



## What is global surgery? Identifying misconceptions among health professionals



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### ABSTRACT

**Background:** Global surgery has emerged as a new field within academic surgery. Despite attempts to provide a common definition, it is unclear whether health professionals understand what is meant by the term “global surgery.” This study aims to characterize current understanding of global surgery among healthcare workers.

**Methods:** One hundred medical students, residents, physicians, nurses, and allied health professionals were interviewed on their perceptions of global surgery using a six-question qualitative survey. Responses were coded and analyzed for common themes.

**Results:** Sixty-one percent of participants did not know the meaning of global surgery. Those under age 40 were more likely to relay an accurate definition. Of participants with knowledge of global surgery, 44% had previous exposure to global health and 85% expressed interest in global health or surgery.

**Conclusions:** Although often used in academic surgical settings, the term “global surgery” is not well-understood among health professionals. There is no clear consensus on what it means to be a global surgeon or what constitutes a successful career in global surgery.

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### Introduction

Global surgery has long been unrecognized in the global health sector, described by Paul Farmer in 2008 as “the neglected stepchild of global health.”<sup>1</sup> Since this statement, there has been a dramatic rise in interest and research surrounding global surgery.<sup>2</sup> A 2018 PubMed search for “global surgery” yielded 601 results total, with 550 of those results written in the last 5 years, lending evidence toward the recent rise of interest in global surgery. This focus is well warranted given that in 2010, it was estimated that 30% of the global burden of disease required surgical management.<sup>3</sup> Numerous landmark publications have since been produced outlining disparities in surgical access and setting goals for accessibly integrating surgical care into health systems worldwide.<sup>4–7</sup>

Interest in global surgery has likewise risen among medical

students, residents, and other health professionals. In 2018, a study of residents showed that over 80% of surveyed surgical residents had an interest in global surgery, with 13% planning to pursue an academic career in global surgery.<sup>8</sup> Additionally, 41% of surveyed medical students hoped to incorporate some form of global health into their careers.<sup>9</sup> Though the interest is evident, it is unclear whether these individuals share a common understanding of the meaning of global surgery and the career of a global surgeon.

In 2014, global surgery was defined by The Lancet Commission on Global Surgery as “an area of study, research, practice, and advocacy that seeks to improve health outcomes and achieve health equity for all people who require surgical care, with a special emphasis on underserved populations and populations in crisis.”<sup>5</sup> This definition served to clearly articulate the role of surgery within global health in order to more easily set objectives, communicate goals, and facilitate community cooperation.<sup>5</sup> We chose this broad definition as the basis for our study because it was all-encompassing and came from a preeminent voice in the global surgery arena. Many other organizations and individuals define global surgery similarly, with an emphasis on providing clinical care in low-resource environments around the world.<sup>8,9</sup>

Despite such unifying attempts, it remains uncertain whether

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health care professionals in the United States understand or agree on what is meant by the term “global surgery.” This study therefore aims to characterize current understanding of global surgery on a qualitative basis.

## Materials and methods

We conducted a qualitative study consisting of open-ended interviews with medical students, residents, physicians, nurses, and other allied health professionals. Due to the lack of knowledge surrounding the meaning of global surgery, we chose a qualitative approach to best capture the wide array of perceptions found in this population. A six-question survey was designed and 100 participants were subsequently interviewed in multiple hospital settings. Participants responded to questions listed in Table 1.

Healthcare workers and students were approached in the hospital setting and asked to voluntarily participate in the study for no compensation. Participants were chosen randomly in hospital hallways of two major medical centers in Alabama. No information was collected on those who declined to participate. None of the subjects were chosen for previous knowledge or prepped in advance regarding the subject matter. Individuals were categorized based on gender and apparent age less than 40 or greater than or equal to 40. IRB approval was not sought for this pilot study; therefore, identifying information such as exact age was not collected. Non-healthcare professionals were excluded from the study. Additionally, incomplete interviews were excluded.

Two investigators conducted the interviews in person from July to August 2018. Interview responses were recorded and entered into a spreadsheet using descriptive codes. Responses were independently coded by both interviewers and any discrepancies were reconciled. Counts were generated for coded responses as shown in Table 2. An accurate definition of global surgery was defined as adhering to at least one component of the definition: study, research, practice, or advocacy seeking to improve health and access to surgical care globally. Chi-square tests were used for comparison of categorical variables with p-values less than 0.05 being considered statistically significant. Statistical analyses were performed with SPSS.

## Results

One hundred participants were identified and met all study criteria. Seventy-two women and 28 men participated in the interview. Sixty-five of those individuals appeared to be 40 years of age or older, while 35 appeared to be less than 40 years old.

Sixty-one percent of the participants interviewed did not know the meaning of global surgery. Examples of correct responses to “What is global surgery?” from the remaining 39% included “performing surgery in other countries with limited resources,” “dealing with problems of global health related to surgery around the world,” and “ways countries around the world train physicians and treat surgical problems.” Individuals under the age of 40 were significantly more likely to provide an accurate description of global surgery than those aged 40 or older ( $p = 0.001$ ), though

**Table 1**

Interview Questions
1) What is global surgery?
2) Are you interested in global health or global surgery? If so, in what capacity?
3) Do you have any previous exposure to global health or global surgery?
4) What does it mean to be an academic global surgeon?
5) How can someone pursue a career in academic global surgery?
6) What would an effective career in global surgery look like?

**Table 2**  
Correct Responses to “What is global surgery?”

Demographic Value	Correct Response
Total, n = 100	39 (39%)
Men, n = 28	11 (39%)
Women, n = 72	28 (39%)
<40, n = 65	33 (51%)
≥40, n = 35	6 (17%)

there was no significant difference between men and women (Table 2). Forty-four percent of participants with an understanding of global surgery had previous exposure to a global health field, most commonly involving short term service trips abroad. Eighty-five percent of participants with knowledge of the subject expressed personal interest in global health or global surgery. The remaining 61% who did not know the correct meaning of global surgery most often replied with statements of uncertainty or described global surgery as “surgery all over the body.”

In response to interview questions related to an academic career in global surgery (questions 4 through 6 in Table 1), respondents relayed varying themes as detailed in Table 3. Participants with knowledge of global surgery described an academic global surgeon as one who practices medicine internationally (44%), teaches (38%), participates in research (31%), and utilizes evidence based care (13%). One respondent cited an academic global surgeon as one who “not just performs procedures and contributes to healthcare in areas of need but who also teaches methods to healthcare professionals in those areas so that surgery can be more properly performed.” Another stated that global surgeons would “perform surgery and do research about trends or needs of people in other countries and figure out ways to meet them.”

A career pursuing global surgery was thought to involve medical training (44%), networking (36%), and exposure (28%). Examples of exposure included short term mission trips, global surgery fellowships, and research opportunities. An effective career in global surgery was most often categorized as impactful (56%) and sustainable (33%), with others including successful surgeries (21%), advocacy (8%), and fame or recognition (3%) as markers of career success. Most respondents without prior knowledge of global surgery replied with “unsure” to the remainder of the questions, though some did touch on themes listed above in their responses.

## Discussion

Given increasing exposure to global health and global surgery in higher level education and medical school, it is not surprising that younger respondents were more familiar with the meaning of

**Table 3**

Qualitative themes from correct respondents (N = 31)	N (%)
<b>What does it mean to be an academic global surgeon?</b>	
Practice Internationally	17 (44)
Teaching	15 (38)
Research	12 (31)
Evidence Based Care	5 (13)
<b>How can someone pursue a career in academic global surgery?</b>	
Medical training	17 (44)
Networking	14 (36)
Exposure	11 (28)
<b>What would an effective career in global surgery look like?</b>	
Positive impact/alleviate need	22 (56)
Sustainable/teaching	13 (33)
Perform successful surgery	8 (21)
Advocacy	3 (8)
Fame and recognition	1 (3)

global surgery. Those appearing less than 40 years old were almost three times more likely to recognize and understand the meaning of “global surgery” than older respondents. This highlights the novelty of the term and how quickly it has spread among younger health professionals.

In conjunction with other studies, our study found that those with prior exposure were more likely to be interested in and familiar with global surgery.<sup>10,11</sup> Though not demonstrated here, it is likely that increased exposure will culminate in future academic interest, lending one to believe that the population of healthcare professionals involved in global surgery will dramatically increase as this interest in global surgery ages. Unfortunately, this age divide may lead to a disproportionately small number of opportunities for research, funding, and experience in global surgery desired by the staggering number of young people interested.

It is most important to note, however, that most health professionals were unfamiliar with the term global surgery. Despite the frequent use of the term in academic circles, there appears to be a large faction of healthcare professionals who are not familiar with the concept of global surgery as an academic discipline. We believe that this lack of awareness results in a lack of interest, funding, and commitment to the cause. This knowledge is especially important for healthcare professionals, who have skills and resources needed to address disparities in access to surgical care. As an example, if individuals were completely unaware of plastic pollution as an environmental issue, there would be no reason to decrease consumption, donate to organizations reducing pollution, or share knowledge with others. Likewise, in global surgery, lack of knowledge of the definition and its consequences leads to challenges with forward progress in establishing global surgery as an essential component of universal health care.<sup>5</sup>

Given the methodology of this study, multiple limitations exist. The interviews were entirely conducted at two medical centers in Alabama and therefore lack broad generalizability due to small sample size. The potential for selection bias exists since all survey participants live in Alabama. In addition, although the participants were recruited across multiple floors of various hospitals, there are likely large portions of hospital workers and students who were missed in the sampling. For example, the discrepancy between the total number of men and women that were surveyed could have been due to imperfect sampling. Upon reflection, the higher proportion of women could be attributed to higher numbers of women in nursing and mid-level positions at our institution.

Future studies are warranted to evaluate perceptions on a national scale in order to capture understanding of global surgery in a broader context. It would be useful to delineate understanding between healthcare workers of different specialties to better understand where education is needed. Additionally, studies should focus on evaluating knowledge in relation to the emphasis of global health and global surgery at specific institutions, as participant understanding is likely shaped by the interest of surrounding individuals. Moving forward, further work is needed to characterize the pathways that exist for those interested in global surgery and to find ways to implement an effective career in global surgery.

In conclusion, global surgery is a new field that is becoming

popular among younger healthcare professionals and trainees. Though popular in academic surgery, the term “global surgery” is not well recognized by healthcare professionals. While younger respondents were more likely to provide an accurate description of global surgery, most could not articulate a clear path to becoming a global surgeon or pursuing a career in global surgery.

## Authorship

Study concept and design was performed by HC, KMH, PJA and MNA. Data collection and analysis were performed by MNA and PJA. MNA, PJA, and KMH prepared the original manuscript. All authors reviewed and revised the final manuscript.

## Declaration of competing interest

All authors have read the journal’s policy on disclosure of potential conflicts of interest and have none to declare.

## Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.amjsurg.2019.11.021>.

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