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Association for Academic Surgery

COVID-19, Racial Injustice, and Medical Student Engagement With Global Health: A Single-Institution Survey

Phoebe Miller, MD, MS, a Ruth Laverde, BS, a Avery Thompson, MD, MPH, a Paul Park, MD, MS, a Doruk Ozgediz, MD, MSc, b and Marissa A. Boeck, MD, MPHb, *

a School of Medicine, University of California, San Francisco, San Francisco, California
b Department of Surgery, University of California, San Francisco, San Francisco, California

A B S T R A C T

Introduction: United States medical schools continue to respond to student interest in global health (GH) and the evolution of the field through strengthening related curricula. The COVID-19 pandemic and superimposed racial justice movements exposed chasms in the US healthcare system. We sought to explore the possible relationship between the pandemic, US racial justice movements, and medical student interest in GH to inform future academic offerings that best meet student needs.

Methods: A novel, mixed-methods 30-question Qualtrics survey was disseminated twice (May-August 2021) through email and social media to all current students. Data underwent descriptive and thematic analysis.

Results: Twenty students who self-identified as interested in GH responded to the survey. Most (N = 13, 65%) were in preclinical training, and half were women (N = 10, 50%). Five (25%) selected GH definitions with paternalistic undertones, 11 (55%) defined GH as noncontingent on geography, and 12 (60%) said the pandemic and US racial justice movement altered their definitions to include themes of equity and racial justice. Eighteen (90%) became interested in GH before medical school through primarily volunteering (N = 8, 40%). Twelve (60%) students plan to incorporate GH into their careers.

Conclusions: Our survey showed most respondents entered medical school with GH interest. Nearly all endorsed a changed perspective since enrollment, with a paradigm shift toward equity and racial justice. Shifts were potentially accelerated by the global pandemic, which uncovered disparities at home and abroad. These results highlight the importance of faculty and curricula that address global needs and how this might critically impact medical students.

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* Corresponding author. Department of Surgery, University of California, San Francisco, 513 Parnassus Avenue, HSW 1601, San Francisco, CA 94143-0790. Tel.: +1 415 502 4745
E-mail address: Marissa.boeck@ucsf.edu (M.A. Boeck).
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Introduction

In 2009, Kaplan et al. defined global health (GH) as "an area for study, research, and practice that places a priority on improving health and achieving equity in health for all people worldwide. GH emphasizes transnational health issues, determinants, and solutions; involves many disciplines within and beyond the health sciences and promotes interdisciplinary collaboration; and is a synthesis of population-based prevention with individual-level clinical care." Given an increasingly globalized and interconnected world, medical students and faculty alike have called for medical training curricula to reflect this evolving context, which will prepare students for diseases and health challenges that cross national borders. In response to this request, medical schools across the United States increased their focus on ethics training, strengthened partnerships between international schools, and increased exposure to the role of new specialties in GH training, including surgery and anesthesiology.

The global COVID-19 pandemic and its impact on travel, coupled with the US racial justice movements, pivoted focus toward domestic health challenges and inequities as the virus exposed huge chasms in the US healthcare system. In many ways, COVID-19 has been a 'stress-test' for health systems around the world. In the United States, hospitals have been overwhelmed to the point that ambulances have nowhere to deliver patients to, an occurrence all too familiar in many low- and middle-income countries (LMICs). These stresses have changed the way healthcare is provided in both high-income countries (HICs) and LMICs, such as increased telemedicine. Although the pandemic has prevented many from engaging in GH through historical pathways like international missions and volunteering to provide direct healthcare and education, in some cases the pandemic spurred increased international cooperation, such as through vaccine development, and advocacy for equitable access to treatment and preventative measures. However, in others, COVID-19 has made evident continued glaring inequities between countries such as in vaccine availability and access. Thus, COVID-19 has placed a renewed emphasis on the interconnectedness of our health and the common challenges facing all communities around the world.

While many have considered the profound impact the pandemic has had on core elements of medical school curricula, little work has been done to assess how COVID-19 has affected how medical students envision their future careers, particularly in GH. COVID-19 has challenged many elements of our health systems and has underscored the need for a medical workforce that is trained in global collaboration and interconnection leadership. In order to better meet the educational needs of students in this changing landscape, we queried medical student GH knowledge and experience prior to and during the COVID-19 pandemic. We also investigated the interplay between the pandemic, US racial justice movements, and student interest in GH, to inform future offerings that best meet student interests. We hypothesized that the pandemic and racial justice movements may have played a role in shaping perceptions of GH among medical students.

Methods

This was a cross-sectional study to evaluate perceived definitions of GH and the potential interaction between COVID-19, the US racial justice movements, and GH’s role in medical training and research. Medical students from a single institution were surveyed via an electronic questionnaire after the University of California San Francisco (UCSF) Institutional Review Board (IRB) deemed the study to be exempt. We received a waiver of signed consent from the IRB and communicated the research purpose of the survey through our recruitment materials, and respondents consented to participate in the study by electing to proceed with the survey via the provided link. All surveys were de-identified and both quantitative and qualitative data were collected.

A novel 30-question survey, informed by a previous GH interest survey with adaptations to reflect current interactions between health and racial inequities, was developed to evaluate medical student understanding of and participation in GH. Students answered a variety of multiple choice, true/false, and free-text questions.

The survey was piloted with a cohort of UCSF medical students and a GH department administrator, who provided written feedback regarding question clarity, survey content, and completeness that was subsequently incorporated. Upon completion of this cycle, all pilot participants reported that the revised survey was easy to comprehend and adequately addressed the intended topic of medical student understanding of and interest in GH.

The survey was administered from June to August 2021. Recipients were actively enrolled UCSF School of Medicine students, which included gap year and research students. Preclinical students were in their first 2 y of medical school before beginning their clinical rotations. Clinical students were in the latter 2 y of medical school. The survey was distributed three times via email to all relevant UCSF listservs and shared once on an exclusive UCSF medical student Facebook group, which have significant overlap. In total, 715 students were actively enrolled at the time of survey dissemination. Our target population was students who self-identified as interested in GH. GH interest is not routinely measured at UCSF but is estimated to be approximately 20 students per year based on UCSF GH elective enrollment data. Based on this estimate, we believe our target population was approximately 80 students, with a survey response rate of 25%. Participation in the survey was voluntary and anonymous. The survey and recruitment materials are included in the supplement.

Data underwent descriptive and thematic analysis. Quantitative results underwent descriptive analysis to examine proportions by demographic characteristics. Nonresponders to individual questions were excluded from the analysis of those questions. Anonymous free-text responses were read by two of seven authors (PM and RL) who familiarized themselves with the responses and undertook open coding of all responses. Authors (PM and RL) met to agree on a series of thematic codes that described several categories and subcategories.
Results

Twenty students responded to the survey, with an even distribution between men and women (50%, N = 10, respectively) and the majority in the preclinical phase of training (65%, N = 13). Most identified as Asian or Pacific Islander (30%, N = 6), and many planned to specialize in either internal medicine (25%, N = 5) or general surgery (20%, N = 4) (Table 1). Nearly all respondents (90%, N = 18) became interested in GH before medical school, and the most common initial exposure was volunteer experiences (40%, N = 8) (Table 2). Despite the pandemic, many students still planned to incorporate GH into their careers (60%, N = 12).

Once in medical school, students transitioned to more academic engagement with GH frequently through research, which took place during the summer between first and second year (60%, N = 12), during dedicated fourth year research time (15%, N = 3), and/or as part of a master’s or external degree (35%, N = 7). Cumulatively participants identified 30 discrete GH related research experiences during medical school from 2019 to 2021, 23% (N = 7) of which were conducted internationally. Of the projects that were ongoing at the onset of COVID-19 (N = 25), 32% (N = 8) were impacted by the pandemic by an inability to travel (50%), change in research question (38%), or difficulty planning with community partners (12%) (Table 3).

Table 1 – Demographics and characteristics of survey respondents.

| Demographic/Characteristic            | N (%)  |
|--------------------------------------|--------|
| N = 20                               |        |
| Phase of training                    |        |
| Preclinical                          | 13 (65%) |
| Clinical                             | 2 (10%) |
| Research                             | 5 (25%) |
| Gender identity                      |        |
| Male                                 | 10 (50%) |
| Female                               | 10 (50%) |
| Race/Ethnicity                       |        |
| Asian or Pacific Islander            | 6 (30%) |
| Black or African American            | 1 (5%)  |
| Hispanic or Latino                   | 2 (10%) |
| White or Caucasian                   | 5 (25%) |
| Multiracial or Biracial              | 5 (25%) |
| Other                                | 1 (5%)  |
| Intended specialty                   |        |
| Emergency medicine                   | 2 (10%) |
| General surgery                      | 4 (20%) |
| Internal medicine                    | 5 (25%) |
| Obstetrics & Gynecology              | 2 (10%) |
| Pediatrics                           | 2 (10%) |
| Other                                | 2 (10%) |
| Undecided                            | 2 (10%) |

Table 2 – Exposure to and experience in GH.

| Exposure/experience timing & type              | N (%) |
|-----------------------------------------------|-------|
| Time of initial interest in GH                |       |
| High school or before                         | 10 (50%) |
| College                                       | 6 (30%) |
| Gap year                                      | 2 (10%) |
| Medical school                                | 1 (5%)  |
| Other                                         | 1 (5%)  |
| Initial exposure to GH                        |       |
| Volunteer                                     | 8 (40%) |
| Work                                          | 2 (10%) |
| Research                                      | 2 (10%) |
| Study abroad                                  | 2 (10%) |
| Family/personal                               | 4 (20%) |
| Other                                         | 2 (10%) |
| Avenues for learning about GH*                |       |
| Student-led                                   | 10 (50%) |
| Medical school faculty-led                    | 17 (85%) |
| Nonmedical school faculty-led                 | 4 (20%) |
| Public health faculty-led                     | 5 (25%) |
| Research project                              | 11 (55%) |
| Plans to incorporate GH into career           |       |
| Strongly or somewhat agree                    | 12 (60%) |
| Neither agree nor disagree                    | 6 (30%) |
| Strongly or somewhat disagree                 | 2 (10%) |

* Participants could select more than one option; therefore, totals exceed 100%.

Domain 1: definitions of GH

Theme 1: GH means bringing expertise to low-income settings
Respondents described GH as an act of providing services to those in need. One described GH as “[the] alleviation of suffering from health on a societal and international level in a culturally competent manner” (Asian/Pacific Islander Preclinical Male). Another participant wrote that “[global health means] distributing high quality medical services to patients who live in underserved areas or who are underserved for other reasons” (White Research Male).

Theme 2: low-resource settings within both low- and HICs
We observed a range of perspectives on whether low-resource settings within HICs were part of respondents’ definitions of GH. One respondent wrote that “[global health is] health around the world, with a particular emphasis on health in underdeveloped nations” (Asian/Pacific Islander Preclinical Male). Similarly, another respondent described GH as “thinking and working toward improving the health of those in LMIC [s]” (Black/AA Preclinical Female). While others described GH as inclusive of local disparities and as noncontingent on geography. Statements for this theme focused on infrastructure: “[Global health is the] practice of medicine that believes everyone, regardless of geography or nationality, deserves access to quality healthcare, and endeavors to
provide it by engaging in transnational information and resource sharing” (White Clinical Male). Similarly, respondents placed GH on a continuum of capacity building in low-, middle-, and HICs: “[Global health means] addressing health inequities on the global scale, distributing resources and expertise and helping to build local capacity in places that have inadequate healthcare infrastructure” (White Research Male) and “[Global health] is healthcare without regard for national boundaries” (Black/White Biracial Preclinical Female).

Theme 3: GH involves interconnected international public health responses

One respondent acknowledged that “[Global health means] practicing medicine and formulating public health responses with acknowledgment of internationally connected systems” (Multiracial or Biracial Research Male). Other respondents noted that GH encompasses evolving dynamics and partnerships: “[Global health is] health and wellness within a global context, taking into consideration shifting cultural and social dynamics” (Asian or Pacific Islander Clinical Male) or “[Global health is] health and healthcare provision, infrastructure, and research in any non-domestic setting, which means that GH in the United States means something slightly different than it does in France or Vietnam” (White Research Female).

Table 3 – GH experiences and impact of COVID-19.

| Type of experience       | Research during medical school* | Research for a thesis or external degree | Clinical electives |
|--------------------------|---------------------------------|-----------------------------------------|-------------------|
|                          | N (%)                           | N (%)                                   | N (%)             |
| Experience Pre-COVID     | 4                               | 1                                       | Not assessed      |
| Domestic                 | 2 (50%)                         | 0                                       | Not assessed      |
| International            | 2 (50%)                         | 1 (100%)                                | Not assessed      |
| Experience during COVID  | 19                              | 6                                       | 19                |
| Domestic                 | 17 (89%)                        | 6 (100%)                                | Not assessed      |
| Affected by COVID        | 6 (35%)                         | 1 (17%)                                 | 5 (26%)           |
| International            | 4 (21%)                         | 0                                       | Not assessed      |
| Affected by COVID        | 2 (50%)                         | 0                                       | Not assessed      |

* Participants could designate an experience as domestic and/or international, therefore, total exceeds 100%.

Theme 4: GH refers to the connectivity of health systems and their dependence on each other regardless of geography

Some respondents shifted their perspectives due to inequities in vaccine distribution: “I’ve definitely thought more about vaccine distribution and how healthcare in one country can impact other countries when there are limited resources” (Black/AA/White/Biracial Preclinical Female). A separate respondent wrote: “Global health now includes a broader definition of policy and resource allocation. The vaccine distribution is an example of how having poor GH policy and unequal distribution of resources can affect the health of many” (Black/AA Preclinical Female). But many focused on our collective connectivity in the wake of the pandemic: “[The pandemic has made it clearer than ever that our individual health depends upon our collective health” (White Clinical Male). Similarly, the theme of borderless health equity is inclusive of all resource deprived communities: “I’ve realized that ‘global health’ encompasses domestic health, as well as global health now [includes the health (and healthcare infrastructure provision etc […] of the entire global interrelated system” (White Research Female). GH is interconnected with domestic health: “[I have] more recognition that the ‘global health’ perspective can be applied within the United States and within San Francisco” (White Research Male).

Theme 5: GH encompasses the consequences of systemic racial oppression and health injustices

One respondent observed that “anti-racist movements helped to shed more light on violence and systematic oppression inherent to the settler-colonialist past of so many of the industrialized nations, including the United States, and that racism [and] poverty [are] feature[s] of this system” (White Clinical Male). Another respondent wrote “anti-racism and anti-oppression impact community health, both mentally and physically. I … now pay more attention to discrimination, racism, and oppression as a public health risk” (Hispanic/Latino Preclinical Male). The relationship between racial justice and health justice emerged during the pandemic because of stark health disparities: “[I think the recent pandemic and highlighting of racial inequities helps me to remember to include in my definition the interactions between nations and between groups of differing power and with differing access to resources” (White Research Male).

Domain 2: the potential role of the pandemic and US racial justice movements in shaping students’ perceptions of GH

Theme 4: GH refers to the connectivity of health systems and their dependence on each other regardless of geography

Our aim was to describe definitions of GH among medical trainees and to identify the potential association between the COVID-19 pandemic and recent US racial justice movements on perceptions of GH and its role in medical education. We found that students remained interested and committed to GH, and that prior to the pandemic, medical school represented an important opportunity to pivot from a volunteerism mindset to a more academic or research focused approach.
Two domains with five thematic subgroups emerged from our analysis. We found some students retained limited definitions of GH as bringing expertise to other countries. However, many others considered GH to be a continuum focused on addressing local disparities, which seemed to derive from and connect to how racial disparities and COVID-19 impacted their definitions. The diversity in responses from students at the same institution highlights the potential variability that still exists in how people define GH.

The dual challenges of racial injustice and a global pandemic have not deterred medical students’ interest in GH. We hypothesized that in the same way COVID-19 has disrupted medical education, shifting classes online and limiting away rotations, engagement in GH would seem less feasible to students. Rather, we found students continue to want future careers in GH, consistent with pre-pandemic interest and the increased demand over the past decade for medical schools to provide more GH education.20 The continued interest reflected in our survey spanned stages of training, gender identities, racial and ethnic backgrounds, and career interests, which may mirror the increased inclusion and diversity of GH, such as welcoming specialties like surgery and anesthesiology. However, the pandemic and US racial justice movements challenged some respondents’ prior perceptions of GH. Interestingly, more respondents cited racism as the primary driver of their shifting definition of GH; many cited racial justice as synonymous with health justice. Vaccine distribution was also cited as an important example of health inequity both globally and domestically, which was a shift in perspective for many respondents. The pandemic expanded their understanding of GH from an isolated international experience to including local phenomena21 and perhaps strengthened interest in studying and integrating GH into their clinical, preclinical, and research curricula.

However, many students faulted the pandemic for causing a gap in GH education rather than a reimagining of how students might engage, with some needing to modify their research projects or cancel international clinical rotations. Rabin et al. noted how the COVID-19 pandemic has highlighted the importance of bidirectional educational exchange and the inter-reliance of HIC and LMIC health systems, arguing that this pause in typical GH engagement was an opportunity to reexamine educational relationships with partner institutions.22 The demand and funding for US-based students to visit partners in LMICs has grown quickly but does not always align with partner priorities, needs, and preferences. Similarly, the reciprocity for LMIC partner engagement at US-based institutions is far from equitable.23 LMICs are seeking more opportunities and more equitable experiences for their trainees. One existing example, provided by Weine et al. is collaboration between students in the University of Illinois at Chicago Global Medicine program and the Federation of African Medical Students’ Associations who jointly developed an online intervention for mental health and psychosocial support.24 Using this break as an opportunity to ensure mutually beneficial goals and contributions are established could be critical to improving the quality and equity of GH partnerships going forward.25

While students described the pandemic limiting travel and closing doors to certain activities, it conversely opened a promising window for GH curricula and engagement with the expansion of virtual tools. Investing in online platforms might facilitate the creation of more accessible, formalized GH curricula that can be incorporated into medical didactics and protected education time, while also enabling GH departments with similar goals to join.26 The opportunity to develop novel online curricula is a chance to pivot toward more ethics training and evidence-based methods of GH engagement.27 These well-established recommendations for enhanced GH education could be more aptly mobilized during this period where global travel has decreased but students want to continue to engage in this work.

Our study was limited by a small sample size; however, the size of the target population is not routinely quantified, preventing the calculation of a precise response rate. This small sample size might reflect an overall diminished interest in GH or a core group of GH focused students who were highly motivated to participate in this study. Additionally, as a single-institution survey at a US medical school, our results were constrained to the perspectives of US medical students, potentially limiting external validity. Our qualitative analysis may also be limited by self-selection bias and the potential bias of researcher perspectives, although two separate reviewers met to agree on themes and sub-themes to mitigate this. Despite these limitations, our findings are congruent with themes emerging in current GH and medical education literature, suggesting they can be extrapolated more broadly. We also anticipate further studies on student perceptions of GH, ideally both in the United States and abroad, to add to our findings.

Conclusions

Our study found that the dual forces of a global pandemic and racial justice movement provided a unique opportunity for GH education. The 2021 Black Lives Matter protests, rising in the wake of the deaths of George Floyd and many others, created space for medical students and educators interested in GH to grapple with a history of racism and colonialism that continues to permeate the field to this day.24 The pandemic simultaneously revealed inequities not only in the United States, where there was a greater impact on lower socioeconomic status communities and racial minorities, but also across the world, where there have been disparities in access to resources such as medical supplies and vaccines.13,28 While our survey showed COVID-19 forced many engaged with GH both clinically and through research to either change or restrict their focus, most survey respondents also endorsed a perspective change as a result of the pandemic. We found that for many medical students, the societal effects of the pandemic catalyzed a shift to a ‘global is local mindset’22 rather than stymying it. We propose that GH educators seize upon this enhanced focus to make necessary changes to GH curricula and engagement that focuses on true equity, inclusion, and bilateral benefit, regardless of geography.

Supplementary Materials

Supplementary data to this article can be found online at https://doi.org/10.1016/j.jss.2022.11.020.
Author Contributions

Phoebe Miller: Developed and tested survey tools, oversaw data analysis, and primarily responsible for manuscript writing. Ruth Laverde: Contributed to the development and testing of survey tools, data analysis, and manuscript writing. Avery Thomas: Contributed to the development and testing of survey tools, data analysis, and manuscript writing. Paul Park: Contributed to the development and testing of survey tools, data analysis, and manuscript writing. Doruk Ozgediz: Provided substantial feedback on survey tool and manuscript writing. Marissa Boeck: Senior and corresponding author, provided substantial feedback on survey tool, data analysis, and manuscript writing.

Disclosure

None declared.

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