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Short Communication

Does participation in international health electives during pre-clinical years influence a student's interest in primary care?

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ABSTRACT

This pilot study aimed to characterize the effect of participation in an international health elective (IHE) during the preclinical years on a student's interest in pursuing a career in family medicine and primary care specialties. 100 first- and second-year medical students were surveyed on their participation in IHEs and family medicine interest group (FMIG) and family medicine-related activities, meetings, and conferences. A total of 44 students responded to the survey. 35 students (79.5%) had participated in an IHE outside of the United States. The percentage of IHE participants who had attended at least one FMIG event was significantly higher than the percentage of IHE non-participants (80% versus 33.3%; $p=0.006$) but there was no significant difference in any other variable studied. Despite limitations, our pilot study suggests that first and second year medical school students participating in IHEs are more likely than those not participating to attend at least one FMIG event; however there is no difference in students reported interest in primary care or family medicine as a specialty choice. As previous reviews have noted a paucity of neutral or negative studies in the literature, we hope that our observations of a possible lack of effect of participation in IHEs in the preclinical years on students' interest in primary care adds to the existing literature.

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INTRODUCTION

As the world's borders begin to blur, physicians in the U.S. are faced with increasingly diverse populations for which to care. Never before have accrediting organizations placed such a strong emphasis on cross-cultural communication and the development of cultural competency [1,2]. Many schools offer electives and opportunities in global health to meet these objectives. International health electives (IHEs) have been found to improve students' clinical skills, increase their tropical disease knowledge and increase their appreciation of public health [3]. Additionally, IHEs appear to be associated with students choosing careers in primary care specialties [4].

Our institution provides funding to students to cover participation in international health electives at any

time during their undergraduate medical education. Many utilize it to participate in IHEs in the pre-clinical years, during which there are two one-week long IHEs offered. Further, students are given one- to four-week elective blocks during these first and second years in which they have the opportunity to organize self-designed IHEs.

This pilot study aims to 1) evaluate what effect, if any, participation in IHEs in the preclinical years has on first- and second-year medical students' stated interests towards pursuing a career in family medicine and primary care, and 2) to quantify the effect that participation in an IHE in the preclinical years has towards participation in family medicine-sponsored activities.

METHODS

All first and second year medical students (Class of 2015/2016, n=100) were sent an e-mail invitation with a link to a secure survey site that collected responses in a de-identified fashion. The survey asked students to identify their year in medical school and characterize their participation in IHEs. Students were also queried on whether they had attended any Family Medicine Interest Group (FMIG) events (9 possible events), FMIG leadership meetings (yes or no response), family medicine conferences (8 selections), and whether they had engaged in any institution-specific family medicine opportunities available only to first and second year medical students (5 possible opportunities). Examples of FMIG events offered included a “Speed Date Our Specialty” event, a casting workshop, and an informational meeting regarding the National Health Service Corps. Institution-specific family medicine events included longitudinal shadowing programs, formal mentoring with family medicine faculty, and one- to four-week elective clinical opportunities available for first and second year students. Many of these opportunities were organized by the FMIG. Lastly, the survey queried students on their interest in primary care and Family Medicine (0-100 scale).

Data Analysis

A Wilcoxon rank sum test was used to compare groups for the number of FMIG events attended, number of conferences attended, number of family medicine opportunities engaged in, and reported interest in both primary care and Family Medicine. Pearson’s chi-

squared test was used to compare each group’s attendance to at least one FMIG event, FMIG leadership planning meeting, family medicine conferences, and engagement in at least one family medicine opportunity. All data was analyzed using REDCap Survey v1.3.9 and JMP 9.0.1.

RESULTS

A total of 44 out of a possible 100 students responded to the survey. Among the group were 19 first year medical students and 25 second year medical students. A total of 35 (79.5%) had participated in an IHE outside of the United States. The percentage of IHE participants who had attended at least one FMIG event was significantly higher than the percentage of IHE non-participants (80% versus 33.3%; $p=0.006$) but there was no significant difference in the total number of FMIG events attended between groups. (Table 1) Additionally, there was no difference in the total number of family medicine conferences attended, number of family medicine opportunities engaged in, reported attendance in at least one family medicine conference, engagement in at least one family medicine opportunity, or attendance in at least one FMIG leadership planning meeting. (Table 2) There was no difference between groups in stated interest in primary care (median rating by participants in IHEs of 61.5 on a 0-100 scale versus non-participants rating of 50, $p=0.64$) or interest in family medicine (median score of 30 versus 47, $p=0.80$).

Table 1. Comparison of groups: Attendance in at least one of the following: FMIG event, family medicine conference, family medicine opportunity or FMIG leadership planning meeting.

		Participated in IHE		Did not participate in IHE	p- value
Attended at least one FMIG event	Yes	80.0%		33.3%	0.006*
	No	20.0%		66.7%	
Attended at least one family medicine conference	Yes	51.4%		33.3%	0.33
	No	48.6%		66.7%	
Engaged in at least one family medicine opportunity	Yes	51.4%		33.3%	0.33
	No	48.6%		66.7%	
Attended at least one FMIG leadership planning meeting	Yes	22.9%		33.3%	0.52
	No	77.1%		66.7%	

*Statistically significant, $p < 0.05$

Table 2. Comparison of groups: Number of family medicine-related events attended.

		Participated in IHE (n=35)	Did not participate in IHE (n=9)	p-value
Number of FMIG events attended (Maximum # of events= 9)	Median	1	0	0.08
	Interquartile range	1-4	0-2.5	
Number of family medicine conferences attended (Maximum # of conferences= 8)	Median	1	0	0.58
	Interquartile range	0-1	0-1.5	
Number of other family medicine opportunities engaged in (Maximum number of other opportunities= 5)	Median	1	0	0.23
	Interquartile range	0-2	0-1	

DISCUSSION

In this small pilot study, we queried students on their reported interest in primary care and family medicine and their attendance at FMIG events and other family medicine-related activities. We chose to evaluate attendance at FMIG and family medicine events as a potential surrogate marker for interest in family medicine as participation in specialty interest groups has been found to be strongly associated with specialty choice [5]. Additionally, although student interest groups play a modest role in influencing career decisions [5,6], their greatest role has been cited to lie in preserving preexisting interest of students in a specialty [7,8].

Interestingly, this pilot study found that first and second year medical students who participated in IHEs were more likely to attend at least one FMIG event than non-participants; however there was no difference in the number of FMIG events attended between groups. This is in contrast to literature reviews from the past decade concluding that IHEs appear to be associated with career choices in primary care and family medicine [3,4]. Most of the studies included in these reviews were designed to measure outcomes associated with education and professionalism rather than IHEs' effect on career choices. In the few studies that attempt to characterize IHE effect on student interest in primary care and family medicine, results were based on students who had participated in lengthier trips or were farther along in their training than in our study [3,4]. It may be that the duration of the IHE and the student's year in medical school play a role in how formative the experience is in regards to interest in primary care.

Additionally, whether the relationship of the association of IHEs with career choices in primary care is due to self-selection of students interested in primary care or due to effect of the IHE itself—or both—is unclear.

With regards to timing of an IHE, one study found that less than one third of students interested in primary care at entrance to medical school report continued interest in primary care by the end of medical school [9]. Furthermore, approximately half of students reported this change in interest by the start of their clinical rotations [9]. If IHE participation by first- and second-year medical students was associated with increasing a student's interest in primary care and family medicine, it could potentially bridge this "interest gap" between a pre-medical school interest in family medicine and the later, formative mentorship experiences in the clinical years, which are widely recognized to be one of the most important factors in a student's selection of family medicine as a career [10,11]. Unfortunately, while our study shows that students are more likely to attend at least one FMIG event, the rest of our results do not suggest that IHEs in pre-clinical years are associated with an interest in primary care.

Our study is limited by the small sample size of students who did not participate in IHEs as well as the inclusion of only one institution. Our institution is fortunate in that it is able to provide funding to all students to participate in IHEs. This potentially limits the generalizability of our results. However as the IHE

experiences reported thus far in the literature are quite heterogeneous, there is great potential for institution-specific findings in all studies on IHEs; a concept that has been previously posited by others [4]. Another limitation is that our study does not look at residency match data, however our results suggest that in at least this small sample, participation did not increase interest in primary care.

Previous reviews of the effects of IHEs on students' education have noted a paucity of neutral or negative studies in the literature, suggesting a potential positive publication bias [3,4]. We therefore hope that our observations of a possible lack of effect of participation in IHEs in the preclinical years on students' interest in primary care adds to the existing literature. Future studies should elaborate on these results with information gathered from other institutions as well as explore any other effects of preclinical IHE experiences on students' specialty choices.

Despite limitations, our pilot study suggests that first and second year medical school students participating in IHEs are more likely than those not participating to attend at least one FMIG event; however there is no difference in students reported interest in primary care or family medicine as a specialty choice.

Conflict of Interest

The authors declare that they have no conflict of interest.

All research contained herein was conducting under guidelines of the Mayo Clinic Institutional Review Board. This research was deemed exempt (45 CFR 46.101, item 2) from IRB review. Documentation is filed under Mayo Clinic IRB Application #12-002675.

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