Research Article

Barriers to Graduate Applications: Perspectives of Undergraduate Students From Underrepresented Backgrounds in Communication Science and Disorders

Victor Alan Lugo,[a] (iD) Carla Wood,[a] (iD) Michelle Torres-Chavarro,[a] (iD) and Miguel Garcia-Salas[a] (iD)

[a] School of Communication Science and Disorders, Florida State University, Tallahassee

A B S T R A C T

Purpose: The purpose of this preliminary study was to examine the perspectives of students from underrepresented backgrounds on the graduate school application process and identify ways to improve diversity, equity, inclusion, and accessibility in communication science and disorders.
Method: A novel 15-item survey was used to solicit information about the experiences and perspectives of the graduate application process from 39 senior undergraduate students in a communication science and disorders program. Semistructured interviews were then conducted with seven students from underrepresented backgrounds to further explore perceived barriers to graduate applications and potential resources and supports.
Results: Results demonstrated a variety of factors, including financial demands, Graduate Record Examinations requirements, and program location and prestige, that influenced student decision making during the application process. Students from underrepresented backgrounds reported applying to more programs on average but engaged in numerically fewer hours of research and practicum experiences than peers from majority backgrounds. The most significant barriers to the graduate application process included learning and mentorship challenges during COVID-19, limited experiential learning opportunities, and difficulties forming social connections. Departmental support, application assistance, and mentorship initiatives were highlighted as potential levers of change.
Conclusions: Based on reported barriers to the graduate application process, more research is necessary to further investigate the extent these factors influence achievement, retention, and overall success of students from underrepresented backgrounds. Additional resources and supports, especially those recommended by students in this study, may serve as potential action steps to improve diversity, equity, inclusion, and accessibility in communication science and disorders programs.
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The national dialogue on diversity, equity, inclusion, and accessibility (DEIA) has brought heightened awareness of systemic racism in the United States (Ellis & Kendall, 2021). Relatedly, acknowledgment of the impact of racism and privilege has increased in the sciences (e.g., Wingfield, 2020) and communication science and disorders (CSD) training programs in higher education (e.g., Ellis et al., 2021). With increased awareness, burgeoning initiatives and stronger commitments to DEIA are discussed in CSD professional journals (e.g., Ellis & Kendall, 2021; Wong et al., 2021) and public policy agenda (Regan, 2021). Aligned with DEIA initiatives, affirmation statements are present on the websites of CSD-related national

organizations (American Speech-Language-Hearing Association [ASHA], 2021c; Council of Academic Programs in Communication Sciences and Disorders, 2021) and at most CSD programs.

Discussions of DEIA often include several terms that may benefit from building mutual understandings of references. *Diversity* refers to individual and group differences across many demographic features such as race, ethnicity, class, gender identity, sexual orientation, country of origin, geographic origin, and ability status (Woods et al., 2015). For the purposes of this study, we use the National Institutes of Health categories of diversity, which include race/ethnicity, disability, and disadvantaged backgrounds (e.g., low-income and first-generation students). *Equity* has been defined in the educational context as "the creation of opportunities for historically underrepresented populations to have equal access to and participation in educational programs" (Woods et al., 2015, p. 46). *Inclusion* is a complex concept, defined by a standards panel for global diversity and inclusion benchmarks as "how diversity is leveraged to create a fair, equitable, healthy, and high-performing organization or community where all individuals are respected and feel engaged and motivated, and where their contributions toward meeting organizational and societal goals are valued" (O'Mara, 2015, p. 268). *Accessibility* is the design, development, construction, and maintenance of "facilities, information and communication technology, programs, and services so that all people, including people with disabilities, can fully and independently use them" (The White House, 2021). *Privilege* is defined in the relevant literature on health equity as "rights, benefit, advantage, or opportunity" (Brown & White, 2020, p. 1) that are awarded to an individual or individuals.

Despite progress in the form of DEIA mission statements, stated commitments to advocate for DEIA, and acknowledgment of the importance of DEIA (ASHA, 2021c; Regan, 2021), the large national membership body of ASHA shows little racial and linguistic diversity, with only 8.7% of members identifying as racial minorities (ASHA, 2022a). Moreover, only 6.2% are Hispanic or Latino(a) and 8.2% of ASHA members identified as multilingual service providers. More specifically, 7.3% identify as multilingual speech-language pathologists (SLPs; ASHA, 2021a, 2022a). In fact, the occupation of SLP was identified as ranking among the top 10 "Whitest jobs in America" (Thompson, 2013). Even more concerning is the lack of change in the demographic characteristics of members relative to shifting demographics of the larger population in the United States, with 40% of the population identified as racial minorities (U.S. Census Bureau, 2020). Despite adopting a strategic plan to increase diversity (ASHA, n.d.) and the recognized need for DEIA, ASHA's membership body remains fairly monoracial, with 91.3% of members and certificate holders identifying as White (ASHA, 2021a).

The Need for a Diverse Workforce in Schools

National statistics data from the U.S. Bureau of Labor Statistics indicate that there is a severe shortage of SLPs and job openings for SLPs are expected to increase through the year 2028 by 27% (ASHA, 2022b). Aligned with growing cultural and linguistic diversity in the general population, there is a recognized need to prepare a future workforce of SLPs who are able to identify with and represent the cultural and linguistic backgrounds of the clients they serve. The U.S. Census Bureau (2020) predicts that the number of Americans who identify as White will drop below 50% in approximately 20 years. In U.S. schools, the number of children who identified as White decreased from 62% in 2000 to 53% in 2013 (Musu-Gillette et al., 2016). During that time, children who identified as Hispanic increased from 16% to 24% (Musu-Gillette et al., 2016).

In addition, there is a growing number of school-age children from linguistically diverse backgrounds. Among students in grades K–12, English learners (ELs) are the fastest-growing group of students, with statisticians predicting that one in four students will be an EL by 2025 (National Education Association, 2020). Approximately 14.3% of the nation's 5 million ELs are served under the Individuals with Disabilities Education Act (Kena et al., 2022). For example, Florida is ranked third in the United States for the number of ELs served, with over 265,000 students from linguistic minority backgrounds (Florida Department of Education, 2022). The enrollment of Hispanic students in Pre-K to 12th grade increased from 8.6 million to 12.1 million (24%) in 2012, with even higher prevalence in urban educational settings (Kena et al., 2015). Considering that 80% of all schools report having ELs, school-based SLPs with specialized knowledge and skills to address the needs of students from diverse cultural and linguistic backgrounds are needed.

The Need for a Diverse Workforce in Health Care

Task forces across universities have been commissioned to focus on improving health equity and reducing health care disparities through aligning and diversifying the health workforce (e.g., Rodríguez, 2021). Existing literature reports disparities in health care contexts with lower quality and access to health care for individuals from racial minority groups (Anthony et al., 2009; Fiscella et al., 2000). Additionally, a report by the U.S. Health

Resources and Services Administration, Office of Health Equity (2017) found that White workers made up the majority of health care occupations. In the same report, White workers represented over 50% of workers in almost every occupation, and compared to their representation in the United States, individuals identifying as non-Hispanic White were overrepresented in 23 of the 30 occupations. Clinical mismatches have been purported to influence client–provider relationships (Saha et al., 2008), perceived quality of care (Harmsen et al., 2008), and disparities in treatment outcomes and service delivery (Glazer et al., 2014; Morgan et al., 2017).

Recruitment and Retention of Underrepresented Students in CSD

Although there is greater diversity in undergraduate CSD programs (i.e., 29.5% identify as minority students), there is a 10%–27% decrease in diversity between undergraduate and master's degree programs (ASHA, 2021b). Among potential barriers to graduate admission cited in the extant literature include high-stakes testing and finances (Fuse & Bergen, 2018; Sylvan et al., 2020), cutoff scores on Graduate Record Examinations (GRE; Kovacs, 2021), and English language skills and insufficient support during the application process (Guiberson & Virgil, 2021b).

Previous research purports that traditional metrics in high-stakes review processes (e.g., GRE and grade point average) disproportionately disadvantage traditionally underrepresented groups (Kovacs, 2021; Miller & Stassun, 2014; Posselt, 2016), which may curtail efforts to diversify CSD training programs (Wong et al., 2021). The GRE is costly and differentially discourages students from low socioeconomic backgrounds from taking it multiple times to improve performance (Miller & Stassun, 2014). Furthermore, financial demands related to graduate school admissions have been reported in other health disciplines as a specific barrier to diversifying the health care workforce (Woods-Giscombe et al., 2015).

Given the attrition from undergraduate to graduate programs, additional research is needed to understand the challenges faced by prospective graduate students. Burgeoning literature calls for additional consideration of supports that foster inclusive and supportive environments in CSD programs (Alicea & Johnson, 2021) and consideration of potential deterrents to retention of diverse students, such as racial microaggressions in CSD programs (Mishra et al., 2021). Program level shifts in using more holistic review processes for admissions in an effort to foster equitable admissions (Guiberson & Vigil, 2021a; Mandulak, 2021; Wong et al., 2021) and reduce health disparities in urban communities by diversifying the health workforce (Glazer et al., 2014) may be beneficial.

Understanding access to and engagement in experiential learning as well as perceived barriers to the application process for undergraduate students in CSD is critical not only to facilitate equity in admission to graduate school but also to aid with cultivating a broader culture of DEIA in CSD programs (Mahendra & Kashinath, 2022). Some programs have reported promising effects of communities of support on retention and engagement of scholars from underrepresented groups (Alvarez et al., 2009; S. M. Greene, 2021; Lippincott & German, 2007; Mohapatra & Mohan, 2021; Woods et al., 2015). Such programs generally offer informal supports and peer-to-peer mentoring, study groups, and general advising to support success and foster a greater sense of community for specific student populations. Retention efforts including academic support (e.g., tutoring), social and emotional support (e.g., peer-to-peer support), and financial support have been shown to improve diversity in other health disciplines (Banister et al., 2014; Couch et al., 2015) but remain relatively understudied in CSD programs and have only recently been considered in professional journals of CSD (S. M. Greene, 2021; Mohapatra & Mohan, 2021). Limitations in the pipeline of scholars from underrepresented groups draw question to potential variability in admissions and preparation practices. To date, few studies have prospectively examined graduate admission barriers in CSD programs (e.g., Kovacs, 2021; Sylvan et al., 2020). The lack of research on barriers to the application process, and conversely the need for innovative resources and supports to recruit and retain scholars, contributes to persistent disparities in CSD graduate programs.

Research Questions

Recognizing that graduate school admissions play an essential role in the pipeline to the profession, additional research is needed to examine and describe experiences of undergraduate seniors during the application process. Toward addressing existing gaps in DEIA in CSD graduate programs and adding to the knowledge base about admission barriers, this study aimed to address the following research questions.

1. How do undergraduate CSD students from underrepresented backgrounds assess the application process, factors that influence where they apply, and their overall preparedness?

2. What barriers do undergraduate CSD students from underrepresented backgrounds experience during the graduate application process?

3. What resources and supports do undergraduate CSD students from underrepresented backgrounds

recommend to CSD programs to improve DEIA during the graduate application process?

Method

This study was reviewed and approved by the institutional review board of the Human Subjects Committee at Florida State University (#00002811). Using Qualtrics (Qualtrics, 2020), the investigators invited undergraduate seniors in the CSD major in one university program to participate in describing the application process and their experiences.

Participants

One university CSD program served as the broad context for the survey. The program was composed of 99 undergraduate seniors, with 33 of the students identifying as members of traditionally minoritized groups, including three Black/African American students, 25 Hispanic/Latino students, and three students of two or more race/ethnicities. At the time of the survey, the program did not have a student-led initiative related to diversity equity, inclusion, and accessibility or a formalized peer support group. However, the program did offer a specialized undergraduate certificate training program in bilingual assessment and intervention that approximately 12–15 students participated in each semester.

In response to the invitation, 39 students voluntarily completed the survey (see Table 1 for demographic summary). Respondents from underrepresented groups (n = 11) were identified and given an opportunity to provide additional feedback and respond to open-ended questions regarding their experiences during a semistructured interview with one of the investigators. Determination of *underrepresentation* was based on self-identification by the respondent. To allow for consideration of intersecting identities (Buchanan & Wiklund, 2020), respondents who self-identified as being from an underrepresented group could identify multiple marginalized groups, such as disability status, first-generation status, and race/ethnicity. Of the 11 respondents from underrepresented groups, seven consented to participate in interviews to further discuss barriers and recommendations for improving DEIA in graduate admissions (see Table 2).

Survey Instrument

The survey consisted of several demographic questions and 11 questions related to the graduate application process. Item development was informed by recent

Table 1. Demographic characteristics of the sample of communication science and disorders undergraduate seniors.

Respondent characteristics	*n*	%
Underrepresented racial/ethnic group		
Yes	6	15.4
No	28	71.8
Did not respond	5	12.8
If yes:		
Ethnicity		
Hispanic or Latino	5	83.3
Not Hispanic or Latino	1	16.7
Race		
Asian/Pacific Islander	1	16.7
White	5	83.3
Student with a disability		
Yes	4	10.3
No	29	74.3
Did not respond	6	15.4
First-generation college student		
Yes	6	15.4
No	26	66.7
I'm not sure	1	2.5
Did not respond	6	15.4

professional presentations, publications identifying potential influencing factors on graduate admissions (e.g., Fuse & Bergen, 2018; Girolamo & Ghali, 2021; Guiberson & Vigil, 2021b), and calls for more research on racism and barriers to DEIA in CSD graduate programs (e.g., Ellis & Kendall, 2021; Ellis et al., 2021). Three questions asked students about general experiences with the application process (e.g., how many different programs they applied to, ease at which letters were secured, assistance received in preparing application). Three questions inquired about influencing factors of program selection, including two questions with scaled response options (e.g., the GRE requirement, cost of the application) and one open-ended question. Four questions pertained to perceptions of confidence in preparedness and the number of hours per week they participated in experiential learning activities (e.g., research activities, specialty practicum experiences, and volunteer or service-learning activities). Finally, the questionnaire asked students to identify factors that might influence their decision making if accepted to multiple graduate programs. See Supplemental Material S1 for full survey.

Semistructured interview questions. A sequential explanatory design (Creswell & Plano Clark, 2011) was utilized so data from the semistructured interviews could help explain the quantitative results from the survey instrument for the purpose of complementarity (J. C. Greene et al., 1989; McKim, 2017). Fourteen open-ended

Table 2. Semistructured interview participant characteristics.

Characteristics				Average hours per week			
Name	Race/ethnicity	Disability status	First-generation	Number of applications	Research activities	Practicum experiences	Volunteer/service learning
A.B.	Hispanic/Latina	Yes	No	8	10	0	5
C.D.	Hispanic/Latina	No	Yes	7	10	8	8
E.F.	Hispanic/Latina	No	Yes	5	9	0	20
G.H.	Asian	No	No	5	3	0	2
I.J.	Hispanic/Latina	No	No	8	5	0	0
K.L.	Hispanic/Latina	No	Not sure	8	6	5	3
M.N.	White	Yes	No	7	10	5	10

Note. Names have been changed to patterned initials to protect the identity of participants.

questions were scripted to elicit information about students' experiences during the graduate application process including perceived preparedness and barriers to admissions and recommendations for undergraduate programs to best support students from underrepresented backgrounds. Together, the 14 questions provided in Supplemental Material S1 were designed to serve as conversation starters. Thus, the investigators employed a collaborative interviewing technique (Brinkmann & Kvale, 2015) that promoted equality in questioning and interpreting between researcher and participant.

Procedure

Survey distribution. An invitation link to the survey was e-mailed to all seniors in one undergraduate CSD program in the state of Florida. A reminder e-mail was sent 1 week later, and a subsequent reminder invitation was e-mailed after 2 weeks. A final e-mail was sent 1 month later to encourage maximum participation. The survey was open and available to participants for 4 months from August 2021 to December 2021.

Semistructured interviews. The authors conducted interviews utilizing Zoom video conferencing platform during students' engagement in graduate school applications from November 2021 to February 2022. Interviews lasted approximately 0.75–1 hr in duration. All interviews were audio- and visual-recorded and transcribed. Field notes were also taken and documented by investigators. Authors were responsible for transcribing interviews that they conducted. To ensure intertranscriber reliability, approximately 40% of interviews (i.e., three interviews) were transcribed by both an author and an undergraduate research assistant. Percent intertranscriber agreement of participant interviews was 100%. Once transcriptions were complete, interviewee responses were compiled into Excel spreadsheets based on their corresponding questions and then exported as comma-separated values (CSV) files. Finally, CSV files were entered into Leximancer v4.5, a

natural language software tool (Leximancer, 2020), for content and natural-language processing analysis.

Analyses

We first conducted descriptive analyses to answer the first research question, which aimed to describe the perceptions of undergraduate seniors in CSD during their application process as well as potential influencing factors. Next, we conducted a content and natural-language processing analysis of transcribed interviews to identify the major themes in perceived barriers to graduate applications and potential resources and supports that were nominated by participants using Leximancer v4.5 (Leximancer, 2020). Leximancer is a computer software that conducts quantitative content analysis of qualitative data using latent Dirichlet allocation, a machine learning technique that classifies and/or categorizes observations (i.e., text) into groups (i.e., topics) that share conceptual similarities within a linguistic corpus. Ward et al. (2014) aptly described the Leximancer process:

> [Leximancer] learns what the main concepts are in a text and how they relate to each other...conducts a thematic analysis and a relational (or semantic) analysis of the interview data...[then] provides word frequency counts and co-occurrence counts of concepts present in the transcripts of the narrative interviews. (p. 119)

The dominant themes and their respective concepts in the text data were then visually represented in two concept maps. The first and fourth authors then conducted post hoc review of text excerpts, word frequency counts, and concept maps to ensure accuracy and to conduct thematic interpretation for this study (Owen, 1984). The rationale for the use of Leximancer was twofold: (a) to reduce coder bias in identifying recurrent and repeated constructs and (b) to leverage advanced text-analytic

methods to allow for the identification of themes that goes beyond word counting (Harwood et al., 2015).

Results

Perceptions and Influencing Factors

To answer the first research question, we report descriptive statistics, which aimed to examine and describe the perceptions and experiences of undergraduate CSD students from underrepresented backgrounds during the application process as well as the factors that influenced their decision making. For the purpose of group comparisons of survey items, descriptive statistics is also included for students from traditionally majority backgrounds (i.e., White, non-Hispanic/Latino, abled, continuing-generation college students). In total, the sample of students who completed the survey ($N = 39$) applied to 215 programs ($M = 5.51$, $SD = 2.61$). Of the 30 students who applied to SLP graduate programs, a total of 208 applications were submitted ($M = 6.30$, $SD = 1.81$), with students from underrepresented backgrounds ($n = 11$) applying to a numerically higher number of programs ($M = 6.45$, $SD = 1.69$) than students from majority backgrounds ($M = 6.00$, $SD = 1.89$). For the two students who did not apply to SLP graduate programs, one student applied to five audiology graduate programs and the other student applied to two unspecified graduate programs. The remaining seven students did not provide responses regarding the number or type of graduate program applications. Respondents were also asked to approximate how many hours per week they participated in research activities, specialty practicum experiences, and volunteer and/or service learning during their undergraduate program. Means and standard deviations for these potential application factors are reported in Table 3.

For students from underrepresented backgrounds, 46% of respondents indicated that the cost of graduate applications "moderately" or "strongly" influenced where they applied; 18% indicated that the cost "somewhat" influenced where they applied, and 36% reported that the cost of applications was "slightly" or "not at all" an influencing factor. Conversely, for students from majority backgrounds, 30% of respondents indicated that the cost of graduate applications "moderately" or "strongly" influenced where they applied; 27% indicated that the cost "somewhat" influenced where they applied, and 43% reported that the cost of applications was "slightly" or "not at all" an influencing factor.

A majority of students from both underrepresented backgrounds (64%) and majority backgrounds (58%) reported that the GRE influenced where they applied. Likewise, students from underrepresented and majority backgrounds expressed relatively equal confidence in their preparedness to ensure successful admittance to at least one graduate program.

Next, we examined perceived level of support during preparation of written application materials (i.e., short answers, personal statements) and ease of letters of recommendation procurement. For students from underrepresented backgrounds, when asked how much help was received when preparing and/or editing written application materials, 64% indicated that they received "a moderate amount" of assistance; 27% received "a lot" of help on their materials, whereas 9% received "a little" to "none at all." When asked to gauge the difficulty of securing letters of recommendation, the majority of respondents (73%) indicated that letters of recommendation were "extremely easy" or "somewhat easy" to obtain; 27% indicated letters of recommendation were "neither easy nor difficult" to obtain. Finally, the most reported supporters of application material preparation were the university career and writing centers and family members. In comparison, for students from majority backgrounds, 49% indicated that they received "a moderate amount" of assistance; 18% received "a lot" or "a great deal" of help on their materials, and 33% received "a little" to "none at all." When asked to gauge the difficulty of securing letters of recommendation,

Table 3. Means and standard deviations of key survey items based on membership in underrepresented groups.

Survey items of interest	Underrepresented group	n	M	SD
Number of program applications	Yes	11	6.45	1.69
	No	19	6.00	1.89
Hours of research activities	Yes	11	6.54	2.93
	No	19	9.68	15.28
Hours of practicum experiences	Yes	9	4.11	2.26
	No	16	11.69	18.80
Hours of volunteer/service learning	Yes	11	7.27	4.84
	No	18	5.50	5.46

the majority of respondents (67%) indicated that letters of recommendation were "extremely easy" or "somewhat easy" to obtain; 18% indicated letters of recommendation were "neither easy nor difficult" to obtain, and 15% expressed that securing letters of recommendation was "somewhat difficult." Finally, the most reported supporters of application material preparation were professors, family members, and peers.

Finally, when asked to specify what factors might influence the final selection of a program, the majority of students from underrepresented and majority backgrounds equally cited financial considerations as the most influential factor, for example, "How much funding I am offered. I want to go to the best graduate program that I can for the least amount of money," and "Financial assistance is extremely important to me, so ideally this will be one of the biggest factors when deciding." Location as well as the quality and history of the graduate program were among other factors considered by respondents, for example, "If funding is almost equal between schools, then I will decide based on the quality of program and location."

Content and Natural-Language Processing Analysis of Semistructured Interviews

Barriers to the Graduate Application Process

Comments regarding the most significant barriers to the graduate application process for students from underrepresented backgrounds revealed four overarching themes of *learning, experiential learning*, *competition*, and *connections*. The majority of comments was strongly associated with the *learning* theme and represented an amalgamation of challenges that negatively impacted learning and mastery of CSD-specific knowledge, including technological barriers and the shift to virtual learning due to the COVID-19 pandemic. Testimony of one student, A.B., served as a prime example of most comments in the *learning* theme:

> "It was hard…. Yeah, I mean, my professors made it great being online and everything, but I just feel like I would look at my phone for a second and then I miss something. I'd be so distracted, and I didn't have Wi-Fi here, so I had to use my hotspot on my phone which was kind of annoying. We would use [specific] software and they wouldn't work on the Mac…. It would have been better if we could have been in the lab with the Dell desktops. That was kind of stressful at times when we had lab reports."

Similarly, comments in the *experiential learning* and *competition* themes were related to comments in the *learning* theme and cited difficulties obtaining practicum and/or shadowing opportunities due to COVID-19, competition

with other undergraduate students, and/or burdening financial responsibilities. According to participant I.J., COVID-19 played the most significant role:

> "I couldn't find shadowing opportunities…I was looking to shadow at some hospitals because that was something I was very interested in, so I wanted to see maybe what grad schools I could apply to that are more of a medical focus. But I—no hospitals were accepting any sort of volunteer."

Likewise, participant K.L. noted that such opportunities had "...limited selection. They were only taking two of us undergraduate students, so I was in competition with everyone else who applied." Participant C.D. also had difficulties gaining clinical experiences, for example, "I had been trying to shadow an SLP and for some reason that was the hardest thing I've ever had to do …I eventually did it, but it took me two years." Conversely, participant E.F.'s difficulties acquiring sufficient field experience for graduate applications were due to her financial responsibilities:

> "I had to work around work…I'm responsible to pay my own rent and stuff. My parents don't really help me financially…I have to work a certain amount of hours to be able to pay for everything and so it kind of ties into I'm not able to do as much, like the practicum that's all day during school hours because I'm working."

For students like participant I.J., difficulty making meaningful peer connections within the discipline was a significant hindrance and exemplified most comments in the *connections* theme, for example, "As someone who is Brown, it definitely feels like what is typical for the people in this major to do for extracurriculars and what they think is fun and what they think is, you know, the norm, sometimes doesn't apply to me. So, it makes me feel a little alienated." Furthermore, she expressed that faculty and fellow students "don't realize that people like me are kind of isolated when it comes to things like that."

Potential Resources and Supports

Three overarching themes emerged from comments regarding potential resources and supports to aid students from underrepresented backgrounds in their preparation for graduate applications: *support*, *applications*, and *mentorship*. Overall, general *support* was the most essential resource required for the success of diverse students. For G.H., she wished that she could "go back in time, to make connections with all my professors earlier on" since they were "the people writing your letters of recommendations and they also [had] the insider aspect of what you should be doing throughout your years to help make your

application more competitive." However, C.D. asserted that "there's only so much that a school or a staff can do to help a student...[a student] has to really look out for those opportunities and ask because our professors are there to help us."

Almost all interviewees emphasized the need for more resources and supports to assist with graduate school *applications.* Most commonly, students thought "more guidance on the application process" was essential for successful admission. In her experience, A.B. stated that "Professors will just be like, 'oh, you guys are applying' but there was no help [and] I didn't know what to do." In the same vein, E.F. said "a little more [of a] rundown on [the] whole process" was essential "because it was kind of confusing." According to her, this was a cohort-level problem, for example, "A lot of us, we have like a big group chat, like the whole class, and we're constantly asking questions and none of us know the answer." However, one student (i.e., G.H.) found respite from her application anxieties in the National Student Speech Language Hearing Association (NSSLHA) chapter where an "apply to graduate school meeting...on letters of rec [and] personal statements" was held. Though some students had success seeking assistance from the university career and writing centers, she expressed that "they weren't giving me as much constructive criticism as I would have preferred, so then I turned to the CSD professors."

Finally, comments in the *mentorship* theme cited peer-to-peer and professor mentorship as a potential lever of support, for example, "I feel like having a mentor and maybe in-person [NSSLHA meetings] would really help. I know for me, when I was writing my personal statements, I went to the writing center a lot and I found one girl that was amazing at helping me edit." A.B. concluded that she "went back to her every week for all my essays."

Discussion

This study aimed to investigate and describe the experiences and perceptions of senior undergraduate CSD students from underrepresented backgrounds as they underwent the graduate school application process. On average, the sample of students applied to approximately five graduate programs and reported a variety of influencing factors, including application costs and financial assistance, GRE requirements, and program location and prestige. Students from underrepresented backgrounds applied to a numerically higher number of graduate programs and averaged more volunteer/service-learning hours per week but numerically less research and practicum hours per week than their peers from majority backgrounds. Professors and the university career and writing centers provided the most support to students when preparing written application materials. Likewise, most students found securing letters of recommendation from professors to be easy and expressed confidence in gaining admittance to at least one CSD graduate program. The most significant barriers to graduate school applications for students from underrepresented backgrounds included challenges to learning and mentorship during the COVID-19 pandemic, limited experiential learning opportunities due to competition and financial demands, and difficulties forming meaningful connections with peers. General support from faculty and staff, assistance before and during the graduate school application process, and peer-to-peer and professional mentorship were highlighted as potential resources and supports to improve the experiences of underrepresented students.

"Am I Good Enough?"

Although students expressed a general sense of confidence in their ability to gain admittance to at least one CSD graduate program, the finding that financial demands (i.e., application and GRE costs, funding, and tuition), GRE requirements, and perceived level of support influenced student decision making during the application process is considered a key finding and supports previous empirical reports on influential factors of graduate admission (e.g., Guiberson & Vigil, 2021b; Kovacs, 2021; Sylvan et al., 2020). Considering that many students received a moderate to a great deal of assistance on their application materials, faculty, staff, and university-level resources (i.e., writing centers) play a consequential role in providing essential supports to prospective graduate students. This point is further emphasized by the fact that a majority of students reported securing letters of recommendation with ease.

Responses to open-ended questions during semistructured interviews with students from underrepresented backgrounds affirm that the most significant barriers to the graduate application process are complex and often intertwined. Student testimony that practicum experiences were difficult to procure is supported by prior literature (e.g., Mahendra & Kashinath, 2022) and is visible in the numerically lower number of hours per week reported by students from underrepresented backgrounds compared to their peers from majority backgrounds. Logically, if students are responsible for their own financial well-being or the financial well-being of their families during undergraduate training, unpaid internships and shadowing opportunities may be difficult to pursue. Additional time constraints due to job responsibilities outside of academia may also deter students from pursuing practicum experiences. However, more research is needed with a larger sample of undergraduate students to investigate significant group differences in the hours spent on various CSD-related

experiences. According to one student's comment, professors are typically perceived by students to be gatekeepers to graduate admission since they are "the people writing your letters of recommendations and they also [have] the insider aspect of what you should be doing throughout your years to help make your application more competitive." Although not empirically tested, whether and when students receive guidance from professors during their academic program may influence the degree to which students participate in extracurricular activities and plan for the graduate application process. This line of inquiry may also help to explain the finding that students from underrepresented backgrounds sought application assistance from different sources (e.g., family members and the university career and writing center) in comparison to their peers from majority backgrounds (e.g., professors and peers).

These highlighted barriers may have also contributed to the numerically higher number of submitted applications by students from underrepresented backgrounds as they may have attempted to "cast a wide net" in hopes of ensuring entry to a program. Alternatively, it is plausible that the availability of opportunities to assist faculty in research or shadow SLPs and audiologists in a clinical setting may have also played a crucial role in encouraging or dissuading diverse students from pursuing graduate school. Ultimately, more research is needed to better understand the experiences and perceptions of underrepresented students in various stages of undergraduate and graduate training and in different geographic and university-type contexts. The role of influencing factors nominated by students in this study warrants further investigation as they may mediate the effects of program-level DEIA efforts and partially explain decreased diversity between undergraduate and master's degree programs (ASHA, 2021b).

A Way Forward

Alarmingly, students from underrepresented backgrounds referenced the most cited barriers to graduate admission and preparation in the literature, including financial burdens (Fuse & Bergen, 2018), challenges engaging in experiential learning (Mahendra & Kashinath, 2022), and a lack of meaningful peer and professional connections (Alicea & Johnson, 2021; Mishra et al., 2021). Though causal inferences cannot be made with the current exploratory design, these findings provide cursory evidence that robust resources and supports are needed to recruit, retain, and support diverse students in the field of CSD. Potential action steps continue to be unearthed in the literature (e.g., Mohapatra & Mohan, 2021) and point to program-level shifts to adopt more holistic admission review processes (Mandulak, 2021), peer-to-peer mentoring and support initiatives (Girolamo & Ghali, 2021;

S. M. Greene, 2021), and efforts to improve psychological safety by reducing racial microaggressions (Mishra et al., 2021). For example, holistic admission practices may give less weight to grades and test scores and more weight to CSD-related experiences, letters of recommendation, and research experiences. Though the adoption of holistic admission practices may not reduce all perceived barriers to graduate admissions, particularly those highlighted by students from underrepresented backgrounds in this study (e.g., difficulty obtaining practicum experiences and application assistance from professors), they do prioritize materials like letters of recommendation and reduce the importance of GRE scores. Based on our findings, students from underrepresented backgrounds indicated obtaining letters of recommendation more easily than their peers from majority backgrounds, and both groups of students expressed that the GRE influenced their application decision making. Adopting holistic admission processes that reduce the importance of GRE scores may also decrease racial and ethnic disparities in future graduate cohorts, but more research is needed to investigate this phenomenon. As interviewees in this study cited financial burdens as a significant barrier to graduate admissions, it is reasonable to infer that the current cost of taking the GRE (i.e., $220) and requesting additional score reports (i.e., $30 per report; Educational Testing Service, n.d.) may have contributed to that perceived burden. Future investigations would benefit from interviewing not only racially and ethnically diverse students but also students from varying socioeconomic statuses.

Furthermore, departments could provide frequent information sessions that explicitly name resources available to students (e.g., Office of Accessibility Services), promote spaces for peer connection (e.g., Hispanic Caucus for ASHA, National Black Association for Speech-Language and Hearing, NSSLHA), and define concepts that may be foreign to first-generation students (e.g., office hours, remediation plans, letters of recommendation). Prior research suggests that student professional organizations, like NSSLHA, are viable ways for preservice training programs to help their students acquire essential knowledge, form meaningful connections with peers, and foster advocacy skills (e.g., Bond, 2016; Lugo et al., 2022). Thus, CSD programs and scholars are uniquely situated to improve DEIA by piloting novel strategies, systematically evaluating the outcomes, and publishing the results for other programs to adopt (Mohapatra & Mohan, 2021).

Limitations

This study was considered a preliminary approach to examining students' experiences and elicited insights on the

graduate application process from students; however, the authors recognize that this limits conclusions that can be drawn. Broader study of other perspectives (e.g., faculty) is missing from this study and would add to consideration of implicit bias and privilege in admissions decisions (Ellis & Kendall, 2021). Furthermore, the study design has inherent limitations, as students may interpret questions differently and data are based on self-reported information.

Recruitment efforts were directed at one program, which restricts generalizability to other CSD programs. It is also possible that sampling bias limits the ability to make inferences to other samples since students with highly positive or highly negative experiences may have been more inclined to respond to the invitation to participate. Additionally, the small sample size and low power of this study limited the investigators' ability to detect statistically significant group differences between students from underrepresented and majority backgrounds. Likewise, between-groups differences in perceived barriers to graduate applications could not be explored as only students from underrepresented backgrounds were invited to participate in semistructured interviews. Nevertheless, the perspectives of the current participants provide preliminary insights that may be helpful to other institutions and lend to future directions for inquiry in other CSD programs.

Future Directions

Future research should examine DEIA in graduate admissions with larger sample sizes across larger and more varied geographic regions. Additional empirical study of implicit bias and privilege in admissions is needed to add to our understanding of how applications are rated by faculty and how admissions decisions are determined (Ellis & Kendall, 2021). Burgeoning literature reports promising outcomes of holistic review of graduate applications to increase diversity in health professions (e.g., Glazer et al., 2014; Guiberson & Vigil, 2021a; Mandulak, 2021; Wong et al., 2021); however additional study of outcomes specific to CSD programs is needed to identify effective mechanisms of diverse CSD programs and an effective path to systems change in graduate admissions. Similarly, additional qualitative investigation into the perceived barriers to graduate applications by students from underrepresented and majority backgrounds is required to assess the extent to which students' experiences during the application process differ based on demographic information.

Additional research is needed to explore and empirically examine top-down supports or institutional and organizational supports, such as financial and social support programs (Snyder et al., 2018). Further consideration of personalized supports for students, such as peer

mentoring programs (S. M. Greene, 2021) and student-led support groups (e.g., Girolamo & Ghali, 2021), is also needed to identify effective ways to enhance students' success rate, reduce stress, and foster retention of students from underrepresented backgrounds. Promising approaches have been proposed, such as affinity groups or safe spaces (Alicea & Johnson, 2021), that warrant further consideration to improve retention of students from underrepresented groups. Research in the fields of science, technology, engineering, and mathematics have explored the concept of counterspaces for underrepresented student populations as a promising tool for the recruitment, retention, and support of such populations (e.g., Ong et al., 2018). Counterspaces have been defined as academic and social safe spaces in which students from underrepresented populations are presented with opportunities to create and maintain a "positive collegiate racial climate for themselves" in which their experiences and knowledge are validated and viewed as important (Ong et al., 2018). Creating opportunities for and supporting student-led organizations, programs, and events (e.g., networking groups, minority leadership groups in CSD, guide-by-your-side peer-to-peer mentoring, and informal social gatherings), specifically for underrepresented populations within CSD programs, can also provide an additional level of support for this population.

Data Availability Statement

All data obtained and/or analyzed in this study are available from the authors upon reasonable request.

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