



## Survey article

# Participation in global health delivery: Survey results from the Society of Gynecologic Oncology



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## 1. Introduction

Cancer is the leading cause of mortality in low- and middle-income countries (LMICs) (Farmer et al., 2010), killing more people than HIV/AIDS, tuberculosis, and malaria combined (Moten et al., 2014). Moreover, it is estimated that > 60% of the world's total cancer cases and > 70% of the world's cancer deaths occur in LMICs (Moten et al., 2014). Prior reports indicate that > 30% of cancer-related deaths would be prevented in LMICs if the necessary treatments were available (Moten et al., 2014). Access to surgical oncologic care and training is particularly limited in LMICs. According to The Lancet Oncology Commission, there will be 21.6 million new cancer cases worldwide in 2030, and 80% of these individuals will need surgery (Sullivan et al., 2015). However, less than a quarter of these patients will receive the care they need due to inadequate investment in education and training of healthcare personnel, public surgical systems, and research (Sullivan et al., 2015; Randall et al., 2016). The Commission estimates that < 5% of patients in low-income countries and 22% of those in middle-income countries will have access to safe cancer surgeries (Sullivan et al., 2015).

Addressing the disparities in global cancer morbidity and mortality requires improving education around cancer prevention, increasing funding for health systems and cancer care, and training health care providers. Gynecologic oncologists play a critical role in these efforts. As specialists dedicated to medical and surgical treatment of gynecologic cancers, they offer unique expertise in developing treatments tailored to the resources available and in providing specialized cancer care. Clinical outcomes of gynecologic cancers are better when patients are treated by trained sub-specialists (Sullivan et al., 2015; Randall et al., 2016) and when surgery is performed by gynecologic oncologists (Li et al., 2016; Engelen et al., 2006; Roland et al., 2004; Chan et al., 2011). Studies of cervical cancer have shown better compliance with

surgical guidelines and fewer operative complications when radical hysterectomies were performed by gynecologic oncologists and that recurrence-free survival and cancer-specific survival was higher following treatment by a gynecologic oncologist (Li et al., 2016). Similar benefits have been shown for ovarian (Engelen et al., 2006; Chan et al., 2007) and endometrial cancer (Chan et al., 2011).

There has been increasing emphasis on the specific and important role of gynecologic oncologists in improving cancer outcomes worldwide (Randall et al., 2016), yet published literature has focused on non-surgical specialties. Gynecologic oncologists are key to direct provision of care, training medical personnel, advocating for increased funding and recognition of work done in LMICs, and building systems to facilitate access to safe, evidence-based care. Thus, we aimed to quantify gynecologic oncologists' self-reported experiences with and barriers to participation in global health delivery.

## 2. Methods/materials

The survey was modeled off of prior work identifying barriers to participation in global health among medical students and physicians (Rhee et al., 2014; Bozorgmehr et al., 2010), and was piloted among the research team and residents at our institution. The survey assessed participants' experience with, training in, and barriers to participation in global health delivery—both as trainees and, if applicable, as attending physicians. Following approval from the institutional review board at our institution, we obtained access to the Society of Gynecologic Oncology (SGO) listserv through an online application. In December 2016 we used REDCap to email a link for the anonymous survey to attending physicians and fellows who were active members in SGO and who had an email on file (Harris et al., 2009). We also emailed two reminders to eligible participants who had not completed the survey. By completing the survey, respondents consented to participation.

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Data were analyzed using SAS 9.4 (SAS Institute, Cary, NC). Data were compared using chi-square or Fisher's exact tests. All tests were two-sided and  $p$  values  $< 0.05$  were considered statistically significant.

### 3. Results

#### 3.1. Demographics

The survey was distributed to 1532 physicians and 272 completed it, yielding a response rate of 18%. Most respondents were attending physicians (82%), born in the United States (79%), and  $\geq 40$  years old (64%). Among attending physicians, 53% had greater than ten years of experience practicing as a gynecologic oncologist. Among fellows completing the survey, 38% were in the first year of fellowship.

#### 3.2. Global health experience

Just over half (54%) of respondents had an interest in global health prior to fellowship, and less than half (46%) of all respondents had participated in a global health experience. Among those who participated in a global health experience, 46% reported doing so as attending physicians only, 6% as fellows only, 22% as residents only, and 26% did so at multiple points during their career. Of respondents who were interested in global health before fellowship, 64% participated in a global health experience during residency, fellowship, and/or as an attending, compared to 31 (25%) of the 125 respondents who were not interested in global health before fellowship. This difference was statistically significant ( $p < 0.0001$ ).

Table 1 shows the entities through which respondents participated in global health. Of the respondents who participated in global health, the majority did so through their home institutions. International non-governmental organizations, local hospitals, and religious groups and missions also were common entities through which respondents completed global health experiences. A greater proportion of respondents

**Table 1**  
Entities through which respondents participated in global health.

	Position at time of global health participation <sup>a</sup>		
	As a Resident (%) $n = 51$	As a Fellow (%) $n = 33$	As an Attending (%) $n = 83$
Home institution <sup>b</sup>	67	70	47
International non-governmental organization <sup>c</sup>	26	30	30
Local hospital <sup>d</sup>	29	24	43
Religious group/mission	26	18	17
Multilateral or bilateral agency <sup>e</sup>	6	9	10
Disaster relief organization <sup>f</sup>	2	3	1
Other <sup>g</sup>	8	6	13

<sup>a</sup> Percentages do not add to one hundred, as some respondents participated through multiple entities.

<sup>b</sup> Includes a clinical elective, invitation from university, and/or international surgical trip organized through home institution.

<sup>c</sup> Includes organizations such as Partners in Health, Bill and Melinda Gates Foundation, International Federation of Red Cross and Red Crescent Societies, Project Hope, and Oxfam.

<sup>d</sup> Defined as a hospital that is governed and supported by the host country.

<sup>e</sup> Includes organizations such as the World Health Organization, Pan American Health Organization, United Nations, and United States Agency for International Development.

<sup>f</sup> Includes organizations such as Doctors Without Borders and the International Committee of the Red Cross.

<sup>g</sup> Self-funded (4) or funded through private (7), military-based (1), non-religious medical mission organizations (1), or not specified/unknown (7); three respondents reported more than one entity in their response.

who participated in global health as attending physicians had their experience through a local hospital, while a greater proportion of respondents who participated as residents did so through religious groups and missions.

The primary focus of respondents' global health experiences is shown in Fig. 1. Among both trainees and attending physicians, respondents' global health experiences were primarily focused on direct patient care (92% of residents, 88% of fellows, and 89% of attending physicians). Approximately one-third of respondents had a global health experience dedicated to research. An even smaller proportion participated in an experience dedicated to humanitarian assistance, which includes activities that relieve suffering in natural disasters or civil conflict (The Office of Website Management Bureau of Public Affairs, 2007; Organisation for Economic Co-operation and Development, 2018).

#### 3.3. Global health training

Only 11% of respondents reported having formal global health training, and only 13% felt gynecologic oncologists received adequate training in global health. Among the 30 respondents who had formal global health training, the majority had completed a global health specialization during graduate study (43%); the most common types of graduate study were a Master of Public Health (45%) or a Master of Science (20%) degree. While a greater proportion of respondents with additional training participated in global health (52%) compared to those without additional training (44%), this difference was not statistically significant ( $p = 0.27$ ).

Among the 125 respondents who had a global health experience, most did not have any specific preparation prior to their experience. The most commonly cited form of preparation was self-study, including use of travel or language books (24%). Only 8% of respondents reported receiving a course provided by the respondent's hospital, residency, or fellowship, and 4% reported having a formal course provided by the organization the respondent traveled with.

#### 3.4. Barriers to participation in global health

For those who had a global health experience, the primary barrier was lack of funding (57%), followed by the inability to get time off (54%), lack of clinical coverage while away (42%), family responsibilities (39%), and financial responsibilities (31%). Among those without a global health experience, the primary barriers were inability to get time off (41%), followed by family responsibilities (36%), lack of clinical coverage while away (30%), lack of funding (26%), and financial responsibilities (24%). The barriers that were significantly different between the two groups were lack of funding, inability to get time off, lack of clinical coverage, and lack of support from one's home institution. The cited barriers to participation in global health, stratified by global health experience, are shown in Fig. 2.

The majority (64%) of respondents identified additional elective time as the primary resource that would increase global health participation among trainees, and 54% felt this would increase participation among attending physicians as well. Increased funding was the most commonly cited (61%) resource required to increase participation among attending physicians. Approximately one quarter of respondents felt that a formal course provided by the home institution would increase participation among trainees (27%) and attending physicians (24%). Only 11% of respondents felt that neither trainees nor attending physicians need additional resources to facilitate participation (Fig. 3).

### 4. Discussion

The participation of surgical subspecialists, such as gynecologic oncologists, in global health has many potential benefits, including the development of programs tailored to the disease burden and resources

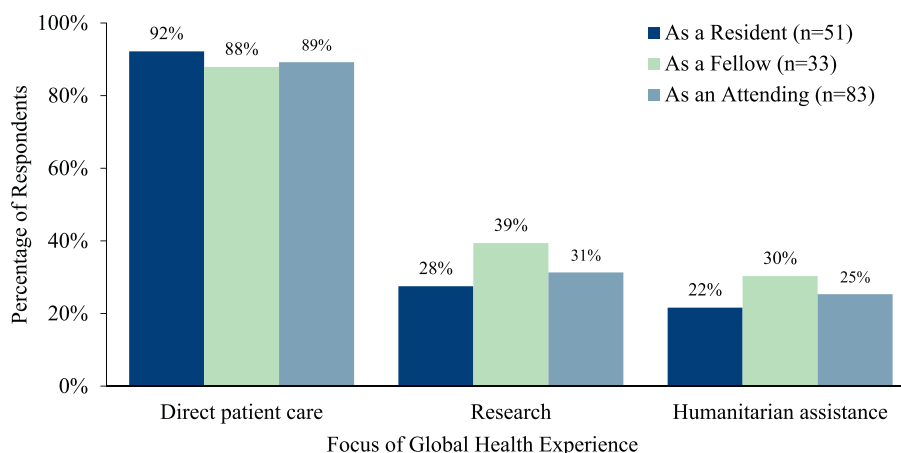


Fig. 1. Focus of respondents' global health experience\*.

available in communities across the world; additional education and training for healthcare teams and surgeons in these areas; and improved access to resources through international advocacy. Our survey identified many barriers to global health participation among gynecologic oncologists, including lack of funding, inability to get time off, lack of clinical coverage, family responsibilities, and financial responsibilities. Increasing clinical coverage and elective time for global health work may increase participation among gynecologic oncologists who already have global health experience as well as among those who do not have prior experience. Further research is needed to determine what types of interventions may offset the family and financial responsibilities that keep providers from participating in global health. The fact that lack of funding was primarily identified by those who had a global health experience, but less commonly cited by those without a global health experience, indicates that this may not be a barrier to initially pursuing a global health experience, but may limit the extent of participation or subsequent participation in global health work among providers.

Also notable from our study is that most respondents had minimal preparation for their global health experiences. The expansion of academic global health programs has raised many concerns regarding how to ensure there is mutual benefit among participants within global health work, that those participating in an exchange are qualified for the role they will be serving, that there is appropriate supervision of trainees, and that there are systems for mitigating potential harms that might arise in international partnerships (Crump et al., 2010). There is a paucity of research as to the balance between potential harms and benefits of the participation of gynecologic oncologists in global health. While gynecologic oncologists play a critical role in improving global cancer care, we must also ensure that such participation is sustainable

and that any potential harms are adequately addressed. Our findings indicate that structured global health training could increase participation in global health among providers, and also could help minimize the potential harms of providers being underprepared for the circumstances and context in which they will be working.

The fact that only one-third of respondents participated in global health experiences dedicated to research highlights this as another opportunity for further development. More research is needed to fully understand cancer burdens, barriers to care, resources available, and the impact of proposed and implemented interventions within LMICs (Bray et al., 2014). Given the emphasis placed on research productivity within academia, increasing research opportunities within global health may increase participation among providers while also improving global cancer care. Ideally, such research would occur through formal partnerships with local institutions under similar safety and ethical standards to ensure that the research is relevant to the communities in which it is conducted and that it is instituted in a culturally appropriate manner.

While the low response rate to this survey limits the generalizability of our findings, there was substantial representation of respondents who did and did not have an interest in global health, as well as those who had global health experience and those who did not. The cross-sectional nature of the study also limits our ability to draw conclusions regarding temporal associations. For example, we cannot comment on whether exposure to formal graduate or global health study truly leads physicians to participate in global health experiences more frequently, or if it is the same subset of respondents who are interested in graduate study that are more inclined to pursue experiences in global health. In addition, the barriers and needed resources that were identified by

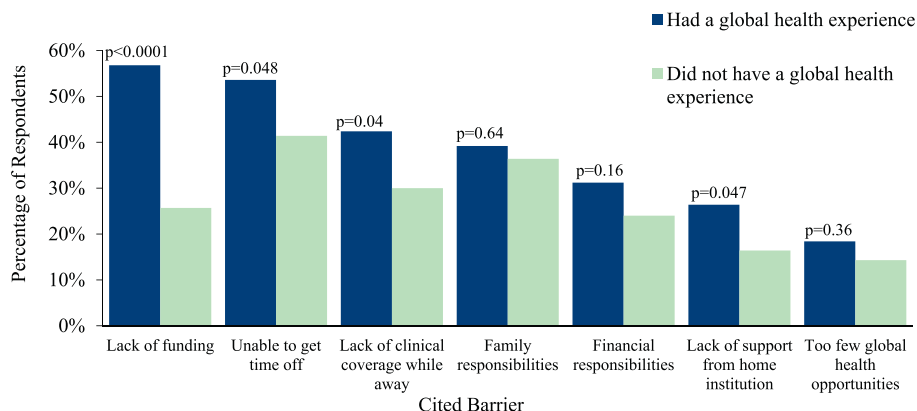


Fig. 2. Barriers to participation in global health (n = 265).

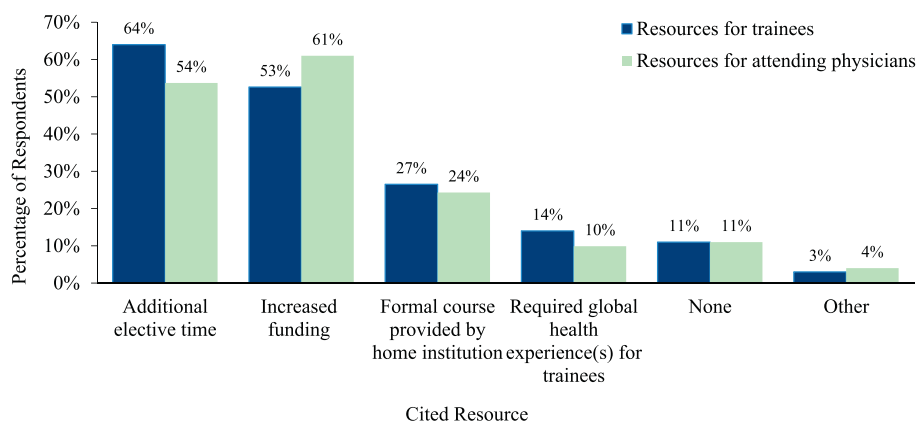


Fig. 3. Resources needed to increase global health participation ( $n = 272$ ).

respondents may vary by region, type of hospital facility, or other variables not assessed in our study.

We are unaware of existing data on the barriers gynecologic oncologists face in participating in global health. Our findings indicate that increased elective time, funding, clinical coverage, and formal global health training may facilitate the participation of gynecologic oncologists in global health. Future directions for research include implementing and evaluating interventions that support global health participation among fellow and attending gynecologic oncologists. Increased opportunities for research and academic advancement based on global health work also should be considered, as it would not only improve the provision of care in LMICs but also may increase participation in global health among gynecologic oncologists. Lastly, training in global health should be made more broadly available and standardized to increase awareness of opportunities, empower collaborations, and improve the quality of participation among providers who choose to participate.

None of the contributing authors have any conflicts of interest to report.

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