Distribution Agreement

In presenting this thesis or dissertation as a partial fulfillment of the requirements for an advanced degree from Emory University, I hereby grant to Emory University and its agents the non-exclusive license to archive, make accessible, and display my thesis or dissertation in whole or in part in all forms of media, now or hereafter known, including display on the world wide web. I understand that I may select some access restrictions as part of the online submission of this thesis or dissertation. I retain all ownership rights to the copyright of the thesis or dissertation. I also retain the right to use in future works (such as articles or books) all or part of this thesis or dissertation.

Signature:

Riley Hunt November 29, 2023

Barriers to participation in global health programs amongst HUGS

By

Riley Hunt

MPH

Hubert Department of Global Health

Monique Hennink, PhD

Committee Chair

Barriers to participation in global health programs amongst HUGS

By
Riley Hunt

Bachelor of Science in Health Promotion
University of Georgia
2021

Thesis Committee Chair: Monique Hennink, PhD

An abstract of
A thesis submitted to the Faculty of the
Rollins School of Public Health of Emory University
in partial fulfillment of the requirements for the degree of
Master of Public Health
in Hubert Department of Global Health
2023

ABSTRACT

Background: Representation of historically underrepresented groups (HUGS) within the science field is important to ensure diverse perspectives and experiences are present in all aspects of public health initiatives, policies, and research. However, HUGS individuals are not strongly represented across various scientific disciplines, particularly within global health. Therefore, this study aims to understand challenges that prevent HUGS from participating in global health training programs and/or careers. From these results, interventions and strategies that facilitate HUGS involvement in global health work and training can be identified and better supported.

Methods: We conducted qualitative in-depth interviews with 18 HUGS participants to identify barriers and facilitators to pursuing and participating in a global health career and/or training program. Three types of participants were purposively recruited: (1) HUGS who graduated from the Fogarty Global Health Fellowship Program (FGHFP); (2) HUGS who applied to the FGHFP but were not accepted, withdrew or who declined; and (3) HUGS who did not apply but were eligible for the FGHFP. Data was analyzed using applied thematic analysis.

Results: Results were structured by three stages in global health career development [i.e., interest in a GH career, application to GH training programs, participation in GH training programs]. Four key barriers were found across these stages [i.e., lack of exposure, lack of support, global career barriers, and financial barriers]. We developed a matrix comprising the three career stages by the four barriers to depict the results. While barriers were more influential to certain stages, there was an overlaying connection. Across themes, barriers compounded as stages progressed. Within each stage, barriers accumulated resulting in an abundance of challenges encountered by HUGS. Potential facilitators that apply across all barriers include various forms of mentorship, increased HUGS representation in global health career settings, expanded institutional support for HUGS participants, and more global health career exposure.

Conclusion: The findings from this study illustrate various circumstances that reduce HUGS participation in global health training programs and careers. Providing specific outreach and multiple levels of support to HUGS individuals throughout their global health career development is critical to increasing HUGS inclusion in the global health career field.

Barriers to participation in global health programs amongst HUGS

By
Riley Hunt

Bachelor of Science in Health Promotion
University of Georgia
2021

Thesis Committee Chair: Monique Hennink, PhD

A thesis submitted to the Faculty of the
Rollins School of Public Health of Emory University
in partial fulfillment of the requirements for the degree of
Master of Public Health
in Hubert Department of Global Health
2023

ACKNOWLEDGEMENTS

Thank you to Dr. Monique Hennink who has been the epitome of a great professor, mentor, and advisor to me. You continuously pushed me to improve my work while still giving me constant positive feedback and reassurance. Your wisdom and expertise strongly influenced my love for qualitative research. Thank you for the endless patience, support, and guidance. This project truly could not have been done without you.

Thank you as well to the EDGE team for acknowledging the need for this research, providing the data used in this project, and giving me valuable feedback and support. Thank you for fostering a collaborative and supportive environment that motivated me to provide my best work to you all and this study. I look forward to continuing our work together and expanding on this project.

To my family, thank you for providing me with the space and support needed to complete this project. I am grateful for your love and admiration every day. Your encouragement, unwavering support, and sacrifices have been instrumental in all my academic and personal achievements. Making you all proud will always be my biggest goal.

To my friends, thank you for being the light and laughter I needed during overwhelming times. You guys have worked on this project alongside me without having the faintest clue what I was doing. Your constant support, encouragement, and belief in my abilities is more impactful than you'll ever know. Our friendship is a treasure that I hold close to my heart.

A huge thank you to Dr. Alexis Bender. Although you didn't work on this project with me directly, your mentorship and support has been endlessly resourceful. Thank you for not only enriching my knowledge of qualitative work, but also giving me the opportunity to learn and grow under your guidance.

Lastly, thank you to the HUGS participants who provided their input and stories for this project to be made possible. I appreciate their time and openness and hope this work does justice to their experiences.

TABLE OF CONTENTS

CHAPTER 1: INTRODUCTION

A minority, or minority group, refers to a subgroup of the population with unique characteristics that differ from those of a majority, often more privileged, group. These characteristics are based on race, ethnicity, religion, gender, or other defining attributes that are often subjected to oppression and discrimination by those in more powerful social positions [1]. Minority representation, specifically within the science field and other leadership roles, is important to ensure diverse perspectives and experiences are present and influential within all aspects of public health initiatives, policies, and research. Minority inclusion in these types of roles has proven to foster diverse voices in decision-making processes and create more informed, well-rounded public health action that accounts for the needs and interests of a broader range of individuals and communities [2]. This inclusive representation is particularly important when taking into account that, within the U.S. and globally, disparities often disproportionately affect minority populations due to various factors such as socioeconomic status, discrimination, and limited healthcare access [3].

Although minority representation is projected to increase on a national level in the U.S., minorities are not strongly represented within higher education as a whole, or within various scientific fields and disciplines. This lack of diversity poses challenges and limitations in scientific progress and innovation [4]. Increasing the inclusion of minorities in scientific career fields can help address and combat healthcare disparities that impact these minority groups. It can also create a more collaborative global health workforce that enhances cross-cultural competencies and provides more inclusive healthcare at the international level [5]. Additionally, increasing minority representation in all forms of healthcare, such as within research and medicine, increases the number of diverse individuals who will provide care to the underserved.

Given this lack of minority inclusion within science and global health work, this study aims to understand challenges that prevent minorities, also referred to as historically underrepresented groups (HUGS), from participating in global health training programs or career fields. From these results, interventions and strategies that facilitate HUGS involvement in global health work and training will be identified and supported.

Historically Underrepresented Groups

As minorities have a longstanding history of experiencing exclusion and marginalization, they are often referred to as historically underrepresented groups. Historically underrepresented groups, or HUGS, is a term used to classify individuals from racial and ethnic groups that have been shown by Census data and other federal measuring tools to be underrepresented on a national basis [6]. This term also refers to groups who have been denied access and/or suffered past institutional discrimination in the United States. Racial and ethnic groups classified as HUGS include Blacks or African Americans, Hispanics or Latinos, American Indians or Alaska Natives, Native Hawaiians, and other Pacific Islanders [7]. Census data from 2022 reveal that the US Black population represents approximately 13% of the population aged 18 to 64 years. American Indian and Alaska Natives represent less than 1%, Native Hawaiian and Other Pacific Islanders 0.3%, while Hispanics of any race account for approximately 19% of the US population [8]. In comparison, White individuals account for 76% of the population and non-Hispanic White individuals represent nearly 60%. While these minority group population percentages are expected to rise in the upcoming years, there is more demand for the needs of these populations to be met and align with this projected shift in demographics [9]. Meeting these needs is also essential to dismantle structural barriers that perpetuate inequities among

HUGS. This change will in turn create a more unbiased and representative community that better reflects the needs and interests of all members of society [10].

HUGS are underrepresented and marginalized in common societal pursuits due to systemic discrimination which creates disadvantages at multiple levels [11]. This includes barriers within various areas such as education, employment, housing, healthcare, and political or other leadership representation [12]. Disadvantages within these domains are comprised of limited opportunities, unequal access, racial profiling, biased policies, and other factors related to systematic discrimination [13]. Given the persistent and overlapping systematic barriers faced by historically underrepresented groups, there is a clear and urgent need to address challenges that hinder HUGS advancements and find solutions to elevate their representation and influence in society, particularly within higher education and scientific careers [12].

CHAPTER 2: REVIEW OF LITERATURE

Educational Disparities Among HUGS

Individuals from historically oppressed and socioeconomically deprived backgrounds, such as HUGS, often lack access to the same educational opportunities garnered by their more privileged, majority counterparts. Disparities in education for HUGS involve unequal access to quality education and resources resulting in higher dropout rates, fewer educational options, barriers to pursuing higher education, and lower salaries [14]. In 2021, the National Center for Education Statistics found that dropout rates for HUGS students aged 16-24 were nearly twice that of White students [15]. Additionally, in 2019, the typical Black worker earned 24.4% less per hour than the typical White worker which is largely contributed to this racial gap in educational attainment [16].

Within the U.S., these challenges regarding diversity and inclusion in educational institutions affect HUGS individuals at all education levels. However, these challenges are exacerbated when seeking higher education as structural policies, procedures, and articulation agreements are often contributing factors to the lack of diversity within universities [17]. At all levels of education, the underrepresentation of HUGS is evident through the racial make-up of the student body, leadership, faculty, and administration in the U.S. [18]. For instance, in 2020, about 55% of institutions had less than the expected share of both students and faculty from underrepresented populations, with more representation being present among students than within faculty and leadership [19]. Additionally, data from the U.S. Department of Education reveals a persistent racial gap in college graduation rates. In 2015, nearly 68% of all White students graduated with a bachelor's degree in six years whereas only 45.7% of Black students had earned a bachelor's degree within that same time frame [20].

Historically, access to education, particularly post-secondary education, for minority groups has been discouraging [17]. While most universities promote the importance of student academics and professional development, a lack of diversity hinders the adoption of these advancements for people of color. Additionally, universities that do not prioritize diversity are not emulating the population of most communities, especially in the U.S. where the minority population continues to grow [17]. This lack of diversity in higher education, and limited advancements in promoting diversity, is also identifiable at the government level with the recent U.S. Supreme Court decision to ban affirmative action at colleges. Affirmative action played a critical role in eliminating unlawful discrimination among college applicants by ensuring students of color receive fair consideration for admissions given the systemic barriers that have historically created inequities in access to higher education for these students [21].

Increasing access to higher education for HUGS individuals will also result in increased diversity among university faculty and leadership which is critical to ensuring cultural competency in the classroom [22]. Cultural competency within an educational setting involves understanding, analyzing, and validating cultural submersion into the curriculum and overall classroom environment [23]. It is essential for setting values and principles and demonstrating behaviors, attitudes, policies, and structures that allow students to effectively work in cross-cultural settings. Without this cultural knowledge and culturally competent leadership, higher education is only designed for the majority population without consideration of the minority. However, only within the last 20 years have cultural competency implementation efforts been taken into effect among universities [24]. While advancements have been made, there are continuous setbacks, such as the U.S. Supreme Court ban on affirmative action, that supports the

need to make diversity and cultural competency a priority among universities and higher education settings.

A 2019 study that investigated diversity disparity in a Midwest Research University by interviewing minority faculty and students supported this need to implement strategies that will adequately encourage inclusive policies within the higher education system [25]. Participants found that while the university had a diversity policy, there was a lack of communication and implementation which limited the influence of the policy. All participants also felt that diversity as an organizational value is essential for the recruitment and retention of people of color in both the student, faculty, and leadership population. Similar findings were also found 30 years prior in a 1989 study focused on cultural competency in higher education settings [26]. This research suggested that disparities for students and faculty of color results in a cycle of three cultural characteristics: cultural destructiveness, cultural incapacity, and cultural denial/indifference. Cultural destructiveness is demonstrated when a privileged, often majority population, uses power to express superiority which diminishes and devalues other cultures [27]. This in turn leads to cultural incapacity which involves the maintenance of one cultural group remaining dominant [28]. This is often led by the privileged majority population who support institutional and systematic bias in order to maintain this dominance. This then results in cultural denial/indifference which suppresses cultural differences and denies the concept of privilege. In combination, the cycle of these three characteristics defines the cause for HUGS disparity and underrepresentation in higher education settings [27].

Lack of HUGS Representation in STEM

A lack of diversity within universities impacts all aspects of education including tertiary-levels of schooling and training programs. This is particularly true within the medical field. The

Association of American Medical Colleges found that more than half (54%) of U.S. medical school graduates during the 2018-2019 academic year were White individuals [29]. Despite the Black population being roughly 13% of the nation, they represent less than 6% of the medical workforce and medical student population [29]. Furthermore, other unrepresented groups, including American Indian/Alaska Native and Native Hawaiian/Pacific Islanders make up less than 1% of medical students [30]. In general, when compared to their age-cohorts, HUGS individuals lack representation in science-baccalaureate earners, science-PhD earners, and in overall biomedical/health service workforce [7]. Additionally, for those who have pursued a scientific degree, research shows that minority scientists compete less successfully for NIH funding compared to their nonminority peers [31].

The underrepresentation of HUGS in STEM careers and training programs has been attributed to a myriad of factors. A 2021 study that explored reasons for the underrepresentation of HUGS graduate students within various STEM disciplines found that these individuals were more likely to experience difficulties in accessing resources, adjustments to home and family life, amplification of existing nonfinancial issues, and strong fears for the future [32]. A lack of nonacademic support, such as family and peer support systems, has also been found to hinder HUGS involvement and pursuit of scientific disciplines. A 2012 study found that although family and peers may provide overall support for graduate students from underrepresented populations, HUGS students, particularly first-generation HUGS students, describe having family members confused by their pursuit for a higher education and an overall concern for them to acquire employment [33]. These students also felt they lacked essential family and community connections to fully pursue a higher-level STEM education and that there was a disconnect between their community and their academic environment [33].

Lack of HUGS Representation in Public/Global Health

This need for a diverse workforce is also critical in the field of public and global health. Both areas of work aim to address health disparities and improve health outcomes for all populations. Therefore, without diversity, there cannot be adequate collaboration that addresses health disparities, cultural competence and understanding, and promotion of equity at the international level [34]. Global health in particular has historically been affected by power imbalances and biases. While HUGS are often incorporated in global health research, they are underrepresented in the global health career field. Researchers, funders, and universities from high-income countries, who are predominantly not HUGS, continue to dominate global health research and career roles [35]. A need for HUGS representation in global health, and general public health work, has been widely identified. The U.S. Department of Health and Human Services emphasizes the need for diversity within public health and healthcare workforce training programs that promotes improved public health and healthcare systems by increasing opportunities and participation of minority individuals in health-related practices with whom they share a common race, ethnicity, culture, or language [36]. Further studies also encourage training programs for underrepresented minority populations in public health and healthcare to help decrease and eliminate disparities on a national and global level [37].

Despite this ongoing need for more inclusivity in public health work, healthcare and public health professionals still tend to be less diverse than the populations they serve. Roughly 42% of the governmental public health workforce identify as racial or ethnic minorities, however, the majority of communities they tend to work with are HUGS [38]. For instance, only 6% of public health students identify as Hispanic Americans despite 12% of the U.S. population being Hispanic [39]. Additionally, there is much research to show that public health practitioners who identify as HUGS are better equipped to serve communities and clients who are also HUGS

as they trust services from people who also come from similar, marginalized backgrounds [38]. This is evident within the U.S. and on the global level. For example, Black Americans have been shown to have better health outcomes after working with Black doctors [40]. In addition, many racial and ethnic minority organizations emphasize a need for more minority representation in healthcare and public health work. This includes having more professionals work within their native countries or with those of a similar race or background [41].

Reasons for this lack of diversity in public health work stems from a variety of factors often related to systematic barriers. The overall underrepresentation of HUGS in pursuing higher education, particularly science-related education, has been connected to the lack of HUGS representation in public health work as a graduate-level degree is often required. Financial aid or other resource opportunities is also not frequent in public health training programs, making them less accessible to those facing economic barriers. There is also a general lack of knowledge among young students about public health careers [39]. This is exacerbated for HUGS students as White Americans hold the majority of healthcare, public health, and overall health-related leadership positions. This further isolates HUGS students from getting connected with public health work and educational opportunities [38].

Interventions

To promote more HUGS diversity in scientific-related work, including global health, exposure to medicine and science is critical to create preliminary interest. Specifically, early exposure for adolescents and young adults to various healthcare fields has been shown to increase interest in, and the pursuit of, medical and science education [42]. Early exposure to these fields includes volunteering activities that help adolescents learn responsibility and empathy alongside relationship building and community connection in relation to scientific

work. Other exposure includes early clinical and clerical experience which allows students to witness, learn, and gain an understanding of multiple healthcare perspectives [43].

However, the importance of these exposure interventions is prioritizing exposure to HUGS individuals. Exposure to global health careers, while impactful and beneficial, often caters to privileged individuals who have the means and resources to access these exposure-related opportunities. The intersection of race and lower socioeconomic class in the US makes these types of opportunities less accessible for underrepresented groups. Common barriers that HUGS face, such as funding and limited educational resources, prevent the ability for these individuals to actively pursue these types of early exposure trips and work. These barriers are exacerbated for HUGS individuals as they are often first-generation students in their family to pursue higher education and/or a science-related degree [44]. Therefore, they are less likely to have the skills and knowledge necessary to pursue healthcare career exposure in an educational setting. Supportive initiatives such as scholarships, mentoring, and HUGS specific internships can be beneficial in overcoming these barriers.

Recruitment of HUGS through diligent outreach is another established intervention for increasing HUGS representation in scientific career fields. This recruitment strategy has been effective with college-level students where minority student organizations are already present and easy to connect with. Other faculty and administrative leaders can also be collaborated with to foster connections between organizations to identify obstacles preventing HUGS involvement in scientific career paths and develop potential solutions. However, within this intervention strategy, challenges become present when working with colleges that have low numbers of HUGS students [45].

Another intervention strategy is the intersection of culture and medical mission trips. These types of trips are often separate in which cultural mission trips are rooted in religious purposes whereas medical mission trips are only available for those already pursuing a scientific career path and focuses only on exploring different healthcare systems and approaches [46]. The framework of these trips may be expandable and/or overlapped to include the introduction of global health career possibilities. Particularly for HUGS individuals that are interested in pursuing a science-related career path while also wanting to stay connected to their culture and provide support to their community [47].

Gaps in Knowledge

While there is substantial evidence to support a need for more HUGS inclusion within scientific career fields and educational pursuits in the U.S., more information is needed particularly in relation to global health work. Literature and statistics related to HUGS representation in healthcare and public health in the U.S. only provides general reasoning for the lack of diversity in these disciplines. Therefore, there is a strong need to investigate this topic more and explore specific causes for the continuous lack of HUGS representation in public health careers. More specifically, very little research has been done on HUGS inclusion in global health training programs likely due to a small number of global health training programs provided in the U.S.[48]. Additionally, few studies have explored the reasoning behind this continuous lack of diversity in public health career pursuits from the perspective of HUGS individuals themselves. Therefore, this study aims to understand the barriers that prevent HUGS individuals from participating in global health careers and/or training programs. Inversely, this study will also explore strategies that help facilitate HUGS inclusion in global health education, training, and careers. Together, these two aims will provide a deeper explanation for HUGS

exclusion from global health work and training as well as provide suggestions for interventions that can elevate HUGS representation in this area of work.

CHAPTER 3: METHODOLOGY

Study design

A cross-sectional study design was used. Qualitative methods were deemed most effective to meet the study objectives to capture the views and experiences of HUGS themselves regarding the barriers and facilitators they experienced in pursuing and participating in a global health career and/or training program.

Selection of participants

To be eligible for the study, participants needed to self-identify as members of a Historically Underrepresented Group (HUGS), defined as individuals from racial and ethnic groups that have been shown by Census data and other federal measuring tools to be underrepresented on a national basis and/or suffered past institutional discrimination in the United States [6]. Racial and ethnic groups classified as HUGS include Blacks or African Americans, Hispanics or Latinos, American Indians or Alaska Natives, Native Hawaiians, and other Pacific Islanders. Three participant groups were purposively recruited to capture diverse perspectives: (1) HUGS who graduated from the Fogarty Global Health Fellowship Program (FGHFP); (2) HUGS who applied to the FGHFP but were not accepted, withdrew or who declined; and (3) HUGS who did not apply but were eligible for the FGHFP.

To recruit participants for group 1 (n=7) and group 2 (n=3), existing databases of HUGS applicants in the Fogarty Global Health Fellowship Program were used as well as lists of current and former participants from three FGHFP consortia (VECD, GLOCAL, UJMT)[1]. Recruitment for group 2 was later expanded to other FGHFP consortia groups (HBNU, GHES, NPGH) to

[1] FGHFP Consortia included VECD (Vanderbilt, Emory, Cornell, Duke), GLOCAL (UCSF, UCLA, UC San Diego, UC Davis), UJMT (UNC, John Hopkins, Morehouse, Tulane), HBNU (Harvard, Boston University, Northwestern, University of New Mexico), GHES (Berkley, Yale, University of Arizona, Stanford), and NPGH (University of Washington, University of Michigan, University of Hawaii, University of Minnesota, Indiana University)

help increase recruitment success. From the list of eligible individuals within each group, participants were purposively chosen based on HUGS classification, gender, HUGS ethnicity, and program cohort year. Variation in participant characteristics is depicted in Table 1. Recruitment of participants for group 3 (n=8) was more challenging, therefore we used a snowball recruitment strategy. This involved networking across all six FGHFP consortia groups to promote awareness of the study and attract potential participants through word of mouth. Group 3 recruitment was also expanded to include organizations such as the Council of Universities in Global Health (CUGH), HBCUs, and URM-serving institutions that were not part of the existing consortia. These organizations were contacted to disseminate study recruitment details among their current students and alumni. Eligible individuals were then contacted via a recruitment email from the study investigator team to participate in an interview. Saturation was determined by reviewing interview data as it was collected to identify repetition, new issues, or nuances of issues. Saturation was reached at 18 interviews after no new themes were introduced while reviewing interview transcripts. By recruiting from a homogenous population and focusing on gender, HUGS ethnicity, and program year variation, saturation could be reached with a smaller sample size.

Data collection

In-depth interviews were conducted synchronously via the Zoom platform and ranged from 30-60 minutes each. Interviews were recorded through the Zoom recording system. Video cameras were on during interviews to facilitate greater rapport with participants and probing responses. Interviews were conducted by trained qualitative interviewers with public health backgrounds to increase data richness. Study instruments included three semi-structured in-depth interviews (IDI) guides that were tailored to FGHFP participation differences between all three

groups. The IDI guide for group 1 focused on barriers and facilitators within three categories: (1) exposure/interest in a global health career; (2) application to FGHFP and (3) participation in FGHFP and (4) recommendations to increase HUGS inclusion in global health careers. The IDI guide for group 2 focused on (1) exposure/interest in global health careers; (2) application to FGHFP and (3) recommendations to increase HUGS inclusion in global health careers. Group 3 IDI guide focused on (1) exposure/interest in a global health career and training programs and (2) recommendations to increase HUGS inclusion in global health careers.

Data Analysis

Interview transcripts were initially auto-generated using the recording and transcription functions on Zoom. These auto-generated transcripts were then reviewed with the audio recording to verify accuracy of verbatim transcription and correct errors. The transcripts were then checked by a second analyst. All transcripts were then deidentified for participant anonymity. Transcripts were labeled, copied into Microsoft Word, and stored in a secure folder accessible to only members of the research team. To conduct analysis, all transcripts were uploaded to the qualitative research software MAXQDA [49] which allowed for the management, systematic analysis, and comparison of text documents. A thematic analysis was then conducted using the following steps. *1. Familiarization of data*. Two members of the research team read through the first IDI transcript of each participant group. These data were initially reviewed and memoed to identify potential themes, barriers, and facilitators for preliminary code development. *2. Code development*. A draft codebook was first developed with deductive main codes using the group 1 interview guide as a framework. Once memoing was complete, the deductive codes were supplemented with inductive subcodes to finalize the codebook for analysis. Code definitions were made to describe each code and how it is distinct

from other codes. *3. Coding*. After codebook development was complete, one research team member coded all transcripts by codes in the codebook. Once no new themes or issues arose, the codebook and coding process was finalized and coded segments could be retrieved to begin the summarization of ideas and concepts. *4. Describing themes*. The research team used these summaries to begin identifying relationships between codes, create comprehensive descriptions of potential barriers and facilitators, and identify any nuances. *5. Comparisons*. Comparisons of barriers and facilitators by participant characteristics were then conducted to recognize patterns in the findings by participants. *6. Conceptualization*. Once summaries and comparisons were complete, commonalities within barriers were identified to create groupings that encapsulate larger themes that expand across the various stages of global health career development. Within each theme, the organization of issues by stage of global health career development was done to create a clear conceptual framework that aligns barriers to distinct themes and stages while still displaying interconnectedness among them. Depth and breadth of issues within each theme/stage were then described. Groupings of facilitators by theme was also done to show a clear linkage between certain barriers and facilitators. Themes within the conceptual framework were verified by reviewing data to ensure that all relevant barriers were captured within one of the four key themes. This enabled the research team to refine and clarify themes to assess that the conceptualization of the study findings was comprehensive.

Ethics

The purpose, methods, and ethical considerations (e.g., protection of personal information) of the study were verbally explained to all participants before beginning each interview. Consent to participate in the study as well as allowing staff to record the interview was also asked of participants and confirmed before each interview. Participants were informed

that they could withdraw their consent at any time. This study received ethical approval from Emory University and Morehouse School of Medicine Institutional Review Board.

CHAPTER 4: RESULTS

The study results are structured by the stages of participation in global health training programs: interest in global health, application to global health training programs, and participation in global health training programs. Barriers within each of these stages were grouped into four core themes: (1) Lack of exposure, (2) Lack of support, (3) Global career barriers, and (4) Financial barriers. While barriers are structured distinctly to each theme and stage, there is an overlaying connection between them. Across each theme, barriers build upon one another whereby barriers in interest to global health add to barriers to application to programs and to barriers in participation in GH programs – such that barriers are compounding as the stages progress. Within each stage, barriers are experienced simultaneously and accumulate to an abundance of challenges HUGS participants encounter with each stage to a global health career. This conceptual structure of results is shown in Figure 1 and described below.

Lack of GH Exposure

Interest

HUGS participants stated that their interest in a global health career was curtailed by their lack of global health experience and by being a first-generation college student (see Figure 1). Participants described their lack of experience with global health research or international fieldwork as a deterrent to pursuing a global health career. For example, they described having no experience with writing research grants, seeking ethical approval, data collection processes, or working in a community or international setting. They felt that this lack of global research experience limited the knowledge and skills that would be needed to pursue a global health career. A second barrier to HUGS participants interest in a global health career stemmed from

being a first-generation college student[2], whereby they were unfamiliar with how to navigate an academic career. They described academic settings and procedures, professional practices, and related social norms as unfamiliar and daunting to them. This created feelings of self-doubt and inadequacy with their ability to succeed in a global health career. HUGS participants also stated first-generation students have limited connections for networking in the field which they saw as necessary to access global health career opportunities.

Application

Participants lack of exposure to global health was described as a barrier to applying to global health programs. During the application phase, participants described feeling confused and lacking confidence. They explained their lack of familiarity with how to develop an effective fellowship application [e.g., writing an academic research proposal, finding mentorship, building and justifying a budget], particularly amongst those with limited research or global health exposure. The confusion described by participants was partly due to a succession of difficulties with the application process whereby once one challenge was resolved, another would appear making the application process complicated. Participants also stated that their lack of experience and familiarity in global health and academic settings led to a lack of confidence in getting accepted into a global health program. Specifically, they were unsure if they completed the application correctly, therefore doubting their capability of getting accepted into the program.

[2] The term "first-generation college student" used here refers to being the first in ones' family to pursue higher education as well as having no family members in a global health or healthcare-related career field.

Participation

While participating in global health programs HUGS participants described experiencing 'imposter syndrome' by feeling like they didn't belong. They described that feeling out of place or like an imposter was caused by their limited experience in the global health field or in academic settings more generally. HUGS participants stated that while participating in the program, they were consistently questioning themselves by asking if they were good enough or whether they belonged in global health. They also described feeling like their skills and abilities were inadequate when comparing themselves to their colleagues whom they viewed as more qualified and experienced in the field. Additionally, participants explained that stereotypes and biases towards HUGS and their own self-doubt on their work abilities exacerbated their imposter syndrome and lack of belonging. Feelings of self-doubt and inadequacy caused by a lack of experience in global health began while considering a global health career and continued during the fellowship application process and culminated in imposter syndrome while participating in the program (as depicted by the flow of chevrons within *Lack of GH Exposure* in Figure 1).

> "The biggest challenge? I feel like imposter syndrome is definitely one of the larger ones (…) especially being the only underrepresented minority, knowing that I don't have like a lot of insight in regard to what I'm doing. Aside from the things that my mentor shared with me, which I feel like I didn't really pick up until I was in the fellowship. So before and during the fellowship I didn't really know as much as I felt like everyone else did, even when we were meeting, even when I was submitting my applications and stuff, I feel like I was just always questioning what I was doing, if it was enough." – Grp 1 IDI 2

Lack of Support

Interest

A lack of support curtailed HUGS interest in a global health career, whereby they described a lack of HUGS role models, few HUGS mentors, and the need for a disciplinary shift without support. Participants felt there were no representative role models inspiring them to pursue a global health career, because they did not see other HUGS individuals in the global health field or in successful roles in global health work. Participants felt that having so few HUGS mentors in global health was a deterrent to their interest in the field, since they may not have representative mentors to introduce them to key contacts and guide them through a global health career. Another element of the lack of support felt by HUGS was the concern about effectively transitioning disciplines into global health without any support. Examples of prior disciplines practiced by participants before entering global health included various medical specialties [e.g., cardiology, internal medicine, orthopedic, veterinary medicine], epidemiology, or basic research. This deterred participants' interest in pursuing a global health career because they described difficulty in adapting to a global health career field where they were a novice. They also described needing to overcome new challenges that were unfamiliar to them as they did not experience them in their previous career field.

> "(…) they brought in professionals that are doing this type of global health work, and I felt like there were not enough historically underrepresented researchers that were part of giving those. I want to see people that look like me or like that are part of historically underrepresented groups giving these presentations not just people that are typically overrepresented and in this sort of in this sort of way." – Grp 1 IDI 6

Application

The lack of support was also present when applying to global health programs, whereby participants experienced discouragement from a global health career from their professors, peers, and family. They described non-global health mentors, work colleagues, and professors being unsupportive of their application and transition into a global health career. This discouragement was partly due to participants typically not having an MPH degree or other previous experience with global health work. Participants were also discouraged by friends and family on their application to global health programs due to concern about their safety and financial rewards. Friends and relatives worried about their safety while working abroad, particularly for women, as well as concerns about the salary levels of a global health career being sufficient. Participants felt discouraged to apply to global health programs without the support of their family, and that they may disappoint them by not pursuing a more traditional career route expected of them. For example, participants stated that family members expected them to work an office job with ideal work schedules, whereas a global health job required flexibility and was less predictable due to travel requirements. These expectations and concerns were also culturally based whereby relatives preferred HUGS participants to choose high-paying traditional jobs [e.g., medical doctor] which they perceived had greater value and prestige than a global health career.

Participation

The lack of support felt by participants was confounded during their participation in a global health program, whereby they felt isolated in several ways. Participants described feeling lonely and disconnected from others while overseas due to a lack of emotional support and camaraderie with peers. Participants described not having a peer group of other HUGS individuals to identify with, which caused feelings of isolation, due to a lack of belonging and

support from others in the program or their study community. Feelings of isolation were confounded by not knowing what their peers were doing in terms of career skills and feeling hesitant to ask due to a lack of confidence in the global health field, thereby further increasing their isolation. Participants also felt isolated while in the program due to a lack of guidance and institutional support. They described feeling a need for support and mentorship from the program while trying to navigate working in a global health setting as a HUGS individual.

Global Career Barriers

Interest

As illustrated in Figure 1, conducting global research, separation from family, and cultural competence challenges were described as barriers to pursuing a global health career for HUGS participants. Participants described that the global nature of research posed a barrier to seeking a career in global health. For example, the travel burden of an international job was seen as a barrier, as it requires getting visas, conducting field work in overseas locations and concerns about safety abroad as a woman. The separation from family while working abroad was described as an additional deterrent. Participants recognized the need for a supportive family and/or spouse to help manage home demands while participants are working abroad. This was a particular concern amongst female participants and those with children, due to societal and cultural expectations for mothers to sacrifice their career to raise a family. However, all participants described the moral struggle of choosing between being with their family and the necessity of working abroad in a global health career. Challenges with cultural competence were also recognized by participants as a barrier to interest in a global health career. They discussed previous experiences in which supervisors or colleagues did not acknowledge or respect cultural aspects of the participant and their work which deterred them from working in a global health

setting where cultural competence is necessary. Similarly, HUGS participants wrestled with separating modern global health work from colonial influences and Western mindsets that predominantly defined global health in the past.

> "I mean, there's this thing happening in the sector right now, right? Decolonization. And what that means, and where that leaves people like me, I'm definitely like on board with that agenda, but it also brings into question what the role for someone like me is in global health. So I think that it's not like one person who has been discouraging me to be a part of global health. But it's also like me asking myself, what is my role?" – Grp 2 IDI 2

Application

Concerns about global travel continued to be a deterrent to applying for global health training positions. Participants described discouragement from family and friends who were uncertain about the long-term implications of a career that may require frequent international travel. This discouragement was largely voiced by family of female participants who received additional discouragement from family due to their safety while working abroad and concerns about balancing family responsibilities with a global career. However, all participants who had not previously worked abroad discussed discouragement for applying to global health training positions due to their lack of experience with traveling abroad for work purposes.

Participation

While working abroad, participants described challenges with balancing family needs with their career obligations, experiences with discrimination abroad, and adjusting to social norms. Participants felt that balancing their family and career, which was an initial concern during the *interest* phase, became more complicated when participating in global health work due to the unanticipated challenges and responsibilities they faced and were unable to manage.

This in turn amplified their stress particularly for female participants who continued to feel more pressure from others to sacrifice their career goals to raise children. Experiencing discrimination while working overseas was another barrier to a global health career, whereby participants working in non-native countries felt they were treated unfairly based on their race and differing cultural background. This challenge disproportionately affected African American participants who experienced discrimination while those working in their native country, or internationally but among similar race/ethnic communities, felt more comfortable and did not encounter discrimination. Needing to adjust to differing social norms while working abroad was another cultural barrier which participants described experiencing culture shock while participating in a non-native country. They described not knowing how to dress or interact with others while working in a culture vastly different from their own which heightened feelings of isolation. Similar to discrimination related challenges, participants working within their native countries or communities felt more comfortable due to familiarity with the social norms there.

> "I think just about American culture, that kind of link back to my own personal identities, and it would have been nice to have some primer of what that looks like there, and what people expected and how I should interact or should not with certain people. What attire is appropriate to wear in a business setting or not, because in India there's, you know, a lot of regional variation and in clinical settings versus community that's different. And what's formal and not? There's like a 1,000 iterations. So, I think a lot of the challenges on the day to day were around my identity kind of tied back to these kind of social nuances." – Grp 1 IDI 3

Financial Barriers

Interest

A lack of familiarity with funding for global health research and the insufficient salary for global health work were raised as deterrents to an interest in pursuing a global health career by HUGS participants (see Figure 1). They described a lack of knowledge about funding for global health research [e.g., how to acquire research funding, amount of funding needed to conduct international research, salary ranges for certain positions, out of pocket expenses]. Concerns regarding insufficient pay for global health work were also described as a barrier when considering a global health career. Many HUGS participants were responsible for financially supporting both their immediate and extended families. Thus, participants were uncertain if a global health career salary would be sufficient to meet all their financial needs. Additionally, they expressed worry about not being sufficiently compensated for their work. Participants described past experiences working in research and/or academia whereby they felt the work and effort being performed did not align with the pay received [e.g., working for free to gain experience, not being paid a salary as a postdoc, working outside work hours without additional pay].

Application

A lack of pay transparency and the absence of financial guidance posed financial challenges to applying to global health programs. Participants described being aware that they would be paid during their fellowship program but were not told the salary level. This heightened previous concerns of participants about receiving inadequate salary to meet their financial needs. A lack of financial guidance was another barrier experienced by participants during the application process. Participants continued to face uncertainty with the structure of global health research funding which was exacerbated when trying to build a budget for their program

application. While experiencing these challenges, participants felt there were no program personnel to whom they could direct their concerns or seek assistance with. They described no reliable financial mentorship to guide participants through the financial aspects of participating in the program.

Participation

While participating in the program, HUGS participants faced challenges with managing their personal finances and receiving funding for their research projects. They described difficulty in simultaneously managing personal finances abroad as well as expenses in their home country [e.g., paying rent at home and abroad, making sure bills were paid on time, financially supporting family while abroad]. HUGS participants also felt out of place while in the program due to conducting research that is not often financially supported by larger institutions. They described working around others conducting bench research which is frequently funded but not always relevant to HUGS issues. On the contrary, research projects that are community-based and focus on clinical interventions are often more desirable by HUGS individuals but less inclined to receive funding. Participants described not being aware of this challenge until they were more immersed in the global health field and viewed it as an obstacle to their global health career participation.

> "In general, you know, folks in my background aren't really classically drawn to fundable research. (…) It's all like sort of wanting to make an impact in the community in a real way and like a tangible way. I know that bench research makes a real difference but I just think folks from my background, in general, are more interested in, you know, how do I improve health outcomes for our population? How do I improve health outcomes in the area that I'm from? How do I keep you from dying young or unnecessarily, right? How

do I improve what now is termed health equity. Right? And those aren't things that are classically funded by NIH." – Grp 1 IDI 7

CHAPTER 5: DISCUSSION, RECOMMENDATIONS, AND CONCLUSIONS

Discussion

This study investigated the barriers and facilitators for historically underrepresented groups (HUGS) in participating in global health training programs and careers. Study results showed that there were four key barriers to HUGS involvement in global health programs that operated across the three phases of program participation [i.e., interest, application, participation]. Despite variation in racial/ethnic background among HUGS participants, the barriers and facilitators they reported were similar across all demographic groups. These findings, along with participants' suggestions, aim to improve the interest and involvement of HUGS in global health professions.

There are limited prior studies that examined the barriers and facilitators to HUGS participation in global health training programs and careers. Some studies have explored barriers and facilitators to minority inclusion within higher education and in health professions [31]. However, these studies did not focus on both barriers and facilitators, were not focused on global health, did not conduct qualitative research, or did not look at education and career connectively. Therefore, there is a growing need to understand factors that hinder or promote HUGS participation in global health careers. Gaining insight directly from HUGS individuals through qualitative research is critical to recognize practical, psychological, and relational factors that influence the various stages of global health career development for this population. Improving HUGS inclusion in global health training and career involvement is important to ensure representative participation and leadership that reflects the diverse communities being served [50].

Lack of GH Exposure

One of the barriers that prevent HUGS from participating in global health training programs is the lack of exposure to global health. This includes a lack of awareness regarding global health as a career path as well as a lack of exposure to research procedures and field work. Guidance from academic mentors was found to increase exposure to global health as well as help students to gain global health work experience. Previous research focused on the development of a career in global health also emphasized the importance of mentors. This research found mentors help expose interested trainees to diverse research experience opportunities and allow students to gain more knowledge about what a global health career involves [35]. Participants from our study stated similar facilitators as being supportive for their participation but identified a greater need for HUGS specific mentor guidance to help build a stronger trainee-mentor relationship through their shared HUGS status. Mentorship was also important for first-generation students who did not have any previous connections to global health or basic academic research. The need for mentorship to first-generation students was emphasized in many studies focused on first-generation medical students. These studies identified low enrollment of first-generation students in medical programs, and in graduate studies in general, and attribute it their low levels of academic preparedness, a lack of cultural capital, and unsupportive institutional policies and cultures which can be counteracted through mentor support [51, 52].

Exposure to global health work early in the education system is another important issue raised by our study participants and supported by previous research to increase HUGS participation. Literature has shown that exposure to various healthcare fields for adolescents and young adults is crucial to the development of their career interests [42]. Similarly, participants in this study felt being exposed to global health early would have helped them become more

familiar with global health research procedures. Lastly, exposure to various resources and networking opportunities are additional facilitators to overcome this lack of exposure barrier. Suggestions aimed at increasing HUGS participation in various healthcare fields through networking programs report increases in grant funding, academic promotion, and cultural inclusivity through program participation [53]. Participants from this study also highlighted networking opportunities provided through mentorship as well as program application resources as strong facilitators to their involvement in global health.

Lack of Support

Feelings of isolation caused by a lack of support or guidance were also found to deter HUGS interest in participating in global health professions. This was associated with feeling disconnected from global health leadership/peers and general challenges related to feeling unsupported while entering a new career field. Similar to effective approaches for lack of exposure barriers, academic mentors were found to be a strong source of support. Previous literature has identified exposure to role models and mentors as a key factor to the success of minorities in many professional fields, including other research focused on HUGS student involvement in global health [31]. In this study, participants strongly credited academic mentors as a source of support during their global health career journey but recognized a need for more HUGS mentors and role models. Those with HUGS mentors credited their mentor's HUGS status as a strong influence on their interest in pursuing a global health career. Other research has also found that when there is minority representation in leadership inspiring and guiding trainees, HUGS inclusion in healthcare increases [54]. Providing mental health resources to trainees was another intervention raised by our participants. This intervention has been highly supported through previous research focused on reducing mental health stigma among students in higher

education [55]. Additionally, increasing group work during training is a valuable initiative supported by literature as well as participants in our study. Both emphasize the importance of collective activities such as study groups, group trainee meetings, and other concepts focused on allowing students to share their work and gain peer-to-peer insight [56]. Participants in this study stated that communicating frequently with other trainees in the program and learning about their research projects was helpful in making them feel more connected to their peers and the program.

Global Career Barrier

Barriers related to international travel was another deterrent to participation in a global health career by HUGS. Participants in our study, particularly among those new to global health work, stated having access to travel management resources proved helpful for handling international travel challenges. These resources included informational tools to assist with planning, organizing, and coordinating various travel elements needed to conduct global health work abroad. Additionally, while female participants felt more of a moral struggle choosing to advance their career over staying close to home, all our participants credited spousal and family support as being the reason they were able to participate in an extensive international training program. In other studies, spousal and family support has been credited as an important tool to help individuals make career advancements no matter the career field [57]. Having HUGS leadership and mentorship is another facilitator strongly connected to global career challenges. Participants felt HUGS representation is especially needed in global health to help initiate conversations surrounding ethnic differences in order to create cultural awareness and competence. Other research has also supported this need to ensure that those with ethnic minority backgrounds are involved in teaching, tutoring, and mentoring roles across various

education and training continuums where cross-culturalism is present [58]. Close HUGS mentorship alongside peer support is also found to be a supportive tool to help with issues related to discrimination or adjustment to social norms while abroad. Participants in our study, and published literature, support that communication between peers and staff allows HUGS individuals to feel more connected and comfortable because they're able to share experiences and communicate concerns in a safe learning environment [58].

Financial Barrier

Financial challenges such as concerns with funding global health research, making a sufficient salary, and managing personal expenses were a final set of barriers found in this study. Another study focused on barriers to pursuing higher education among HUGS individuals also found financial challenges to be a hinderance. Specifically, they found that economic strain was paramount in their participants' pursuit to obtain higher education as minority parents were less likely to be financially secure enough to supplement financial resources to their child [59]. Participants in our study had similar financial constraints that were further exacerbated as some participants were also financially supporting their parents and/or extended families. Therefore, providing sufficient salaries and pay transparency when applying to global health training programs is a critical step to ensure participants can meet their financial needs. Previous literature has also pointed out financial resources as a supportive tool for increasing HUGS involvement in healthcare training and higher education. Investing in scholarships and minority research funding opportunities have been successful facilitators for increasing HUGS inclusion in academic medical training [60]. Participants from our study supported this by emphasizing not just a need for financial support, but for financial opportunities focused specifically on supporting HUGS inclusion in global health. Other financial interventions brought up in our

study included administrative financial guidance to help participants manage research budgets and personal expenses while participating in the program. Similar findings related to a need for administrative/institutional financial guidance were found in a study exploring factors that affect research progress among international PhD students from the Middle East [61].

Study Limitations/Strengths

Study Limitations

This study has some limitations. While we aimed to obtain diversity by gender in study participants, study participants were primarily female. However, given that females make up the majority of global health professionals, our study population aligns well with the professional setting of global health. Additionally, our study had HUGS variation by racial and ethnic identity within groups 1 and 2, but lacked this variation within group 3 (i.e., HUGS who did not apply but were eligible for the FGHFP) to which only African Americans participants were recruited. Another potential limitation was the lack of balance between participant group study sizes which could cause views from certain racial groups to not be captured as they were not recruited across all participant groups. Despite the use of multiple recruitment strategies, group 2 had approximately half the number of participants compared to groups 1 and 3 therefore less perspective was given for HUGS participants who applied to the FGHFP but were not accepted, withdrew or who declined.

Study Strengths

A strength to this study is that three sub-groups of participants with diversity in knowledge and experience of global health were selected. This allowed for a wide range of perspectives on barriers and facilitators that affect HUGS individuals interested in global health

training and professions to be captured. Having variation by HUGS background was also beneficial for making comparisons. Although not many distinctions were found during racial and ethnic comparisons, the similarities found across the various participant characteristics strengthen our results. These similar results, particularly by HUGS background and gender, solidifies that barriers identified in this study are reinforced despite racial identity and gender further validating the challenges faced by HUGS in global health career pursuits. Lastly, using qualitative methods facilitated "rich" data in which participants gave in-depth and contextualized descriptions of barriers and facilitators to global health participation that allowed for a more complete view of their experiences.

PH Implications/Recommendations

The results of this study provide critical insight into the barriers faced by HUGS individuals when pursuing a global health career. Addressing these barriers and supporting HUGS inclusion in global health education and training is essential for HUGS success in this career field. Based on the findings from this study, we present the following recommendations for mitigating barriers to HUGS participation in global health training programs and careers.

Mentorship

Evidence from this study and previous literature strongly suggests mentorship as a tool to nurture future HUGS global health professionals. Various forms of mentorship are important to promote guidance and networking support for potential global health professionals. Through reliable mentorship, global health trainees can feel more prepared and supported while in the workforce.

Recommendations for increasing HUGS global health career participation through diverse types of mentorships:

- Connecting HUGS students with academic mentors at all stages of global health career development. Academic mentors are important for supporting student interest in global health and guiding students down a global health career path. This involves writing letters of recommendation, supervising global health work, and providing connections to global health projects and training programs.
- Focusing on increasing access to reliable HUGS mentors to allow HUGS students to work with representative leadership. This strengthens HUGS trainee success by facilitating relationships where students are more comfortable discussing racial and ethnic aspects of their work.
- Providing mentors who have experience and connections to the global health field. Many global health opportunities are facilitated through connections; therefore it is important for students to have guidance and support from mentors who are immersed in global health work. This allows them to communicate what specific skills and knowledge are needed for this field of work to students who are new to global health and/or research. They are also more likely to introduce students into a global health concentration as well as provide global health opportunities to students working under them.

HUGS Representation

HUGS representation in mentors and other global health leadership roles is also crucial for promoting HUGS inclusion in global health training programs and careers. Having HUGS

mentors, role models, and peers in learning and career environments has been found to increase feelings of empowerment, belonging, and support among HUGS individuals.

Recommendations for increasing HUGS global health career participation through increased HUGS representation in global health career settings:

- Encouraging global health institutions to implement policies and programs that promote diversity and HUGS inclusion. This includes advocating resources and funds to paid internships, work-based learning programs, and other opportunities for HUGS participation.
- Focusing on HUGS-specific outreach for global health training program recruitment. This can involve HUGS trainee recruitment from universities, medical institutions, or other HUGS-promoted organizations.
- Encouraging HUGS leadership across all realms of global health professions. Having HUGS leadership and role models present is crucial to increasing HUGS interest in participating in global health career opportunities. Additionally, seeing diverse representation in leadership roles is more likely to attract HUGS students into global health work.
- Increasing HUGS mentorship and peer connection within global health training programs. Promoting these HUGS connections across all stages of global health career development, but particularly while participating in training programs, increases feelings of comfortability and trustworthiness among HUGS individuals.

GH Awareness

Within this study, many barriers to HUGS participation in global health programs were related to a lack of global health awareness and experience. Other research also points to the

importance of early exposure to health professions to promote career development. Post-baccalaureate programs that focus on bringing awareness and assistance to HUGS individuals have also found an increase in the number of successful HUGS applicants to health profession programs.

Recommendations for increasing HUGS global health career participation through outreach to HUGS and/or global health focused organizations and groups:

- Conferences, guest lectures, workshops, etc. during high school, undergraduate, and graduate school to expose HUGS students to global health career opportunities. This can provide students with a formal introduction to global health as a concept, potential career opportunities, and more information on approaching a global health career path.
- Collaborating with medical organizations that frequently involve global travel to incorporate global health awareness and training opportunities. These can include organizations within or outside of academia.
- Connecting with HUGS student organizations at universities to bring global health awareness and opportunities directly to HUGS students. HUGS-specific outreach is a highly supported intervention for increasing HUGS participation among all health professions.

Institutional Support

Research has shown that receiving academic, emotional, social, and financial support is effective in facilitating HUGS participation in health professions. Providing various resources and informational tools has been found to increase motivation and confidence while participating in health profession training programs.

Recommendations for increasing HUGS global health participation through various forms of institutional support:

- Encouraging peer-to-peer learning mindsets through consistent group work while participating in global health training programs. This allows peers in the global health field to gain and provide valuable feedback to one another. Group work can also increase camaraderie among participants by allowing them to learn about others' research projects and discuss challenges and facilitators.
- Directing more institutional funding to provide scholarship opportunities for HUGS students interested in pursuing global health training. This can include financially supported internships, fellowships, summer enrichment programs, or other forms of global health work experience for HUGS students.
- Providing financial guidance and advising through administrative assistance at universities and institutions is a resourceful tool to relieve financial stress or concerns among global health HUGS trainees. This allows trainees to easily manage personal and career finances as well as meet their financial needs.
- Having institutions and universities promote mental health services to HUGS trainees in global health training programs. This can increase motivation and self-esteem among participants.

Conclusion

Increasing HUGS representation in global health, and amongst other scientific disciplines, is fundamental to bringing diverse experiences and leadership to a multitude of public health initiatives. Therefore, understanding barriers that hinder HUGS participation in

global health professions is critical to initiating measures that seek out HUGS inclusion. The findings from this study illustrate various circumstances that influence HUGS participation in global health training programs and careers. Providing specific outreach and multiple levels of support to HUGS individuals throughout their global health career development is critical to increasing HUGS inclusion in the global health career field.

REFERENCES

1. Perkins, K. and S. Wiley, *Minorities*, in *Encyclopedia of Critical Psychology*, T. Teo, Editor. 2014, Springer New York: New York, NY. p. 1192-1195.
2. Griffin, K., et al., *Supporting scientists from underrepresented minority backgrounds: Mapping developmental networks.* Studies in Graduate and Postdoctoral Education, 2018.
3. Centers For Disease Control and Prevention. *Racism and Health*. 2021; Available from: https://www.cdc.gov/minorityhealth/racism-disparities/index.html.
4. Hofstra, B., et al., *The diversity–innovation paradox in science.* Proceedings of the National Academy of Sciences, 2020. **117**(17): p. 9284-9291.
5. Garces, L.M. and D. Mickey-Pabello, *Racial Diversity in the Medical Profession: The Impact of Affirmative Action Bans on Underrepresented Student of Color Matriculation in Medical Schools.* J Higher Educ, 2015. **86**(2): p. 264-294.
6. NIH, *Diversity Matters - Get the Facts*. 2019.
7. NSF, *Women, Minorities, and Persons with Disabilities in Science and Engineering: 2019*, in *Special Report NSF 19-304*. 2019: Alexandria, VA.
8. U.S. Census Bureau, *QuickFacts - United States*. 2022, U.S. Department of Commerce.
9. Snipp, C.M., *Racial Measurement in the American Census: Past Practices and Implications for the Future.* Annual Review of Sociology, 2003. **29**: p. 563-588.
10. Naff, K.C., *Strategies for Fostering Inclusion*, in *To look like America: Dismantling barriers for women and minorities in government*. 2018, Routledge: New York, NY.
11. Bohren, J.A., P. Hull, and A. Imas, *Systemic discrimination: Theory and measurement*. 2022, National Bureau of Economic Research.
12. Arif, S., et al., *Ten simple rules for supporting historically underrepresented students in science.* PLoS Comput Biol, 2021. **17**(9): p. e1009313.
13. Banaji, M.R., S.T. Fiske, and D.S. Massey, *Systemic racism: individuals and interactions, institutions and society.* Cogn Res Princ Implic, 2021. **6**(1): p. 82.
14. Ford, J. and N. Triplett, *E (race) ing inequities| Does race influence who drops out of school? It's complicated*. 2019, EducationNC (EdNC) Center for Racial Equity in Education.
15. National Center for Education Statistics, *Status Dropout Rates*, in *Condition of Education*. 2023, U.S. Department of Education, Institute of Education Sciences.
16. Wilson, V. and W. Darity Jr, *Understanding black-white disparities in labor market outcomes requires models that account for persistent discrimination and unequal bargaining power*. 2022, Economic Policy Institute.
17. Mitchell, D.E., D. Shipps, and R.L. Crowson, *Shaping education policy: Power and process*. 2017: Routledge.
18. Harley, S., et al., *Doing diversity in higher education: Faculty leaders share challenges and strategies*. 2008: Rutgers University Press.
19. Ellsworth, D., E. Harding, and D. Pinder, *Racial and ethnic equity in US higher education: Students and faculty*. 2022, McKinsey & Company.
20. National Center for Education Statistics, *Undergraduate Retention and Graduation Rates*, in *Condition of Education*. 2022, U.S. Department of Education, Institute of Education Sciences.
21. Garces, L.M., *Understanding the impact of affirmative action bans in different graduate fields of study.* American Educational Research Journal, 2013. **50**(2): p. 251-284.

22. Russell, J.A., S. Brock, and M.E. Rudisill, *Recognizing the impact of bias in faculty recruitment, retention, and advancement processes.* Kinesiology Review, 2019. **8**(4): p. 291-295.
23. Gooden, S.T. and B. Blessett, *Cultural competency and social equity in public affairs programs.* The public affairs faculty manual: A guide to the effective management of public affairs programs, 2020: p. 223-238.
24. Lekas, H.M., K. Pahl, and C. Fuller Lewis, *Rethinking Cultural Competence: Shifting to Cultural Humility.* Health Serv Insights, 2020. **13**: p. 1178632920970580.
25. Luster-Edward, S. and B.N. Martin, *Minorities in Higher Education in the United States: Their Status and Disparities in Student and Faculty Representation in a Midwest Research I University.* Higher Education Studies, 2019. **9**(1): p. 68-75.
26. Cross, T.L., *Towards a culturally competent system of care: A monograph on effective services for minority children who are severely emotionally disturbed.* 1989.
27. Coleman, D. and T. Pellitteri, *Cultural competency continuum*. 2013.
28. Overall, P.M., *Cultural competence: A conceptual framework for library and information science professionals.* The Library Quarterly, 2009. **79**(2): p. 175-204.
29. AAMC, *Diversity in Medicine: Facts and Figures 2019*, in *Data & Reports*. 2019: Washington, DC.
30. Taparra, K. and C. Deville, *Native Hawaiian and other Pacific Islander representation among US allopathic medical schools, residency programs, and faculty physicians.* JAMA Network Open, 2021. **4**(9): p. e2125051-e2125051.
31. Krawczyk, N. and L. Claudio, *Outcomes of Global Public Health Training Program for US Minority Students: A Case Report.* Annals of global health, 2017. **83**(3-4): p. 605-612.
32. Walsh, B.A., et al., *Historically Underrepresented Graduate Students' Experiences During the COVID-19 Pandemic.* Family relations, 2021. **70**(4): p. 955-972.
33. Holley, K.A. and S. Gardner, *Navigating the pipeline: How socio-cultural influences impact first-generation doctoral students.* Journal of Diversity in Higher Education, 2012. **5**(2): p. 112.
34. Beaglehole, R. and R. Bonita, *What is global health?* Global Health Action, 2010. **3**.
35. Nelson, B.D., et al., *Developing a career in global health: considerations for physicians-in-training and academic mentors.* Journal of Graduate Medical Education, 2012. **4**(3): p. 301-306.
36. USDHHS, *National standard for culturally and linguistically appropriate services in health care.* 2001, PHSD, Office of Minority Health: Washington DC.
37. Bouye, K.E., K.J. McCleary, and K.B. Williams, *Increasing Diversity in the Health Professions: Reflections on Student Pipeline Programs.* J Healthc Sci Humanit, 2016. **6**(1): p. 67-79.
38. Coronado, F., et al., *Understanding the Dynamics of Diversity in the Public Health Workforce.* Journal of Public Health Management and Practice, 2019. **26**: p. 1.
39. Mays, D., et al., *A call to action to address diversity in public health professional preparation.* Diversity and Equality in Health and Care, 2008. **5**(3).
40. Komaromy, M., et al., *The role of black and Hispanic physicians in providing health care for underserved populations.* New England Journal of Medicine, 1996. **334**(20): p. 1305-1310.
41. NIHB. *National Indian Health Board and Public Health*. 2020; Available from: https://www.nihb.org/public_health/public_health.php.

42. Muncan, B., N. Majumder, and N. Tudose, *From high school to hospital: how early exposure to healthcare affects adolescent career ideas.* Int J Med Educ, 2016. **7**: p. 370-371.
43. Berman, R., et al., *The crimson care collaborative: A student–faculty initiative to increase medical students' early exposure to primary care.* Academic Medicine, 2012. **87**(5): p. 651-655.
44. Rao, V. and G. Flores, *Why aren't there more African-American physicians? A qualitative study and exploratory inquiry of African-American students' perspectives on careers in medicine.* J Natl Med Assoc, 2007. **99**(9): p. 986-93.
45. Rumala, B.B. and F.D. Cason, Jr., *Recruitment of underrepresented minority students to medical school: minority medical student organizations, an untapped resource.* J Natl Med Assoc, 2007. **99**(9): p. 1000-4, 1008-9.
46. Vu, M.T., et al., *Sustained impact of short-term international medical mission trips: Resident perspectives.* Medical Teacher, 2014. **36**(12): p. 1057-1063.
47. Martin, T.E., L.M. Parker, and C.M. Mugambi, *The impact of an international medical mission trip on the culutral competency of healthcare providers.* Journal of Cultural Diversity, 2019. **26**(2): p. 76-51.
48. Harvard School of Public Health. *Department of Global Health and Population - Training Programs*. 2023; Available from: https://www.hsph.harvard.edu/global-health-and-population/demo-research-initiatives/training-programs/.
49. VERBI Software, *MAXQDA 2022 Online Manual*. 2021.
50. Ba, M., et al., *Diversity and solidarity in global health.* The Lancet Global Health, 2021. **9**(4): p. e391-e392.
51. Cataldi, E.F., C.T. Bennett, and X. Chen, *First-Generation Students: College Access, Persistence, and Postbachelor's Outcomes. Stats in Brief. NCES 2018-421.* National center for education statistics, 2018.
52. Talamantes, E., et al., *Community college pathways: improving the US physician workforce pipeline.* Academic medicine: journal of the Association of American Medical Colleges, 2014. **89**(12): p. 1649.
53. Blanchard, S.A., et al., *Building the network of minority health research investigators: a novel program to enhance leadership and success of underrepresented minorities in biomedical research.* Ethnicity & Disease, 2019. **29**(Suppl 1): p. 119.
54. Taylor, S., et al., *Improving health care career pipeline programs for underrepresented students: Program design that makes a difference.* Progress in community health partnerships: research, education, and action, 2019. **13**(5): p. 113.
55. DiPlacito-DeRango, M.L., *Acknowledge the barriers to better the practices: Support for student mental health in higher education.* Canadian Journal for the Scholarship of Teaching and Learning, 2016. **7**(2): p. 2.
56. Devenish, R., et al., *Peer to peer support: The disappearing work in the doctoral student experience.* Higher Education Research & Development, 2009. **28**(1): p. 59-70.
57. Ezzedeen, S.R. and K.G. Ritchey, *The man behind the woman: A qualitative study of the spousal support received and valued by executive women.* Journal of Family Issues, 2008. **29**(9): p. 1107-1135.
58. Isik, U., et al., *"What kind of support do I need to be successful as an ethnic minority medical student?" A qualitative study.* BMC Medical Education, 2021. **21**(1): p. 1-12.

59. Zambrana, R.E., C.R. Hardaway, and L.C. Neubauer, *Beyond role strain: Work–family sacrifice among underrepresented minority faculty.* Journal of Marriage and Family, 2022. **84**(5): p. 1469-1486.
60. Wingard, D.L., V.M. Reznik, and S.P. Daley, *Career experiences and perceptions of underrepresented minority medical school faculty.* Journal of the National Medical Association, 2008. **100**(9): p. 1084-1088.
61. Khozaei, F., et al., *An exploratory study of factors that affect the research progress of international PhD students from the Middle East.* Education+ Training, 2015. **57**(4): p. 448-460.

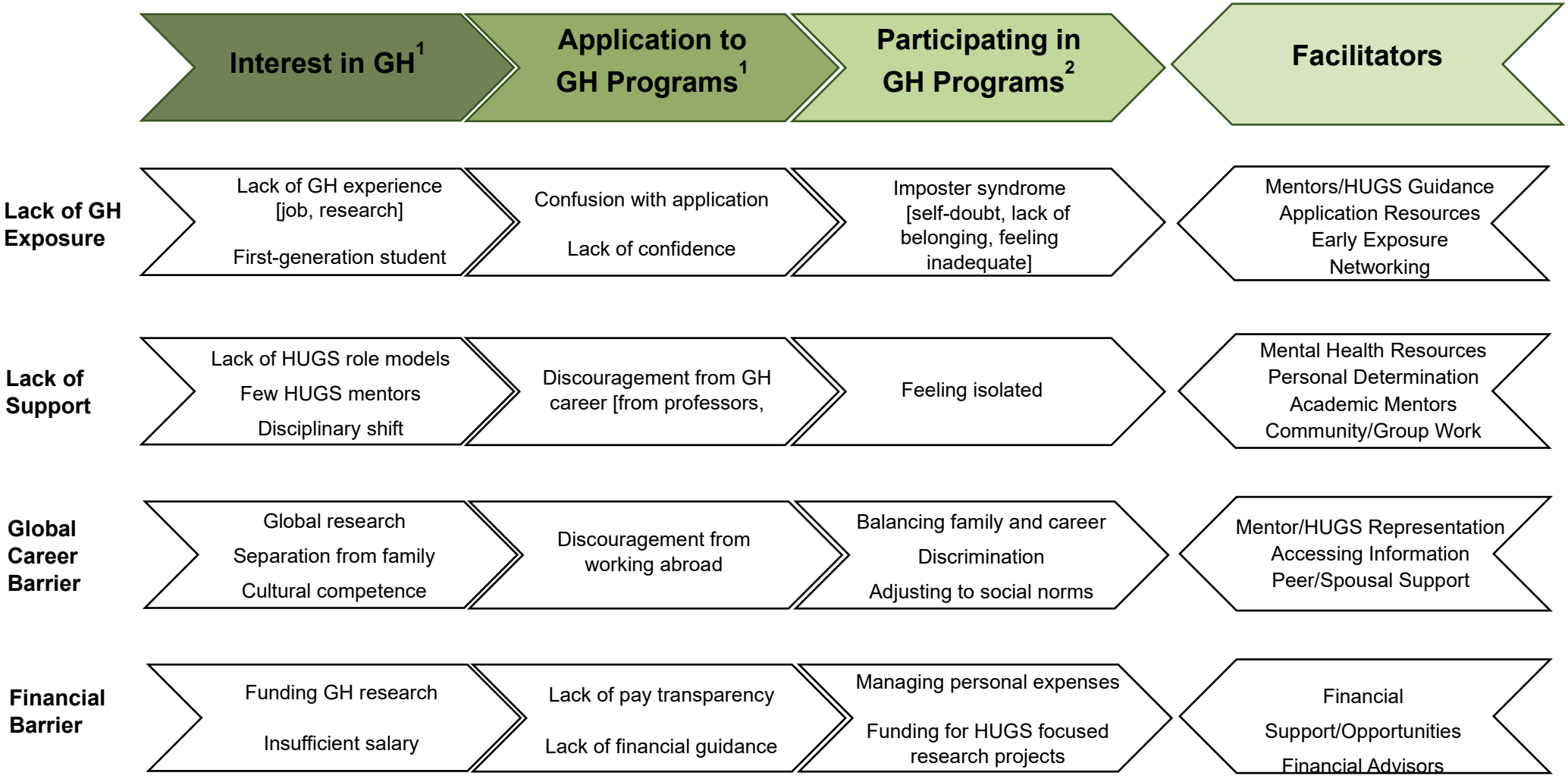
TABLES AND FIGURES

TABLE 1. Participant Characteristics

Table 1.			
	Group 1 (n=7)	Group 2 (n=3)	Group 3 (n=8)
Characteristic	Number (%) or Mean (range)	Number (%) or Mean (range)	Number (%) or Mean (range)
Gender			
Male	2 (29%)	1 (33%)	2 (25%)
Female	5 (71%)	2 (67%)	6 (75%)
Race			
Black	3 (43%)	2 (67%)	8 (100%)
White	3 (43%)	0	0
Pacific Islander	1 (14%)	1 (33%)	0
Ethnicity			
Hispanic/Latino	3 (43%)	0	1 (12%)
Non-Hispanic/Latino	4 (57%)	3 (100%)	7 (88%)
Age[1]			
	33.5 (29-42)	34.3 (31-37)	32.6 (29-36)
Highest Degree Earned[1]			
MD	3 (43%)	1 (33%)	5 (72%)
DVM	1 (14%)	0	0
PhD	2 (29%)	2 (67%)	1 (14%)
Master's Degree	0	0	1 (14%)
Bachelor's Degree	1 (14%)	0	0

[1] One participant in group 3 did not specify their age or highest degree earned.

Figure 1. Barriers to GH Program Participation Amongst HUGS



[1] Data from all participant groups (1,2, and 3)

[2] Data from participant group 1 only