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Medical Student Education

Career Influence of an International Health Experience During Medical School

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Background and Objectives: *International health (IH) experiences are popular among medical students and may influence career choices. The International Health Fellowship Program (IHFP) consisted of preparatory coursework and field experience in a developing country. We conducted a survey 4–7 years later to assess the career influence of IHFP participation.* Methods: *Fellows completed a questionnaire regarding training, practice setting, patient population, further international work, and knowledge and attitudes about IH.* Results: *Surveys were completed by 42 (70%) fellows; 31% spend most of their time working with underserved populations, 67% have been involved in community health projects, 74% practice primary care, 29% have an MPH degree, 57% have done further work in developing countries, while 90% named one or more barriers to further IH experiences. Knowledge and attitudes about IH were largely retained. Most fellows (67%) believed the IHFP influenced their careers.* Conclusions: *Most fellows felt that IHFP participation had a positive influence on their careers. While a causative relationship cannot be inferred, fellows demonstrate a strong preference to work with underserved populations and engage in community service activities. Compared with US physicians, IHFP fellows are more likely to practice primary care and obtain MPH degrees. Medical schools that seek to produce graduates with these qualities should make efforts to increase quality IH opportunities for their students.*

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International health experiences are gaining popularity among US medical students. More than 20% of students graduating from US medical schools in 2003 participated in an international health experience during their undergraduate medical training, compared with just 6% of students graduating in 1984.[1] Students may be motivated to pursue international health experiences to fill perceived gaps in their education, to seek cross-cultural understanding, or to fulfill altruistic ideals.[2] The documented effect of international health electives on physicians in training has been largely positive, with benefits ranging from improvements in physical examination skills and decreased reliance on technology to better understanding of global public health issues and a greater tendency to enter primary care.[3-10]

Following a competitive application process, 60 senior US medical students were selected to participate in the International Health Fellowship Program (IHFP) during 1995–1997. Participants were selected based on their commitment to international, cross-cultural, or community-oriented primary health care and letters of recommendation. The IHFP, which has been described previously,[9] consisted of an intensive 2-week preparatory course in international health followed by a 6- to 8-week field experience in a developing country. The program was funded by a 2-year grant from the National Security Education Program.[11] Upon return, many fellows expressed a desire to pursue further work with medically underserved populations at home and abroad.[9]

This study assessed the effect of the IHFP on participants' careers 4 to 7 years after the experience.

Methods

During 2001–2002, past participants in the IHFP completed a structured questionnaire by mail regarding advanced training and medical specialty, practice setting and environment, patient population, community health activities, further international work, knowl-

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edge and attitudes about international health, and the influence of the IHFP on their careers. Results were compared with historical data from multiple sources.

Data were analyzed using Epi-Info Version 6.0 (Centers for Disease Control, Atlanta). A Likert-type scale was used to measure knowledge and attitudes about statements related to international health. Fellows had previously completed a 64-item questionnaire before (baseline) and after (post-field) IHFP participation. We selected the seven statements from previous surveys for which the fellows' baseline and post-field experience scores were significantly different.[9] The paired Student's *t* test was used to identify differences between current and baseline individual item scores for those who completed both surveys. Fellows were asked to describe the most significant influence of the IHFP on their practice, and a modified Delphi process was used to identify common themes expressed in the responses. The authors first independently reviewed the narrative responses and then convened to reach a consensus.

Results

Surveys were completed by 42 (70%) of 60 IHFP fellows. Seven (12%) did not respond, and we were unable to find a valid mailing address for the remaining 11 (18%). Twenty-one (50%) respondents were female, the median age of respondents was 33 years (range 30–45), and 34 (81%) had completed residency training.

Specialty Choice

The specialty choices of IHFP participants were compared with those of all US physicians less than 35 years old, an age group similar to the IHFP cohort. The source of data regarding US physicans' specialties was the American Medical Association data files.[12] We found that 74% of fellows versus 43% of US physicians were engaged in primary care specialties, including family medicine (36% versus 11%), internal medicine (29% versus 22%), and pediatrics (10% versus 11%) (Table 1).[12] Our findings were consistent with those reported by a similar international health program, in which 70% of participants entered primary care specialties.[5]

Public Health Degree

Twelve (29%) fellows either had or were pursuing a master of public health (MPH) degree, and another 14 (33%) indicated they would pursue an MPH degree given the opportunity. Similarly, a study from Arizona found that 27% of students participating in an international health elective planned to obtain an MPH degree.[8] Among recently graduated US physicians, it is estimated that approximately 3% obtain an MPH degree.[13,14]

Practice Site

Of the 39 fellows currently in clinical practice, 18 (46%) described their practice environment as inner city, 10 (26%) as non-inner-city urban, nine (23%) as rural, and two (5%) as suburban. Six (15%) work in federally designated Health Professional Shortage Areas.

Thirteen (31%) respondents spend more than half of their time working with underserved patient populations. This compares favorably with the findings of another study that found that 23.1% of those who had completed an international health experience during medical school planned to work with the underserved versus 5.6% of those who did not.[15]

Community Health Activity

Twenty-eight (67%) fellows have been involved in community health activities since completing the IHFP. Activities included working in volunteer clinics for immigrants, refugees, victims of torture, indigenous peoples, and the homeless; performing sports physicals and serving as team physicians; directing boards of nonprofit organizations; and giving health-related presentations, staffing health fairs, and mentoring youth.

Twenty (48%) respondents have given talks or presentations on subjects pertaining to international health since completing the fellowship, and 14 (33%) have helped create international health experiences for other physicians in training.

International Work

Since completing the IHFP, 24 (57%) fellows had spent further time working in nonindustrialized countries. Twenty-five (60%) planned on working overseas

Table 1

Age, Gender, and Medical Specialties of IHFP Participants Compared With US Physicians Less Than 35 Years

Characteristic	*IHFP Fellows (%) n=42*	*US Physicians* (%) n=136,016*
Age range, years (median)	30–45 (33)	Under 35
Female	21 (50)	53,550 (39)
Primary specialty		
Family medicine	15 (36)	14,379 (11)
Internal medicine	12 (29)	29,251 (22)
Pediatrics	4 (10)	14,854 (11)
Obstetrics and gynecology	3 (7)	6,623 (5)
Emergency medicine	2 (5)	4,863 (4)
Other	6 (14)	66,046 (49)

* Age less than 35 years, 1999 data[12]

IHFP—International Health Fellowship Program

in the future, two (5%) did not, and 15 (36%) were not sure about future work abroad. Similar studies have shown that 81% of students and 21% of residents participating in international health electives planned future work overseas.[4,8]

Thirty-eight fellows (90%) identified at least one barrier to pursuing additional international health experiences, and 26 (62%) named more than one. The most common barriers were financial obligations that required them to maintain the level of income generated in a US-based practice. This reason was cited by 64% of fellows. Other cited reasons included family concerns (38%), work or practice restrictions (38%), residency restrictions (36%), and lack of opportunities (19%).

Knowledge and Attitudes

For the seven Likert-type items measuring knowledge and attitudes about international health, we were able to compare the individual item scores for 28 participants who had completed these questions on both the current and baseline surveys. Responses to five of the seven statements were significantly different from baseline, indicating that their attitudes formed shortly after IHFP participation had not reverted to baseline (Table 2).

Twenty-eight (67%) respondents either agreed or strongly agreed that participation in the IHFP influenced their careers, while the remaining 14 (33%) fellows neither agreed nor disagreed that IHFP participation influenced their careers. This is consistent with findings from a residency-based program in which 62.4% of participants stated that their international health experience played an important role in career decisions.[3]

When fellows were asked to describe the most significant influences of the IHFP on their practices, seven common themes were identified among the responses: greater cultural understanding (23 fellows, 55%), enhanced commitment to work with medically underserved populations (17, 40%), motivation to pursue future international health work (13, 31%), commitment to reducing health disparities at home and abroad (13, 31%), better understanding of socioeconomic influences on health and illness (11, 26%), greater appreciation for the importance of public health (7, 17%), and improved foreign language proficiency (6, 14%) (Table 3).

Discussion

Most fellows believed that participation in the IHFP had a positive influence on their careers. While a causative relationship cannot be inferred from this study, many fellows now work with underserved populations and engage in community health activities. They are more likely to practice primary care and obtain MPH degrees than their US counterparts. While many fellows have since had further international health experiences, a vast majority named at least one barrier to their continued work in international health.

The proportion of Americans who are medically underserved continues to grow. There were an estimated 43.6 million uninsured and countless more underinsured

Table 2

Knowledge, Attitudes, and Beliefs About Topics Related to International Health at Baseline and During Early Career, 4–7 Years After IHFP Participation*

Item	*Baseline*	*Early Career*	P *Value***
Oral rehydration therapy is a simple and cheap tool to combat a major cause of child mortality.	1.39	1.07	.004
In doctor-patient communications, when there is no language barrier, nonverbal communication is still important.	1.36	1.07	.003
Patients may undermine their own treatment due to misunderstood instructions.	1.79	1.18	<.001
Public information campaigns strongly affect behavior.	2.75	2.18	.013
Mothers should not nurse their children for more than 1 year.	3.93	4.25	.017
Patients often use symbolism to describe or allude to symptoms.	1.89	1.71	.363
Community health programs are not important in the US where medical care is readily available.	4.50	4.68	.363

* Mean scores using 5-point Likert-type scale, with 1=strongly agree and 5=strongly disagree

** From paired Student's *t* test of baseline versus early career values, n=28

IHFP—International Health Fellowship Program

Table 3

Themes Identified From Qualitative Analysis of Narrative Responses to the Question "Describe the Most Significant Influence of IHFP Participation on Your Practice," Number of Fellows Expressing Each Theme, and Examples

Theme	*Number (%) n=42*	*Example*
Cultural understanding	23 (55)	"It helped me understand the huge impact cultural and language barriers have on patient care." "It opened my eyes—mostly in nonmedical ways." "(It) gave me a perspective I could never have otherwise and...I am a better doctor for what I learned."
Commitment to working with the medically underserved	17 (40)	"It has made me eager to help those who are truly in need." "In many ways my current choice is international: working with the Navajo in the United States"
Motivation to pursue further international health work	13 (31)	"It encouraged me to go back to Africa." "I will volunteer my time overseas as an anesthesiologist."
Commitment to reduce disparities in health at home and abroad	13 (31)	"It reinforced my desire to address the disparities between the haves and the have-nots in this world." "Having seen the poverty of the Honduran people motivated me to influence US policies to improve health for people around the world."
Importance of socioeconomic influences on health	11 (26)	"I recognize how resource allocation is so important in underserved areas."
Appreciation for public health	7 (17)	"It helped me realize that to be truly effective as a physician I must consider the public and global health perspectives."
Language proficiency	6 (14)	"I am the only physician fluent in Spanish in our region."

IHFP—International Health Fellowship Program

Americans in 2002,[16] and there is a significant deficit of primary care providers in all but the non-poverty tracts of large urban areas.[17] IHFP fellows tend to work with underserved populations, and many credit their IHFP experience with fostering this commitment, a sentiment consistent with previous findings.[10] One respondent wrote, "The IHFP allowed me to see that physicians were out there making a difference every day." Another acknowledged that the fellowship "allowed me to see the vast disparity in health care between the haves and the have-nots in this world and reinforced my desire to work in such an environment." When asked how career plans were influenced by the IHFP, one fellow declared succinctly, "I became more focused on caring for the poor."

Improvements in health during the last century clearly demonstrate the value of public health programs.[18] The percentage of US physicians involved in public health activities has steadily declined over the past several decades.[19,20] Physicians with public health experience early in their training are more likely to pursue careers involving public health,[19] and interest in international health leads many physicians to study public health.[21] The IHFP provided such an experience, and IHFP fellows were more likely than their US counterparts to obtain MPH degrees. "(The fellowship) confirmed my interests in international health and the importance of public health interventions," remarked one participant.

While the total number of physicians per capita has increased in the United States during the last several decades, the number engaged in primary care, particularly family medicine, has remained relatively constant and insufficient to meet the health needs of communities.[22] Among IHFP fellows, 74% are in primary care specialties and half of those in primary care practice family medicine.

As physicians advance in their training, they acquire more skills and experience to offer persons in the developing world. Therefore, we were discouraged to find that nine out of 10 respondents cited at least one barrier to further international work, and most cited more than one. Of the obstacles named, all but one (family concerns) can be readily modified. Financial obligations can be alleviated by loan deferral or forgiveness for those who choose to work in less-developed countries. Residency and practice restrictions may be restructured to allow service overseas. Improved promotion of existing programs and the development of new initiatives may also be used to increase international health opportunities for interested physicians.[23]

Limitations

This study was limited by several factors. First, the response rate was 70%, so results do not reflect the entire IHFP cohort. In addition, only 28 fellows completed both the baseline and current international health knowledge and attitudes questions. This shortcoming arose in part because baseline surveys were inadvert-

ently not administered to 19 participants.

Further, a selection bias likely exists because the IHFP fellows were chosen in part based on their commitment to "international, cross-cultural, or community-oriented health care."[9] And, while most fellows believed the IHFP positively influenced their careers, we do not propose that this effect was necessarily causal, although we do believe that it reinforced their motivation and commitment. While widely used, the introspective causal report study design lacks objectivity.[24] An alternative study design better suited to causal inference, such as a cohort study, might be able to delineate the impact of an international experience on students with similar baseline characteristics. Nonetheless, we feel that IHFP participation had at least a reinforcing effect on participants' career choices.

Conclusions

Participation in a structured international health elective, such as the IHFP, may reinforce or increase students' selection of primary care careers and their commitment to community health and public health and work with medically underserved populations. Medical schools should increase opportunities for, and reduce barriers to, quality international health experiences for students.

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