

# Benefits and Challenges of a Global Health Scholars Track for Family Medicine Residents

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**How to cite this paper:** Zain, S., Virk, J., Wilson, D., Kahn, L., & Holmes, D. (2024). Benefits and Challenges of a Global Health Scholars Track for Family Medicine Residents. *Open Journal of Social Sciences*, 12, 399-409.

<https://doi.org/10.4236/jss.2024.123027>

**Received:** January 30, 2024

**Accepted:** March 26, 2024

**Published:** March 29, 2024

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## Abstract

**Background and Objectives:** The increase in globalization necessitates changes to the training of new generations of physicians, who need to be qualified to address the diversity of health challenges their patients face. The University at Buffalo Family Medicine Residency Program founded the Global Health Scholars Track (GHST) in 2013 to address this need. The primary purpose of this study was to assess the benefits of the GHST perceived by family medicine residents. **Methods:** Family medicine residents in 2016 were surveyed to assess their self-reported core primary care skills and perceptions about engaging in global health work. The responses of residents in the GHST program were compared to those of non-GHST residents. Focus groups elicited GHST residents' perceptions regarding several aspects of their global health track. Quantitative data were analyzed with two-sample, two-tailed *t* tests and qualitative data were assessed by using thematic content analysis. **Results:** GHST residents reported significantly higher ratings than non-GHST residents ( $P < 0.05$ ) for 3 of 8 global skills queried: communication, cultural sensitivity, and the ability to handle pressure. There were also significant differences in 8 of 25 attitudes and perceptions regarding global health work. GHST residents indicated their global health experiences provided greater personal motivation, cultural sensitivity, and professional skill development than their other residency clinical experiences. Opportunities for program improvement included increased faculty involvement and academic support. **Conclusions:** The GHST is effective for enhancing cultural sensitivity, communication skills, and motivation of family medicine residents.

## Keywords

Family Medicine, Global Health, Education, Curriculum, Scholars Track,

## 1. Introduction

Globalization has accelerated the flow of information, people, finances, technology, and pathogens across nations (Labonté et al., 2011). Physicians increasingly need to be aware of a multitude of infectious diseases, competent at addressing mental and physical health issues common globally, and culturally attuned to an increasingly diverse patient base (InciSioN UK Collaborative, 2020). As public health issues become global issues (Labonté & Gagnon, 2010), medical curricula with a national framework are no longer adequate; the globalization of health calls for a globalization of medical curricula and thus necessitates a change in medical education and training (InciSioN UK Collaborative, 2020).

Medical schools, residency training programs, and fellowship programs have begun adding global health experiences and electives to their curricular offerings, and more residency programs now incorporate global health specialty tracks (Bills & Ahn, 2016; Haq et al., 2019; Jalan et al., 2020; Kolars et al., 2011; McHenry et al., 2020; Rybarczyk et al., 2020). In a systematic review of studies surveying US residency program directors, global health training was particularly prominent in three specialties: 83% of residency programs for preventive medicine, 74% of emergency medicine programs, and 71% of surgery programs included global health training. According to web-based searches of residency program websites, global health training was described for 41% of programs specializing in emergency medicine, 33% of pediatrics residency programs, and 22% of family medicine residency programs (Hau et al., 2017).

A survey of US family medicine residency directors found that 74.3% (191 of 257) reported that their program offers international and/or domestic global health experiences (Hernandez et al., 2016). In almost half of these programs (47.5%), residents paid for their own international global health-related expenses; 8.8% and 6.6% of these residency programs paid for the international trips outright or via special grants, respectively (Hernandez et al., 2016). According to a survey of fellowship directors and designees, the most common single-specialty global health fellowship programs in North America were in emergency medicine (23/50) and family medicine (22/50) (Evensen et al., 2019). The most challenging aspect of offering international health experiences to trainees was reported to be lack of funding (Evensen et al., 2019; Hau et al., 2017; Hernandez et al., 2016).

The University at Buffalo Department of Family Medicine created a Global Health Scholars Track (GHST) in 2013 to ensure clinical and cultural competence in its trainees. The GHST is funded by an endowment and supported by faculty and staff. Local teaching hospitals allow GHST residents to take time to travel overseas. The specific goals of the GHST are as follows:

- 1) Optimize the core skills of primary care, such as history and physical exam

skills, by working in settings without high technology and specialty networks.

2) Optimize cultural sensitivity knowledge, attitudes, and skills, such as effective communication skills and the ability to work with translators and/or interpreters.

3) Encourage and equip residents with the medical and cultural skills to care for under resourced populations locally and globally.

4) Promote and support resident engagement in scholarly activities pertaining to global and public health, such as research and community development.

5) Strengthen recruitment of medical students to the institution's family medicine residency program.

Soon after the National Resident Matching Program results are released every March, residents can apply to the GHST before their training begins in July. GHST resident responsibilities include the following:

1) Participate in GHST-sponsored monthly dinner seminars. These take place after mandatory afternoon teaching sessions and include discussions on topics such as travel medicine, water and sanitation issues, cultural sensitivity, and infectious diseases as well as personal and professional reflections on global health experiences.

2) Read and listen to assigned materials in preparation for the dinner seminars.

3) Engage in one global health elective per year in a low or middle income country; GHST residents are provided with a list of suggested travel locations. Alternatively, residents can arrange their own global health experiences with approval by the GHST Director.

4) Complete a global health scholarly project that is submitted to a peer-reviewed journal for publication (e.g., conduct original research, write a case report, write a narrative review, develop innovative curriculum, etc.).

5) Obtain health insurance and evacuation insurance for overseas travel.

6) Remain in good academic standing in the residency program.

When this study was conducted, nine residents were in the GHST program (three from each class year) and two had already graduated from the program. The primary objective of this study was to document the benefits of the program. The secondary objective was to identify the strengths of the program as well as weaknesses that could be addressed.

## 2 Methods

### 2.1. Study Design

This was a mixed-methods evaluation study that used self-reported quantitative data obtained from surveys of family medicine residents at the University at Buffalo as well as qualitative data obtained from focus groups and dinner seminar observations. The purpose of the focus groups was to explore residents' motivations for joining the GHST, their global health experiences, and their perceptions of the GHST. For the surveys, residents were asked to self-rate their medi-

cal skills and attitudes toward specific aspects of general health care delivery. The responses of GHST residents were compared to those of non-GHST residents.

This study was granted approval for human subjects research by the University at Buffalo Institutional Review Board (study number 00000209).

## 2.2. Surveys

Residents were asked to self-rate their medical and communication skills, perceptions regarding relevant healthcare issues, and perceptions of the quality of the GHST program. Survey statements from previously developed similar evaluations were adapted (Godkin & Savageau, 2001; Gupta et al., 1999; Ramsey et al., 2004). The surveys distributed to non-GHST residents did not include questions regarding perceptions of the GHST. All surveys included a free-text section to collect resident demographics, a section to rate various skills on a five-point Likert scale, and a section to rate attitudes and perceptions about several aspects of health care delivery on a five-point Likert scale. Focus group questions were designed to learn more about residents' motivations for pursuing medicine as a career, perceptions about healthcare, and clinical experiences.

## 2.3. Data Collection

Data were collected in 2016 from three focus group sessions: one for GHST residents and two for non-GHST family medicine residents. The GHST session was held at the beginning of a global health dinner seminar. The non-GHST sessions were held on two separate occasions at two different residency training sites in Buffalo, New York. Each session involved distributing the surveys and conducting focus group discussions. Completed surveys were collected prior to the focus group discussions. The focus group sessions were moderated by a graduate student not affiliated with the medical school or the Department of Family Medicine who attended two of the GHST-sponsored global health dinner seminars and took notes on GHST residents' comments and the seminars in general.

## 2.4. Data Analysis

Descriptive and inferential statistical analyses were conducted with SAS (SAS Institute, Inc., Cary, NC). Likert scale ordinal data were treated as interval data. Independent, two-sample, two-tailed *t* tests were used to assess differences between the self-ratings for skills, attitudes, and perceptions of GHST residents and non-GHST residents; significance was determined at a *P* value of <0.05. Qualitative results were assessed via thematic content analysis to identify major themes of the observations and discussions from the focus group sessions (Burnard et al., 2008).

# 3. Results

## 3.1. Participants

The study sample included all residents enrolled in the Family Medicine GHST

at the University at Buffalo (n = 9) as well as one recent graduate of the GHST program. Non-GHST family medicine residents at the University at Buffalo (n = 19) at two local residency training sites served as the control group.

### 3.2. Quantitative Data

GHST residents rated their communication skills, cultural sensitivity, and ability to handle emergent situations significantly higher than non-GHST residents (Table 1). There were no significant differences between the GHST residents and non-GHST residents with respect to the other skill and knowledge categories.

GHST residents highly rated their experiences in the GHST program (Table 2). On average, they agreed that the track met or exceeded their expectations as a whole and that the global health dinner seminars were informative and engaging. They indicated their global health experiences improved many of their skills more so than their other residency experiences. They also indicated their renewed and/or strengthened passion for medicine was due to the global health experiences rather than other residency experiences.

Participants were asked to rate 25 prepared statements regarding their attitudes and perceptions about global health-related topics (Table 3). There were statistically significant differences between the GHST and non-GHST responses to eight statements. Notably, GHST residents indicated that global health experiences influenced their decision to pursue primary care and renewed their passion for medicine.

### 3.3. Qualitative Data

GHST and non-GHST residents were queried about their motivations and reasons for choosing to pursue family medicine. Residents in both groups provided similar answers, citing 1) continuity of care, 2) caring for the complete lifespan of patients, and 3) the diversity of the patient population as their top motivators. Non-GHST residents mentioned treating the whole family and getting to know patients on a personal level as attractive features of the specialty. GHST residents cited flexibility in career, gaining a diverse skill set, and practicing preventive medicine as factors that informed their decision to pursue family medicine.

GHST residents were generally satisfied with the program and emphasized that their overseas experiences reinforced their passion for medicine, made them less reliant on technology, improved their clinical skills, opened their horizons and exposed them to new paths, made them more independent, improved their public speaking skills, exposed them to other residents and medical students interested in global health, and allowed them to meet remarkable people. They also noted that seminar speakers were excellent, and they appreciated the involvement and enthusiasm of the doctors who volunteered to attend the seminars. Residents described the GHST program as “well ahead of the game” and well organized. They mentioned that the support from the Department of Family Medicine was good and felt that the department understands the track is vital

**Table 1.** Residents' self-rating of medical skills and knowledge.

Skill/Knowledge <sup>a</sup>	Score, Mean (SD) <sup>b</sup>		P value
	GHST, n = 10	non-GHST, n = 19	
Ability to handle pressure (e.g., emergent situations)	4.20 (0.79)	3.37 (0.60)	<.01
Communication skills	4.30 (0.48)	3.79 (0.54)	.02
Cultural sensitivity	4.30 (0.68)	3.68 (0.58)	.02
Physical examination skills	3.40 (0.70)	3.79 (0.54)	.11
Diagnostic skills	3.50 (0.53)	3.42 (0.51)	.70
Ability to handle complex cases	3.30 (1.06)	3.42 (0.61)	.70
Knowledge of healthcare	3.40 (0.52)	3.50 (0.79)	.72
Knowledge of infectious diseases	3.20 (0.63)	3.16 (0.50)	.85

Abbreviations: GHST, Global Health Scholars Track; SD, standard deviation. <sup>a</sup>Items are listed in order of ascending *P* value. <sup>b</sup>Survey items were evaluated on 5-point Likert scale: 1, no skill; 2, novice; 3, intermediate; 4, advanced; 5, expert.

**Table 2.** Residents' perceptions on how the GHST impacted their experiences.

Statement <sup>a</sup>	Score, Mean (SD) <sup>b</sup>
The experiences renewed/strengthened my passion for medicine	4.50 (0.53)
The experiences improved my cultural sensitivity	4.50 (0.53)
The experiences improved my diagnostic skills	4.40 (0.84)
The experiences improved my communication skills	4.10 (0.88)
The program has met or exceeded my expectations	4.00 (0.94)
The global health seminars are informative or engaging	4.00 (0.82)
The experiences improved my ability to handle pressure	4.40 (0.70)
The experiences improved my physical examination skills	4.50 (0.53)

Abbreviations: GHST, Global Health Scholars Track; SD, standard deviation. <sup>a</sup>GHST residents were asked if their global health experiences improved their attitudes and skills more than their other residency experiences did. Statements are listed in order of descending mean scores. <sup>b</sup>Statements were scored according to 5-point Likert scale: 1, strongly disagree; 2, disagree; 3, neutral; 4, agree; 5, strongly agree.

**Table 3.** Residents' attitudes and perceptions on global health-related topics, general healthcare delivery, and healthcare issues.

Statement <sup>a</sup>	Score, Mean (SD) <sup>b</sup>		P value
	GHST, n = 10	Non-GHST, n = 19	
Practicing in a developing country can be a rewarding experience	5.00 (0)	4.32 (1.00)	<0.01
Practicing in a developing country fosters professional development	5.00 (0)	4.21 (0.98)	<0.01

**Continued**

I am interested in partaking in global health mission(s) in the future	4.70 (0.48)	3.68 (1.06)	<0.01
A global health experience(s) influenced my decision to pursue primary care	4.20 (0.79)	3.00 (1.20)	0.01
Residency training should include voluntary electives in developing countries	4.70 (0.48)	3.84 (1.12)	0.03
Patient cultural and religious beliefs play an important role in patient care	4.80 (0.42)	4.32 (0.67)	0.03
Global health experiences renew passion for medicine	4.60 (0.70)	3.79 (0.98)	0.03
A global experience is the best way of increasing cultural sensitivity	4.30 (0.68)	3.53 (1.07)	0.05
Physicians in the United States overprescribe antibiotics	4.40 (0.70)	3.68 (1.00)	0.06
Physicians in the United States underuse physical examinations	4.20 (0.79)	3.58 (0.96)	0.09
Working with the underserved influenced my decision to pursue primary care	4.00 (1.12)	3.32 (1.20)	0.15
Medical school training should include exposure to health care in developing countries	4.40 (0.97)	3.84 (1.02)	0.16
Physicians in the United States overuse diagnostic tests	4.20 (0.79)	3.68 (0.95)	0.16
Practicing in a developing country promotes cost-conscious health care	4.60 (0.70)	4.11 (1.10)	0.21
An understanding of global health is becoming increasingly important	4.50 (0.71)	4.05 (0.91)	0.21
I am interested in working with underserved populations	4.20 (0.92)	3.68 (1.02)	0.22
There is not enough emphasis given to preventive medicine and primary care in the United States	4.60 (0.70)	4.21 (0.86)	0.23
Caring for the underserved renews passion for medicine	4.40 (1.08)	3.89 (1.10)	0.25
I am interested in having a practice serving immigrant patients	4.10 (0.88)	3.58 (1.26)	0.26
Global health experiences deepen knowledge of infectious diseases	4.50 (0.71)	4.21 (0.97)	0.42
The American health care system overemphasizes tertiary care	3.90 (0.748)	3.63 (1.07)	.48

**Continued**

Practicing in a developing country is more challenging than practicing in the United States	3.70 (0.95)	3.95 (1.13)	0.56
I am interested in pursuing an MPH	2.40 (0.84)	2.53 (1.47)	0.80
The American health care system is inefficiently designed	3.80 (1.03)	3.68 (1.25)	0.80
I am interested in academic medicine	3.30 (0.95)	3.37 (1.17)	0.87

Abbreviations: GHST, Global Health Scholars Track; SD, standard deviation. <sup>a</sup>Items are listed in order of ascending *P* value. <sup>b</sup>Statements were scored on a 5-point Likert scale: 1, strongly disagree; 2, disagree; 3, neutral; 4, agree; 5, strongly agree.

as a recruitment tool and adjunct to medical training because it contributes to “a higher quality product [physician].” GHST residents also hoped to participate in more global health-related experiences in Buffalo, such as working with refugees. A number of GHST residents aspired to open clinics abroad, continue to participate in annual global health service trips, and attend global health conferences.

With regard to some of the weaknesses of the program, GHST residents expressed concern that their allotted continuing medical education (CME) time was obligatorily used for their overseas experiences, with the expectation they would use vacation time if they wished to attend conferences or other CME activities. They also expressed that reimbursement of the costs incurred during their global health trips could take a long time to receive. Residents noted the onus was on them to find speakers and schedule lectures; they wanted the residency faculty to become more involved in this process. There were also concerns regarding the academic support offered for scholarly projects. Despite these shortcomings, residents expressed a desire to increase the size of the GHST program to allow more residents to participate. They asserted that the track should have increased advertisement and indicated an interest in being involved in the selection of each year’s new GHST residents.

#### 4. Discussion

Residents in the GHST program at the University at Buffalo have allotted time to travel abroad as well as have access to financial support. They can choose the focus for their scholarly projects and/or collaborate with other residents and may travel abroad in groups. The results of the present study show that GHST residents had greater confidence in their communication skills, cultural sensitivity, and ability to handle emergent situations than non-GHST residents but similar confidence in skills in other aspects of family medicine. GHST residents attributed their improvements to the program, which also revitalized the passion for medicine to a greater degree than other residency experiences. These results suggest that the GHST was effective in providing opportunities to engage and immerse residents in enriching global experiences, further supporting the value

that experiential global health education programs impart on resident training as demonstrated by other institutions (Haq et al., 2019; Hau et al., 2017; Hernandez et al., 2016; Jalan et al., 2020; McHenry et al., 2020; Rybarczyk et al., 2020).

It is important to note that the non-GHST family medicine residents at the University at Buffalo also provided care to refugees during their rotation at a safety net primary care practice. Because this rotation is a global health-oriented experience, the non-GHST residents may have higher skill levels and different attitudes regarding global health care in general than would be expected from other control groups. Nevertheless, the results from the surveys indicate that the GHST residents placed higher value on global health experiences and their attunement with the cultural and religious beliefs of their patients than the non-GHST residents. It is possible that residents that are already more culturally sensitive are the ones that choose to enroll in the GHST program. However, the experiences of GHST residents are almost certainly superior to those from the domestic rotations with regard to fostering cultural sensitivity because of the immersion into the cultures and interactions with patients and people when traveling abroad; these experiences cannot be simulated in US hospitals and clinics or in lecture halls where traditional residency training takes place.

Of note, GHST residents revealed a greater desire than the other residents to work with underserved and immigrant populations in the future. This may reflect the fact that residents felt that patients abroad were very welcoming and appreciative of them being there and the medical care they provided. Indeed, residents remarked on their surprise with and respect for the stoic and hard-working nature of the patients they cared for abroad.

GHST residents rated their track favorably but noted improvements could be made. They indicated that the curriculum needs refinement and increased faculty involvement, pointing to logistical issues with the scholarly project requirement. Despite these issues, GHST residents were optimistic about how the program would evolve in the future and were impressed with the support the program received from the department.

A limitation of this study is the small sample size. There was also possible participant bias, because GHST residents were selected for the program on the basis of a pre-existing interest in global health. Also, this study relied on self-ratings for the skills evaluations. Future research is needed to study many residents from a multitude of institutions to validate the findings presented here. It would be helpful if future studies include pre- and post-test analyses to document the direct impact of global health programs on resident self-perceived changes in their medical knowledge and skills.

## 5. Conclusion

The Global Health Scholars Track at the University at Buffalo Family Medicine Residency Program was viewed favorably by participants, who indicated that their experiences helped to strengthen some areas of knowledge and skills that are pertinent to primary care in America as well as to global health. The main

weaknesses identified by GHST residents reflect the early stage of the program and which can be mitigated by growth and expansion of the program along with refinements to the curriculum and additional academic and faculty support. More research is needed, but this study suggests that this global health program is effective in helping residents to enhance their cultural sensitivity, communication skills, ability to handle pressure, and passion for practicing medicine.

## Acknowledgements

The authors wish to thank Ranjit Singh, MD, MBA, and Karen Dietz, PhD, for reviewing this manuscript and providing thoughtful feedback. The authors are also grateful to John E. Brewer, MD for partially funding this project through the University at Buffalo Foundation/John E. Brewer Global Medicine Endowment Account.

## Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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