiative in publishing the research. In some situations, a doctoral student may not be able or willing to prepare a manuscript for publication. In these situations, faculty mentors may assume a leadership author role in publishing the research. In such cases because the student holds the copyright on the dissertation, legally they must give permission to the faculty author(s). The expectation is that this would be an atypical occurrence (Wiley, 2019).

Copyright control also applies to manuscripts for theses. The expectations regarding publication will typically differ for master's theses and doctoral dissertations based primarily on the stage of scientific development for the student researcher. After completing their master's thesis, some students may decide not to pursue a research career and have little or no interest in publishing the results of their theses. These masters-level students may be qualified to submit a manuscript as a first author alone or with faculty mentors as collaborative authors. Then again, some masters-level students may not be adequately prepared to develop a manuscript for publication on an independent basis or even as a first author on collaborative research published from a thesis. The hope would be one that the thesis writer serves as the first author for any manuscript that results from the thesis research. If this is not possible, and the possibility has been methodically thought through and discussed, then a faculty mentor may serve as the first author. If this is done, the acknowledgments should clearly state that the manuscript is based on the research from the master's thesis of the author of the thesis and is being put forward for publication with their consent (Wiley, 2019).

Options for Students Denied Authorship Credit

If a student member of NBASLH believes that they have been inappropriately denied authorship credit by a university faculty member or other researcher, there are several options they can take to possibly remedy the situation.

1. Discuss the facts with their mentors or other faculty members.
2. Discuss the facts with the chair of the department.
3. Submit a grievance against the faculty member involved through the grievance process at their university.
4. If the faculty member is either certified by the American Speech-Language-Hearing Association (ASHA) or licensed by the state in which they work, submit an ethics complaint to the ASHA Board of Ethics and/or the state licensing body.

Once again, if authorship has been discussed early in the development of the project work and reviewed periodically for changes in participation and contribution of relevant parties to the work and any subsequent publications or presentations, this outcome may be avoided.

Determination of Authorship for All Professionals

Authorship disputes are not uncommon. For a researcher or academician, career advancement often depends on a publication record. Individuals want to receive due credit for the work that they have done, and in this case, in the form of being a named author on a presentation or published paper. During research collaborations, questions arise about authorship, such as who qualifies as an author? Is the supervisor of a laboratory or division included in the author list? How does everyone receive the appropriate amount of credit, while ensuring no unethical behavior occurs?

The same fundamental rule about authorship applies regardless of the professionals conducting the research or the setting in which the research is conducted. Authorship should be discussed early in the development of the project work and reviewed periodically for changes in participation and contributions of the relevant parties to the work. Notes should be kept about these discussions. The order of authorship may not necessarily indicate the magnitude of the contributions of the individual authors. Authors should adhere to the norm of their discipline and the publisher's guidelines (North Carolina A&T University, 2019). The following are suggestions for determining order (North Carolina A&T University, 2019, p. 6):

- The person who has made the major contribution to the product and/or taken the lead in writing should be first author.
- Authors who have made major contributions to analysis, interpretation or writing may be listed immediately following the first author.
- The person who has general responsibility for the project is frequently listed last.
- Individuals who fulfill the criteria for authorship may be listed in alphabetical order.

It is not appropriate or ethical to deny authorship to any contributor who carries out a substantial amount of a project's data collection, data analysis and/or drafting of the work the final presentation or publication is based on.

Examples of Authorship Misconduct

Fraudulent authorship and misrepresentation are generally considered to be misconduct. The following scenarios are examples of authorship misconduct (The Royal Society Blog, 2022):

Ghost authorship: when someone who actively participated in the research, and who meets the authorship criteria, is not included in the author list.

Guest authorship: when researchers (typically those who are senior) are included in the author list because of their respect or influence, in the hope that this will increase the likelihood of acceptance of the presentation or publication.

Gift authorship: when an individual who did not contribute to the manuscript is listed as an author for some personal reason or possible financial gain.

Should this authorship misconduct occur, it is recommended bringing to all co-authors' attention that fraudulent authorship is considered to be scientific misconduct by most journal editors and professional associations (Committee on Professional Ethics, 2023; The Royal Society Blog, 2022).

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Additional Resources

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