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Medical School Admission Requirement for Previous Clinical Experience and
Marketing of Short Term Medical Missions

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Abstract

Medical School Admission Requirements for Previous Clinical Experience and
Marketing of Short Term Medical Missions

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Background: The number of overseas Short Term Medical Missions (STMMs) marketing to students has grown dramatically in the last decade and can be associated with ethical and quality concerns. United States Allopathic medical schools rate prospective students on many factors, including their level of prior clinical experience. Students may seek out STMM experiences, which offer flexibility, affordability, and travel to a foreign land to meet application expectations and increase the chance of being accepted. This study examined whether medical school expectations for having prior clinical experience are contributing to the development of STMM's marketing to students to meet this need.

Methods: This was an exploratory, qualitative-quantitative, mixed-methods study. Allopathic medical schools were randomly chosen via purposive sampling to receive an online survey.

Descriptive statistics were collected and comparative evaluations performed using quantitative analysis with chi-square and one-way ANOVA testing. Of the schools surveyed, their web pages were also evaluated for communication on whether they expected applicants to have prior clinical experience. The top twenty websites for STMMs were chosen via saturation sampling for qualitative coding. Qualitative coding was performed utilizing a code book.

Results: Eight schools participated with 97 surveys completed. Web site searches for requirements on prior clinical experience: 50% no indication, 38% implicit requirement, and 12% explicit requirement. Sixty percent of respondents who review applications or are involved in interviewing students felt that “previous clinical experience” was either “very important” (37%) or “extremely important” (23%), and 51% felt a student would not be accepted in the institution without prior clinical experience. Ethical concerns with pre-medical students participating in STMM’s were reported in 64% of all respondents. However, more than 70% of those reviewing applications or involved in interviewing students felt STMM participation would at least moderately increase a student’s chance of acceptance. Qualitative analysis of STMM websites showed the top six themes included 1. targeting to students, 2. promoting the idea of helping others, 3. “future projection” of students in the field of medicine (images of volunteers dressed like, or performing tasks associated with, medical professionals), 4. tourism, 5. offering flexibility, and 6. offering self-improvement (career, application, resume-building).

Conclusion: Medical school expectations for prior clinical experience are not explicitly stated in most cases, yet opinions exist that having prior clinical experience is an important part of U.S. Allopathic medical school applications with regards to increasing the chance of acceptance. Survey results showed that despite an awareness of ethical problems with pre-med students participating in STMMs, their participation was felt by most respondents who reviewed

applications or interviewed students to increase the chance of acceptance to medical school at least moderately. Marketing of STMMs to students is growing in conjunction with the increasing competition for getting into medical school. The research is suggestive that a probable driver of STMM growth and marketing to students are medical school expectations for prior clinical experience in applicants.

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INTRODUCTION

Medical missions, particularly those which are shorter in nature (anywhere from 2 days to 30 days), are a prolific, and well-established, way in which health care is provided globally.¹ It is estimated that over 500 organizations exist, which regularly deploy such missions at an average rate of 10 per year.¹ Of note, this does not include organizations which are developed “ad hoc” in response to a global need such that the number of these missions is likely far greater. The growth of international service missions, which are short in nature (typically less than 30 days in duration) to provide experience to volunteer participants, particularly students, has grown dramatically over the past several years to meet increasing educational demands for such experiences.^{2,3} The aim to improve health on a global scale using an equitable approach is predicated upon several key historical global epiphanies resulting in, for example, the underlying frameworks of internationally agreed upon goals such as the Sustainable Development Goals outlined by the United Nations.⁴ These goals, first adopted in 2015, were meant to transform health by calling to action resource-rich nations and challenging them to reimagine the approaches to improving health and well-being globally.⁵ However, when the goal of medical missions is primarily to service the needs of the providing organization and its participants, several negative consequences can result. Such missions not only fail to approximate these Sustainable Development Goals, but may go further and cause direct harm to the recipients of such missions.

1.1 MEDICAL MISSION TERMINOLOGY

For this research, it is important to note that the terminology regarding medical missions, which are short in nature, and provide medical care or services (including educational) in

international settings, varies in the literature. This is illustrated by the fact that the following terminology may refer to the same medical mission. For example, Short-Term Medical Mission (STMMs), Short-Term Medical Service Trips (STMSTs), Short-Term Experiences in Global Health (STEGHs), and Medical Service Trips (MSTs) are all used within the literature in both independent and overlapping fashions to describe shorter-nature missions, which provide health care internationally. This paper focuses on consolidating the terminology used as follows. Medical missions which provide interventions of 30 days or less and may or may not be specifically tailored to meet educational needs will be referred to as STMMs henceforth. Given that not all STMMs specifically design their missions for educational purposes, but may inevitably provide this service, the use of the term STMM is felt to be less restrictive in nature than the other terms.

1.2 MEDICAL SCHOOL ADMISSION REQUIREMENTS AND STMMs

One possible explanation for the increasing demand of such missions is the extent to which United States (U.S.) based medical schools expect, or prefer, applicants to have attained clinical experience prior to admission. This is despite the fact that such experiences are not a routine offering for students in typical pre-medical curriculum programs at undergraduate universities and must be self-coordinated by students. The ability of untrained students to self-coordinate volunteer clinical activities can be challenging due to increasing rules about patient privacy, which are now restricting students to a higher degree from participating in classic experiences such as shadowing a Physician.⁶ Complicating this is the fact that “rigorous competition” for acceptance to medical school has increased the focus of students in pre-medical curriculums towards scientific classwork—a phenomenon dubbed “pre-med syndrome,” which leads to an inability to integrate self-attained clinical volunteer work into a student’s schedule.⁶ Medical school admissions nevertheless put a strong emphasis not only on the need for clinical experience, but experience

which is interactive rather than passive. An interview of Dr. Ed Lipsit who is a consultant providing information for the US. News and World Report's U.S. News Medical School Admissions Doctor blog, commented "only significant activities demonstrating a commitment of effort and time should be included (in the application)."⁷

The competition to get into medical school is also increasing. In the 2021 U.S. medical school application cycle for Allopathic (MD) programs, 62,443 applicants applied for 22,666 spots, averaging 18 applications each.⁸ Given the intense competition between applicants to get into medical school and acceptance rates as low as 2%, this expectation places potential students without prior careers in health care in a precarious position. The combination of intense student foci on classwork added to the challenges described above when trying to coordinate clinical volunteer activities and pressure for "significant activities", may result in the need to seek out clinical experience from places where patient privacy rules are more lax and offerings exist during school breaks and holidays. The engagements provided by STMMs provide an opportunity to meet these needs.

1.3 POTENTIAL PROBLEMS ASSOCIATED WITH STMMs

Increasing concern regarding STMMs has grown from observations that many of these missions are unregulated and associated with potential ethical problems, unsustainable outcomes, potential harm to patients, and in some cases even illegal practices.⁹⁻¹³ Most STMM programs involve organizations from high-income countries utilizing volunteers (many of whom pay to participate) to provide direct medical care, research, education to communities, or a combination of the above to those in low to middle income countries.⁴ Research on the impacts of such missions has been minimal in part due to the "unwarranted" and "(potentially) dangerous" assumption that the risk and safety of care provided by such missions is comparable to that

which is provided to patients in high income countries despite the lack of supporting evidence for this.¹²

The concern regarding the use of volunteers in missions is not new, however, and has been ongoing since the 1990's with field observations illustrating ethical and other concerns regarding the use of such individuals.¹¹ Bauer, 2017, notes aspects of neo-colonialism, which are propagated by such missions and were brought to light by multiple researchers, including the practice of training residents through such missions, using poor individuals from low and middle income countries as “experimental fodder,” or employing untrained volunteers, which he described as “the young ‘American on vacation’ (who) proudly hands out (medication)...a stethoscope around his neck conveying to the population a medical expertise that does not exist.”¹¹ Rowthorn and colleagues, 2019, concluded in their research of such missions—in this case they referred to STEGHs in particular—that “many activities undertaken (in such organizations) would be illegal if they took place on US soil.”⁹ A chilling example of a 22 year old premedical student volunteer from the U.S. is provided by Rowthorn, et al., 2019, who noted that he was determined to have an experience of delivering a baby in Tanzania and after receiving 30 minutes of verbal education from another volunteer midwife, proceeded to deliver a baby without any supervision.⁹

1.4 MEDICAL SCHOOL EXPECTATIONS FOR PRIOR CLINICAL EXPERIENCE

The connection between the premedical student's desire above to deliver a baby, stating “I'll be damned if I leave Tanzania and haven't delivered a baby,” coupled with the marketing of such missions to students (in one case to high school students) as a way to provide experiences such as delivering an infant or participating in a surgery is a concern.⁹ If one also considers medical school admission preferences as a potential driver for the creation of such demand and

marketing, the implication is startling and disheartening, as the intent of medical schools to create physicians to serve communities is in stark contrast to the negative consequences described.

The Association of American Medical Colleges noted that medical schools have expressed concern about unsupervised international volunteer activities, yet still “highly recommend or require” medical school applicants to have clinical experience.¹⁴ In a survey by the Association of American Medical Colleges in 2016, 87% of medical schools who responded said that a lack of such experience would place a potential applicant at a disadvantage compared to other applicants.¹⁴ Furthermore, despite an acknowledgement by medical schools (50% of those surveyed) that there were concerns about unsupervised international volunteer activities in student applications, there did not appear to be feasible alternatives provided by medical schools for typical applicants.¹⁴ In fact, proposed alternative activities for students unable to secure typical “shadowing experiences” included participation as an Emergency Medical Technician, Certified Nursing Assistant, Medical Assistant, Scribe, or performing Clinical Research, none of which are part of the standard pre-medical curriculum, and in all but the case of Clinical Research were actual professions would, which require an additional degree or certification than what is provided in an undergraduate pre-med degree.¹⁴ Given these dynamics, medical school admission criteria, specifically the “preference” or actual requirement for clinical experience, as a driver of potential negative consequences of STMMs is plausible. This research was to designed to explore whether medical school expectations for having prior clinical experience are contributing to the development of STMM’s marketing to students seeking out clinical experience for the purpose of getting into medical school.

METHODS

This research was an exploratory, qualitative-quantitative, mixed-methods study. In order to address the research question of whether medical school expectations for applicants to have prior clinical experience is contributing to the development of STMMs designed to meet this need, multiple related aims were developed, which drove the methods performed in this research. Consequently, the aims are reviewed here.

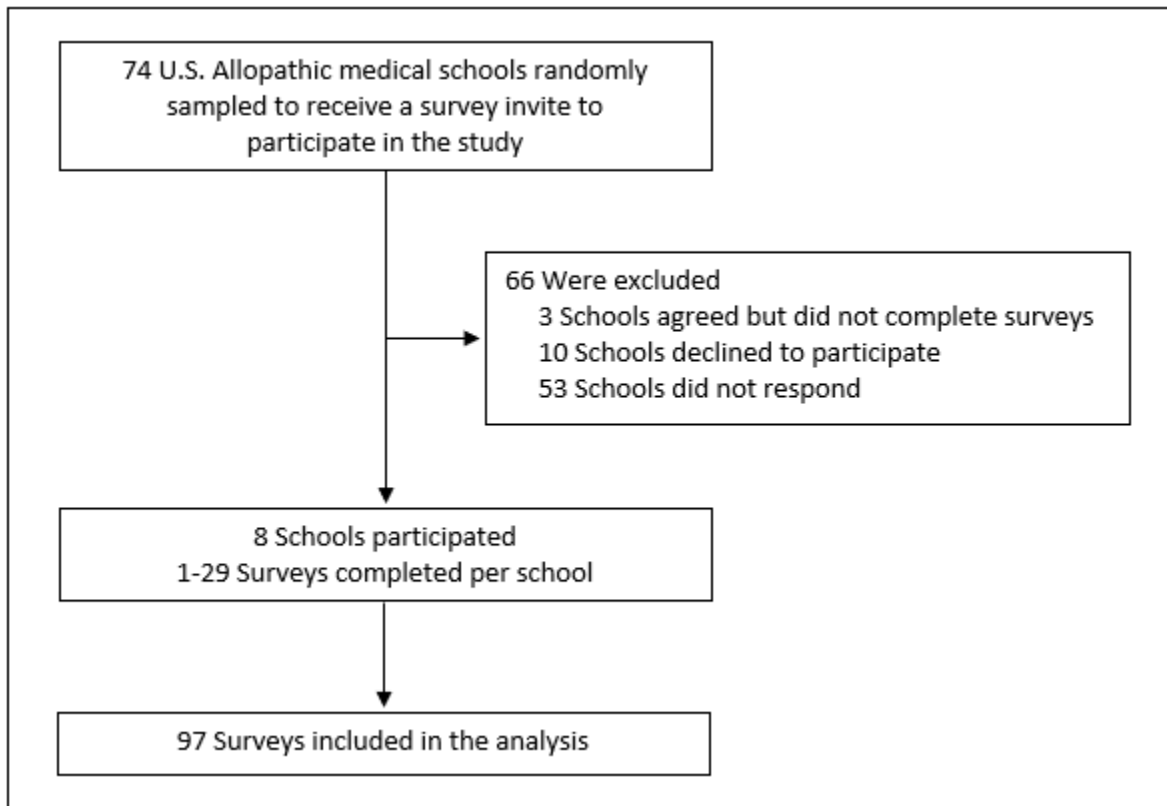
1.5 RESEARCH AIMS

Four inter-related aims were developed, which drove the methods by which the research was performed. These included the following: 1. Determine if Allopathic medical schools expect or prefer student applicants to have previous clinical experience when applying. 2. Explore the challenges medical school applicants have in attaining previous clinical experience. 3. Explore the online landscape of STMMs to determine how they are marketing to students. 4. Examine thoughts on students engaging in STMMs in order to meet the expectations for attaining clinical experience prior to applying to medical school. To answer these aims, the methods were designed to collect data within two “realms” (medical schools and STMMs). These methods for each realm are discussed below. Prior to the initiation of the study, the design was presented to the University of Washington’s Internal Review Board and deemed exempt from IRB review (see Appendix A). Inclusion criteria included U.S. Allopathic (MD) schools given their consistent reporting requirements for enrollment and matriculation of students to the AAMC as well as willingness to participate. Exclusion criteria included non-U.S. medical schools given cultural and other differences regarding admission criteria and selection of matriculates and Osteopathic (DO) schools for the reason above. Eight schools participated with

97 surveys completed. Figure 1 provides an overview of the medical school participation and survey generation from this process.

Figure 1

Medical School Enrollment and Survey Participation



1.6 REALM 1: MEDICAL SCHOOLS

Given the nature of this study, which employs both qualitative and quantitative methods, the absolute number of medical schools needed to sample or surveys collected was estimated. A goal was set to obtain surveys from between 10-20% of U.S. Allopathic medical schools. Specifically, the intent was to obtain participation of 20 schools with a minimum of 10 surveys attained from each school divided between student and faculty/staff respondents.

A survey was designed utilizing the online survey platform “SurveyMonkey,” which provides readily accessible surveys via the internet and is optimized for use on a smart phone. It was also chosen to allow for the option to de-identify participants through the ability to decline collection of IP addresses and ensure anonymity. A mix of questions to allow for descriptive statistic generation of the survey participants and their opinions regarding areas related to the research aims was generated. One open-ended question was also provided to allow for comments on opinions regarding any ethical concerns with pre-medical students participating in STMMs. Appendix B provides a copy of the survey questions.

Purposive sampling was employed utilizing a randomized method of school selection, which allowed for schools with higher enrollment to have a greater chance of being selected. All U.S. Allopathic schools were listed in order from lowest to highest enrollment within an excel document. A column with the cumulative enrollment was then created. The cumulative enrollment total for all schools was then divided by the number of schools to be sampled (initially this was 20) to create a cluster interval (in this case the interval was 1112). Then a random number generator to obtain the first selection was obtained using the serial number on a dollar bill. Once the first school on the list with an enrollment equal to the random number generated was selected, subsequent schools were selected by adding the cluster interval of 1112 to the cumulative enrollment column number associated with the previous school selected. This was repeated until 20 schools were selected. An invitation to participate in the research study was sent to the Dean of each of the selected schools (or subsequently to a school representative identified by the Dean as applicable). The majority of these schools did not respond to inquiries or declined to participate such that the process was repeated until a total of 74 schools were randomly chosen to receive the survey invites. The most common reason schools declined to

participate was a concern for “survey fatigue” of the students. Figure 1 provides an overview of the sampling process resulting in the participation of eight medical schools and 97 surveys obtained for analysis.

The quantitative data obtained from the survey was uploaded as a csv file into the statistical program R for data cleaning and analysis. Descriptive statistics were collected and comparative evaluations performed using chi-square and one-way ANOVA testing. Four sets of analysis were performed. The first analysis set was designed to find out more about opinions on whether an applicant could get accepted into medical school without having prior clinical experience. The second analysis set examined the levels of difficulties students had with attaining prior clinical experience. The third analysis set focused on the value respondents placed on having prior clinical experience compared to other application components. Finally, the fourth analysis set examined opinions about STMM participation by pre-medical students and the opinions of whether participation would improve an applicant’s chances of acceptance at the medical school.

For the eight participating Allopathic medical schools in the study, a web page query was performed to determine whether the school listed having prior clinical experience on their admission requirements website. The site was evaluated for either having it explicitly stated as a requirement, having it as an implicit, having an implied requirement through presence of appropriate verbiage, or not having any requirement.

1.7 REALM 2: STMMs

A saturation sampling method was utilized to find the top 20 web sites advertising available STMMs to volunteers. The search engine Google was used to initially perform the searches over the course of three dates using three different search phrases. Google was chosen

as the primary search engine due to the fact that it commands the largest market share and manages more mobile traffic than any other search engine within the United States. To ensure that students searching for clinical experiences would also likely use Google, the survey included a question regarding the search engine used for this purpose, if any. Given that Google also tracks user preferences and will create search output based on these preferences, the search was repeated on a search engine which does not do this (DuckDuckGo). The top twenty sites from these searches were selected for analysis.

A qualitative code book was generated via deductive and inductive code generation. Deductive codes were generated utilizing terms suggestive of a connection with medical school admission requirements. For example, a code was created via deduction called “application enhancement” where there was mention that participation in the STMM would enable the volunteer to improve his or her application for further schooling. Inductive codes were generated during the coding process as repeated elements presented themselves. For example, it was found that pictures of volunteers dressed like medical professions (e.g. wearing scrubs or a stethoscope) were common, and as such a code for this was developed. The code book is available in Appendix C.

A “first click” approach was used to obtain the material for qualitative coding. That is, the first opening of the web site via clicking on the sites main link was used to obtain the material for coding, which was downloaded into the coding software program, Atlas-ti. Embedded links within the web sites were not subsequently clicked to generate further coding material. The code book was used to apply codes. Representative quotes were also collected for codes. The codes obtained as well as representative quotes were categorized into themes.

RESULTS

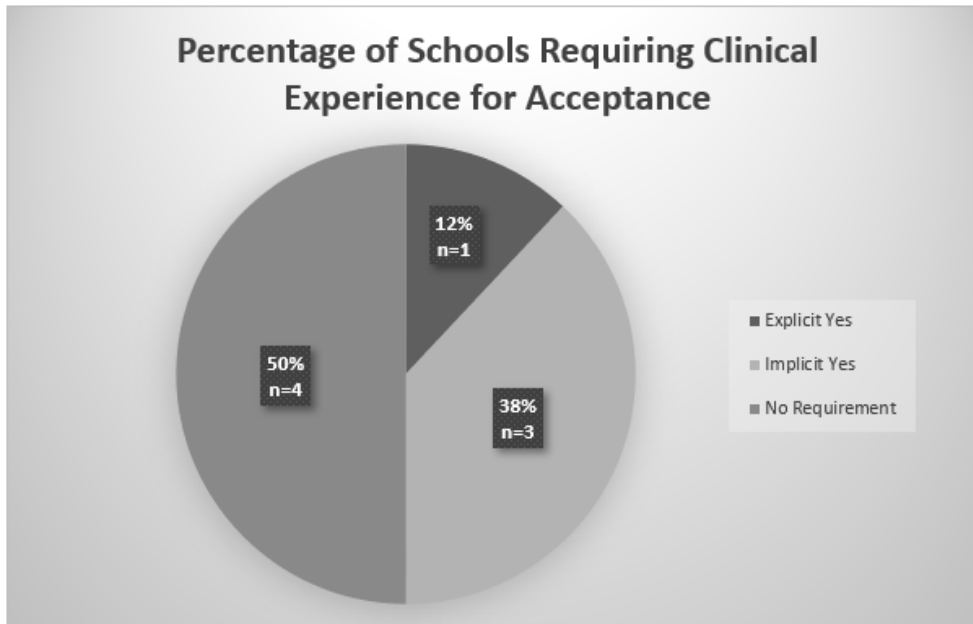
Some Eight schools participated with 97 surveys completed. The demographic information for the survey respondents is available in Table 1. Web site searches of the Admission Requirement web pages for the eight participating schools were analyzed for whether they stated a requirement for having prior clinical experience as follows: 50% no indication, 38% implicit requirement, and 12% explicit requirement. This is shown in Figure. 2.

Table 1. Survey Respondent Demographics	
Demographic (All)	All Respondents (N = 97)
	No. (%)*
School Affiliation Type	
State	62 (64%)
Private	35 (36%)
School Affiliation Status	
Student	44 (45%)
Faculty/Staff	53 (55%)
Demographic (Student)	Student Respondents (N = 44)
	No. (%)*
Age	
18-24	11 (25%)
25-34	31 (70%)
35+	0 (0%)
Gender	
Female	26 (59%)
Male	15 (34%)
Non-binary	0 (0%)
Other	1 (2%)
Race	
White or Caucasian	29 (66%)
Black or African American	3 (7%)
Hispanic or Latino	1 (2%)
Asian or Asian American	6 (14%)
American Indian or Alaska Native	0 (0%)
Native Hawaiian or Pacific Islander	0 (0%)
Other	1 (2%)
Unknown	0 (0%)
Prefer not to answer	2 (5%)
Ethnicity	
Hispanic	2 (5%)
Non-Hispanic	39 (89%)
Unknown	0 (0%)
Prefer not to answer	2 (5%)
Demographic (Faculty/Staff)	Faculty Respondents (N = 53)
	No. (%)*
Age	
18-24	2 (4%)
25-34	3 (6%)
35-44	17 (32%)
45-54	15 (28%)
55-64	8 (15%)
65+	5 (9%)
Gender	
Female	31 (58%)
Male	19 (36%)
Non-binary	0 (0%)
Other	0 (0%)
Race	
White or Caucasian	33 (62%)
Black or African American	6 (11%)
Hispanic or Latino	3 (6%)
Asian or Asian American	4 (8%)
American Indian or Alaska Native	0 (0%)
Native Hawaiian or Pacific Islander	0 (0%)
Other	2 (4%)
Unknown	0 (0%)
Prefer not to answer	2 (4%)
Ethnicity	
Hispanic	7 (13%)
Non-Hispanic	42 (79%)
Unknown	0 (0%)
Prefer not to answer	2 (4%)

*Percentages may not total 100% due to a combination of rounding as well as the potential for some respondents to skip a demographic question. Percentages are in relation to the N of the section within which the information is provided.

Figure 2

Medical School Admission Web Page Query



Sixty percent of respondents who reviewed applications or were involved in interviewing students felt that “previous clinical experience” was either “very important” (37%) or “extremely important” (23%), and 51% felt a student would not be accepted in the institution without prior clinical experience as shown in Figure 3. The odds of “No” (one cannot get accepted without prior clinical experience) among respondents who were application reviewers or interviewed patients was organized by school type, school affiliation, gender, and race. A summary of these is available in Figure 4. The odds of saying “No” was higher if the respondent was from a private medical school (2.5) compared to a state medical school (0.86), if the respondent was a student (1.33) compared to faculty/staff respondents (1.00), if the respondent was female (1.38) compared to male (0.78), and if the respondent’s race was white (1.30) compared to minority (0.71). However, these results not statistically significant on chi-square analysis.

Figure 3

Opinions on Whether Acceptance is Possible Without Prior Clinical Experience

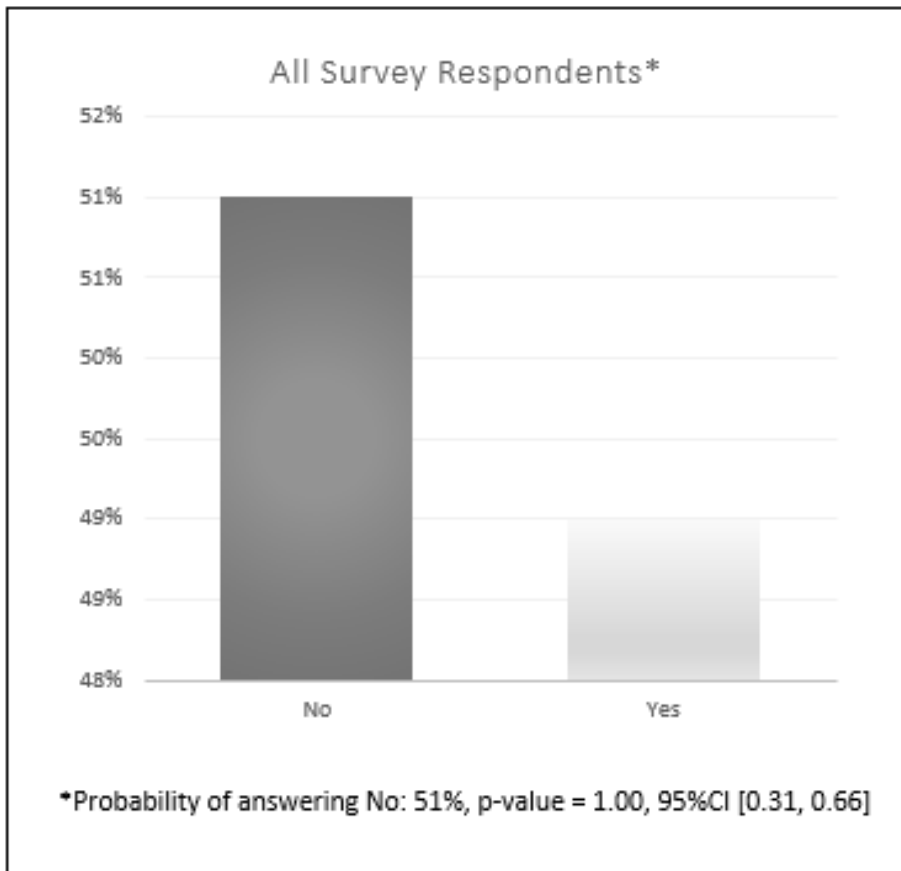
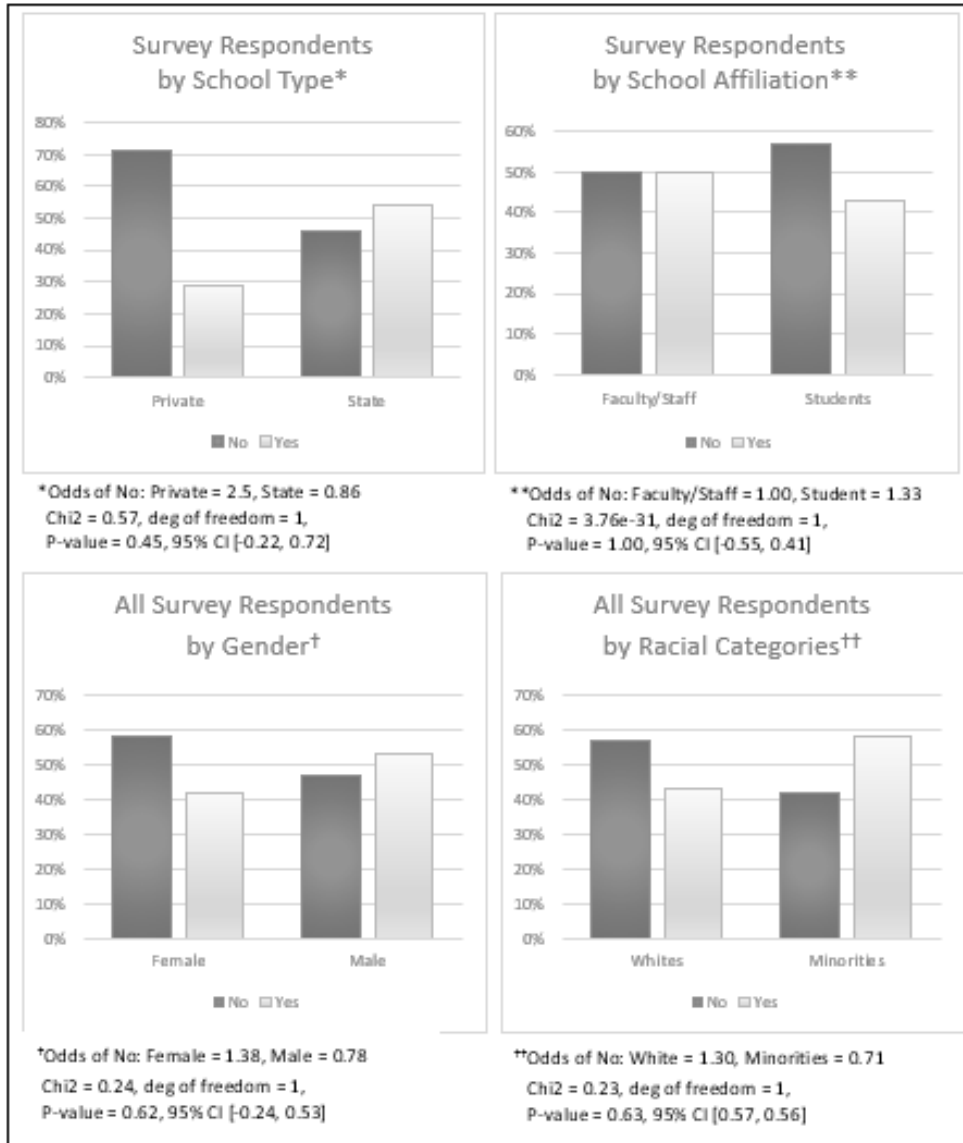


Figure 4

Comparative Odds of “No” on Whether Acceptance is Possible Without Prior Clinical Experience



The majority of student respondents (69%) had worked in a clinical field for pay prior to applying to medical school as shown in Figure 5. Analysis of difficulty in attaining clinical experience prior to applying to medical school between groups of student respondents was analyzed using One-Way ANOVA and is summarized in Figure 6. When comparing categories of difficulty in getting clinical experience by combined parental income, student race, or history

of prior clinical work experience, did not show any statistical difference in the difficulty of getting prior clinical experience. However, there appeared to be a trend towards less difficulty for those who already had prior clinical work experience and variance between students from different combined parental incomes.

Figure 5

Students Who Worked for Pay In a Clinical Field Prior to Applying to Medical School

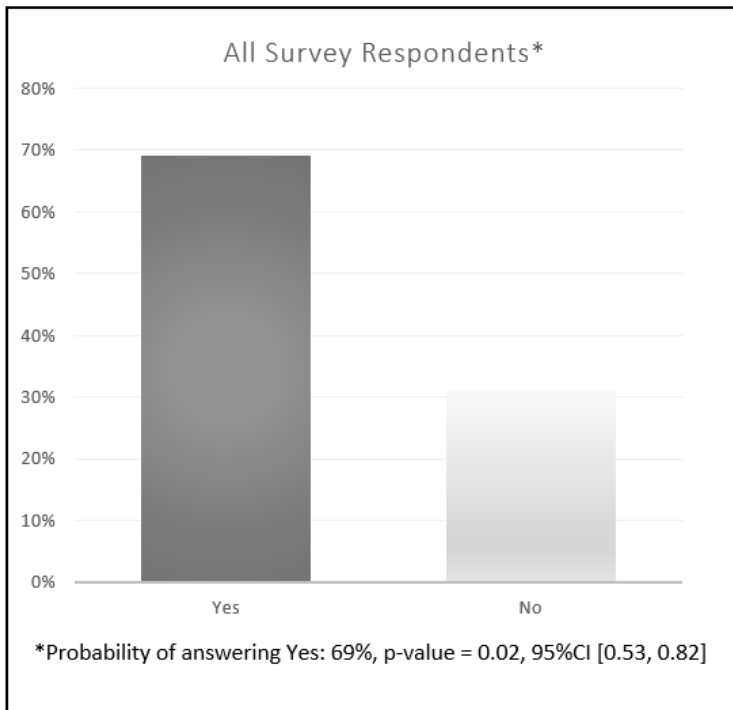
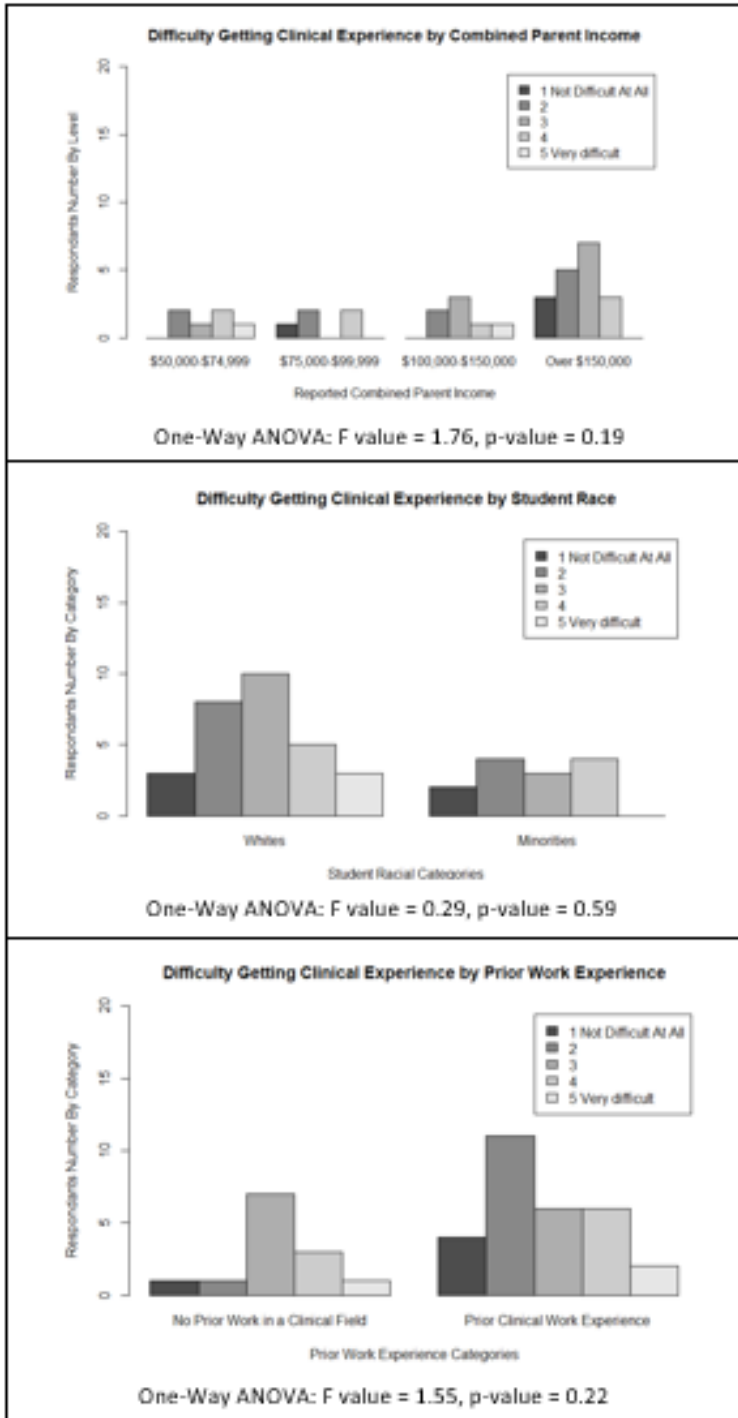


Figure 6

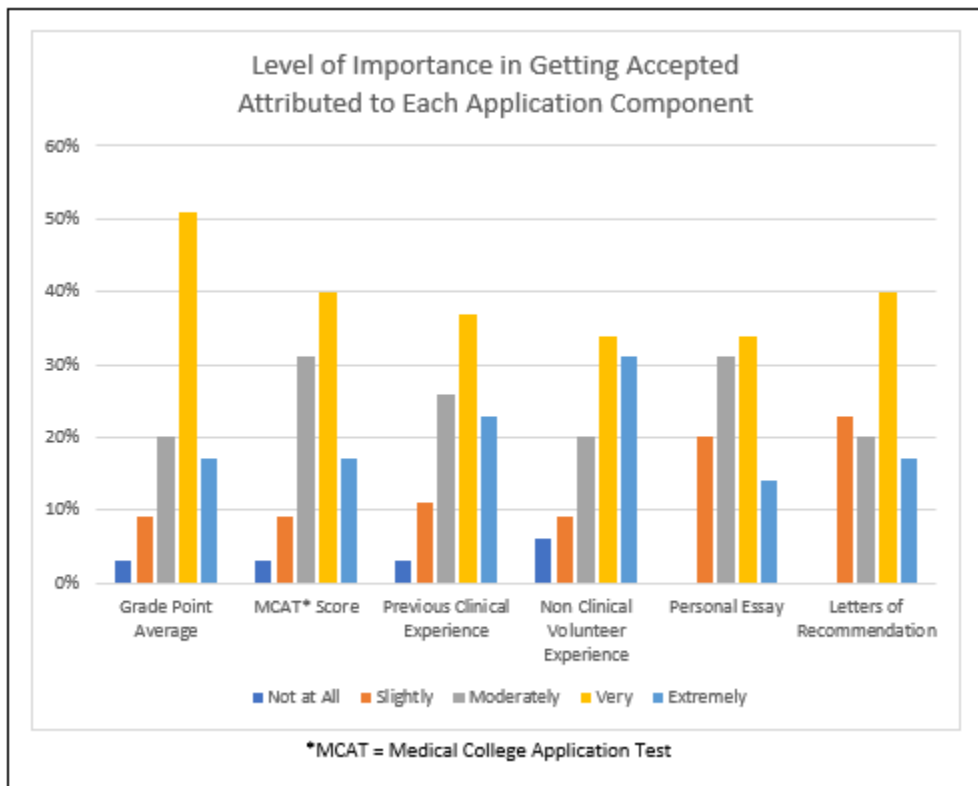
Reported Difficulties by Students in Getting Clinical Experience Prior to Applying to Medical School



Respondents' opinions on the importance of various application components relative to getting accepted into medical school were obtained and are summarized in Figure 7. To clarify, respondents did not rank the components comparatively to each other, but rather by the degree to which the component was important to a student getting accepted. The majority of responses by percentage for each component as rated by applicants as "Very" important as follows: Grade Point Average: 51%, Medical College Admission Test (MCAT) score: 40%, Previous Clinical Experience: 37%, Non-Clinical Volunteer Experience: 34%, Personal Essay: 34%, Letters of Recommendation: 40%.

Figure 7

Opinions Regarding Various Medical School Application Components



Ethical concerns with pre-medical students participating in STMM's were reported in 64% of all respondents. However, more than 70% of those reviewing applications or involved in

interviewing students felt STMM participation would at least moderately increase a student's chance of acceptance as seen in Figure 8. Examples of representative quotes from survey participants indicating negative attitudes towards pre-medical students participating in STMMs were as follows.

Student example 1:

"It's voluntourism in my opinion...a faculty (member said)...if I reapplied I would need to consider doing a medical mission trip to show commitment to the underserved."

Student example 2:

"There could be issues with cultural legacies (of) imperialism...(they) may have good intentions, but overall are not really helpful."

Faculty/Staff example 1:

"Typical 1-2 week short-term mission trip(s) by wealthy Americans to a poor, low resource community in another country clearly has the potential of causing more harm...than any measurable good."

Examples of representative quotes from survey participants indicating positive attitudes towards pre-medical students participating in STMMs were as follows.

Student example 1:

"I do feel that (it) is a good experience for medical students to have an introduction to healthcare in other countries, but it has to be done respectfully...(and with) the needs of the community in mind."

Student example 2:

“I feel it depends...on the intent of the organization. A student going overseas to attain clinical experience may be unethical if (it) is only to check a box for medical school applications.”

Faculty/Staff example 1:

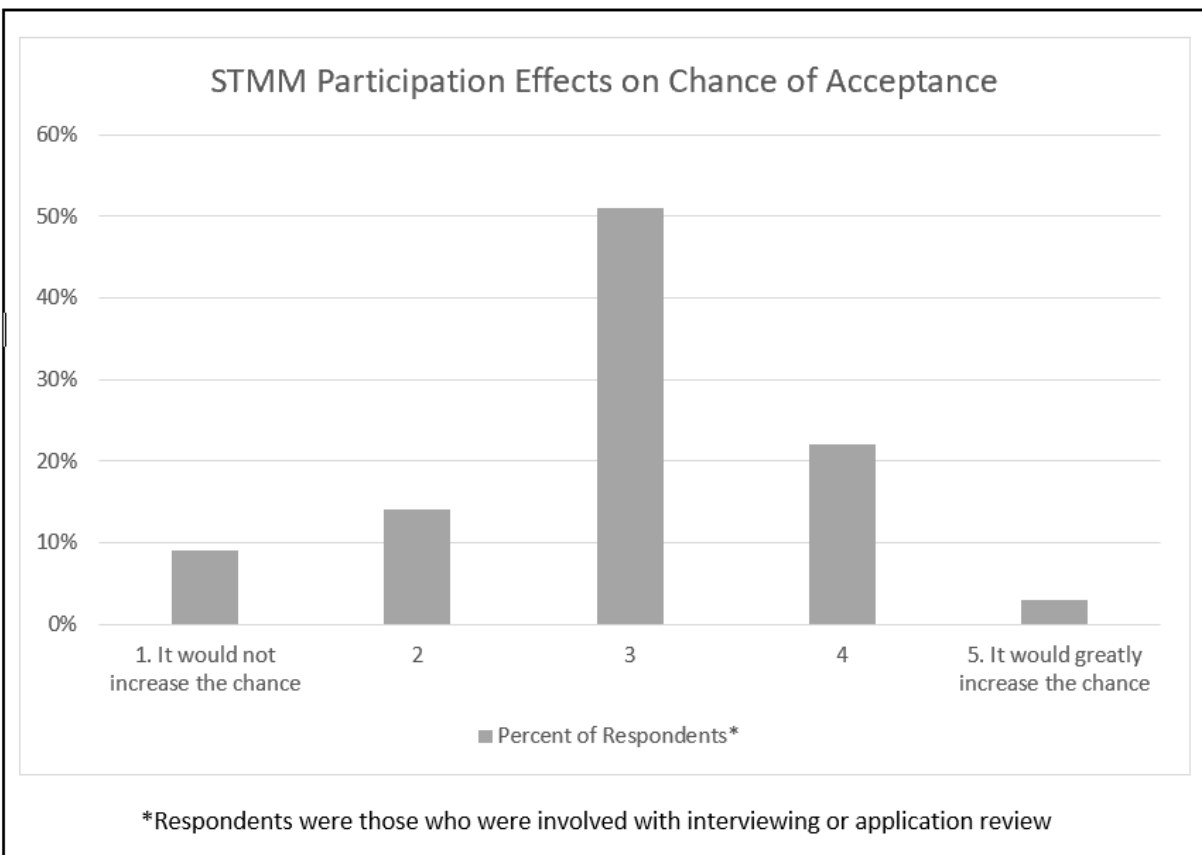
“(They can be done) with limitations...if students are participating...(in) tasks that people with a high school education can perform.”

Faculty/Staff example 2:

“I have no trouble in pre-med students doing medical missions overseas, but they should not do activities outside of their appropriate scope.”

Figure 8

Opinions on STMM Participation and the Chance of Acceptance into Medical School



Coding of STMM websites using the code book generated the top 10 codes, which were applied based on the number of times they were used as shown in Figure 9. Qualitative analysis of STMM websites showed the top nine themes included 1. targeting to students, 2. promoting the idea of helping others, 3. “future projection” of students in the field of medicine (images of volunteers dressed like, or performing tasks associated with, medical professionals), 4. tourism, 5. offering flexibility with relation to time, 6. offering self-improvement (career, application, resume-building), 7. cost is affordable, 8. coordination of logistics is handled by the organization, and 9. safety is assured. This is summarized in Table 2. Representative quotes are as follows.

Supporting the theme of offering self-improvement:

“We can help you get the clinical experience you need to pursue a medical degree or further your career.”

Supporting the theme of flexibility with relation to time:

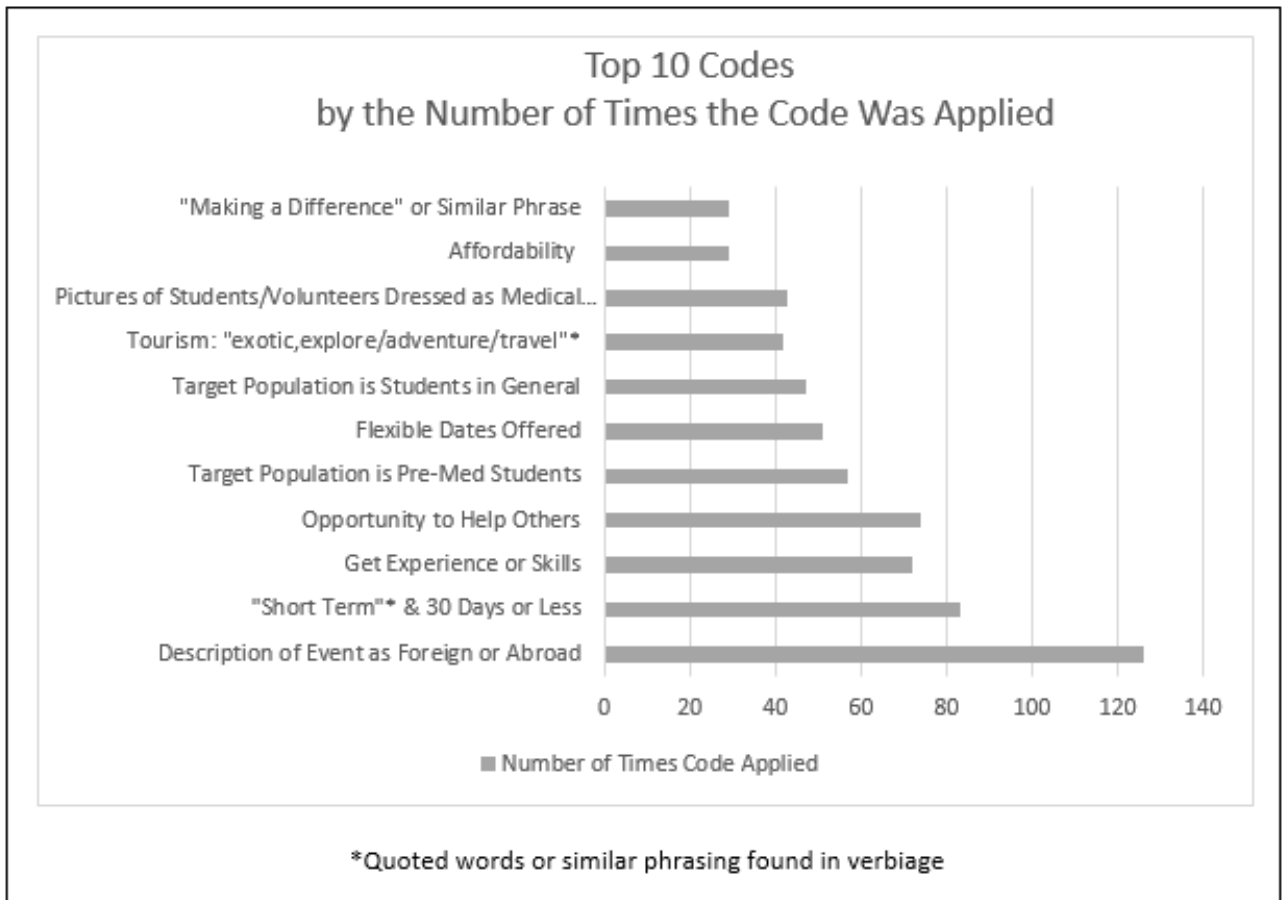
“Medical mission trips are your perfect chance to support a medical project abroad when you don’t have much time on your hands...ideal for students.”

Supporting the themes of tourism, flexibility with regards to time, and affordability:

“These short-term volunteer trips don’t sacrifice any aspect of the experience—impact, fun, or hard work...if this sounds awesome to you, but you don’t have the time (or money) to spend...(these programs will help)...get that volunteering fix.”

Figure 9

The Top 10 Codes Applied by Frequency to All Sampled STMM Web Sites



# (by prevalence)	Key Themes
1	Students, particularly pre-medical students, are a target audience
2	Promotion of the ability to “help others” or “make a difference”
3	There is a “future projection of self” with pictures of volunteers dressed like medical professionals, or performing medical tasks
4	Tourism is provided; the ability to travel, explore, or visit exotic lands is offered or implied through pictures
5	Flexibility is advertised with regards to the timing and length of participation
6	Self-improvement is offered either through skill acquisition, career/resume building, or application enhancement for further education
7	Cost for participation is advertised as affordable or flexible payment based on length of participation
8	Coordination of travel, room, board, and activities is offered by the organization
9	Safety is promoted by providing “vetted” areas to participate, or indirectly through the provision of “24 hour,” or continuous access to, the organization

DISCUSSION

As noted in the background, medical schools either require or prefer applicants to have medical experience despite that typical pre-medical students are challenged with coordinating such experiences, particularly shadowing given increasing regulations about patient privacy with regards to such experiences.⁶ This requirement or preference for having prior clinical experience in applicants was supported by the research findings and was irrespective of whether the respondent had an affiliation with a school which either explicitly or implicitly stated having prior clinical experience as a requirement for prospective applicants. Related to this requirement was the fact that most applicants felt it would not be possible to get accepted to medical school without prior clinical experience and that the majority of student respondents (who by the nature of the survey distribution have successfully matriculated as student) actually worked in a clinical

field prior to applying to medical school. Furthermore, the expectation of applicants to have prior clinical experience is strengthened by the fact that most respondents who either review applications or interview patients felt, as with every application component, that having prior clinical experience was “Very” important with regards to getting accepted to medical school. Participation in STMM’s was felt to at least moderately increase the chance of acceptance as well. This all supports the phenomenon that medical schools do indeed expect applicants to have prior clinical experience to be accepted into to medical school, regardless of their stated requirements, and that STMM participation would increase the chance of acceptance more than it would not. This finding was present despite that most respondents felt there were ethical concerns with pre-medical students participating in STMM’s (64%). Representative quotes regarding ethical concerns of STMM participation often noted caveats that participation would be acceptable if pre-medical students participated within their scope. However, one could argue that students without medical training may not know what is within their scope, and therefore cannot be reasonably expected to participate in an STMM, nor any other clinical experience accordingly, without appropriate guidance and supervision.

The themes generated through coding as well as representative quotes supporting these themes collected from the top 20 STMM websites online appear to mirror the expectations of medical schools for attaining prior clinical experience, the challenges students have in attaining this experience in the literature, and the needs of students. These online organizations market an “affordable” product targeted primarily to pre-medical students. The product is one which meets the overall driving need of attaining prior clinical experience, but also speaks to the emotional needs of the target audience in multiple ways. Pictures of volunteers allow pre-medical students

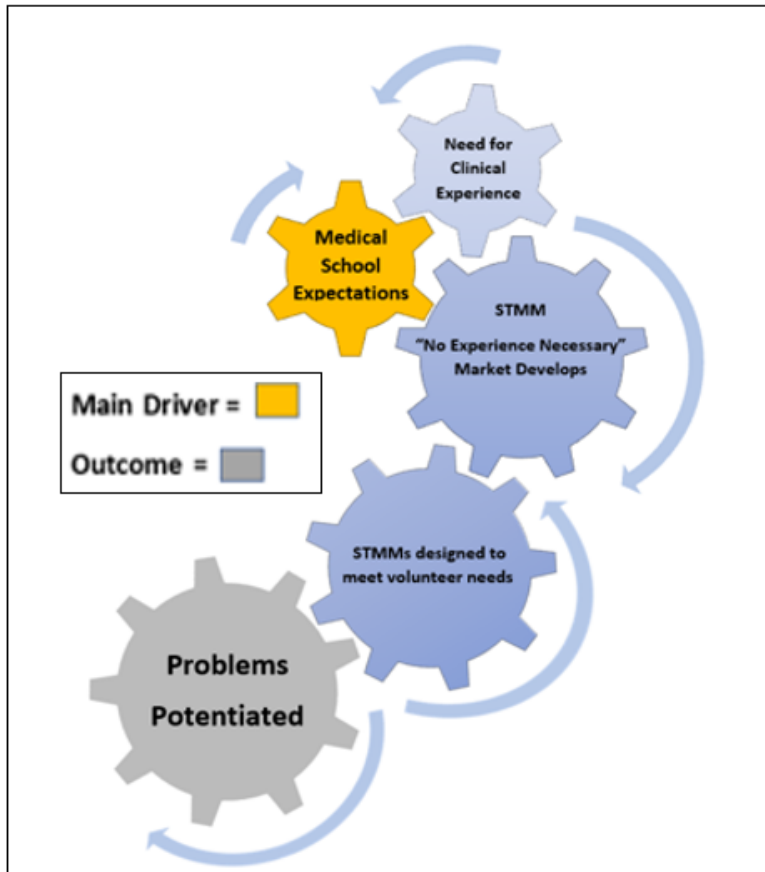
to visualize themselves as future doctors. Fears of the experience being expensive, difficult to coordinate, or unsafe are alleviated.

1.8 CONCEPTUAL FRAMEWORK

A conceptual framework was developed to explain the patterns seen from the results of the study utilizing a proposed pathway, which links the potential driver of medical school admission expectations for clinical experience of applicants to the outcome of the negative consequences of STMMs through the increased demand for clinical experience and the subsequent development of STMMs marketing to students to meet this demand. The overall image is that of gears in a machine, which serve to drive further actions of other gears in a fashion where what may be felt to be a small driver (medical school admission criteria), represented by a small gear, ultimately potentiates the development of the larger issue of negative consequences produced by STMMs, represented by a large gear. This conceptual framework can be seen in Figure 10 below.

Figure 10

Conceptual Framework: Medical School Expectations for Prior Clinical Experience as a Driver of the STMM Market



1.9 STUDY LIMITATIONS

Multiple limitations exist within this study. The overall research design is one which lends itself better to an exploration of trends and patterns, rather than attributing causality with any degree of certainty. Although the survey provided the opportunity to incorporate quantitative data analysis, which showed some trends, the results were suggestive, and not statistically significant. This was likely due to the limited sample size of participating schools and surveys completed. With regards to the coding, this was performed independently by one coder as part of

that coder's thesis research. Given this, no interrater reliability has been obtained. Finally, generalizability to all U.S. medical schools cannot be achieved given that only Allopathic medical schools were sampled.

CONCLUSION

Medical school expectations for prior clinical experience are not explicitly stated in most cases, yet opinions exist that having prior clinical experience is an important part of U.S. Allopathic medical school applications with regards to increasing the chance of acceptance. Survey results showed that despite an awareness of ethical problems with pre-med students participating in STMMs, their participation was felt by most respondents who reviewed applications or interviewed students to increase the chance of acceptance to medical school at least moderately. Marketing of STMMs to students is growing in conjunction with the increasing competition for getting into medical school. The research is suggestive that a probable driver of STMM growth and marketing to students are medical school expectations for prior clinical experience in applicants.

Given the findings with this research, it is recommended that the Association of American Medical Colleges (AAMC) provide clear guidance on whether having prior clinical experience should remain an expectation of medical schools for applicants, and if so, what types of experiences are appropriate. Medical schools ideally should clarify any requirement for prior clinical experience (especially if there is no requirement), and ensure those responsible for interviewing applicants or reviewing applications have clear guidance on evaluating prior clinical experience in a fashion which matches the school's stated requirement. Given the multiple application components by which a medical school can evaluate an applicant coupled

with the fact that applicants without medical training may not understand what a “scope of practice” is at that stage of education, medical schools should consider eliminating the need for having prior clinical experience. Finally, the primary purpose for any STMM should not be to make money for the organization, train students, or provide travel & adventure to participants. Participation in such organizations can potentiate the known problems associated with STMMs and ultimately cause harm to recipients.

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APPENDIX A: IRB EXEMPTION MEMO



UNIVERSITY of WASHINGTON
HUMAN SUBJECTS DIVISION

DETERMINATION OF EXEMPT STATUS

March 3, 2022

Dear Erika Petrik:

On 3/3/2022, the University of Washington Human Subjects Division (HSD) reviewed the following application:

Type of Review:	Initial Study
Title of Study:	Medical School Admission Requirements and the Marketing of Short Term Medical Missions
Investigator:	Erika Petrik
IRB ID:	STUDY00015169
Funding:	None

Exempt Status

HSD determined that your proposed activity is human subjects research that qualifies for exempt status (Category 2). This determination may or may not be based on the Limited IRB Review process.

- COVID NOTE: See the [HSD website](#) for the latest COVID guidelines for conducting human subjects research.
- This determination is valid for the duration of your research.
- This means that your research is exempt from the federal human subjects regulations, including the requirement for IRB approval and continuing review.
- **Depending on the nature of your study, you may need to obtain other approvals or permissions to conduct your research. For example, you might need to apply for access to data or specimens (e.g., to obtain UW student data). Or, you might need to obtain permission from facilities managers to approach possible subjects or conduct research procedures in the facilities (e.g., Seattle School District; the Harborview Emergency Department).**
- HSD does not make determinations on behalf of other institutions. If other institutions are involved in the research, they may need to make their own determination or they may decide to be guided by our determination.

If you consider changes to the activities in the future and know that the changes will require IRB review (or you are not certain), you may request a review or new determination by submitting a Modification to this application. For information about what changes require a Modification, refer to the [GUIDANCE: Exempt Research](#).

Thank you for your commitment to ethical and responsible research. We wish you great success!

Sincerely,

Theresa Nalulai-Cecchini, IRB Administrator
206.543.3494 | tnalulai@uw.edu

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main 206.543.0098 fax 206.543.9218 hsdinfo@u.washington.edu www.washington.edu/research/hsd
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APPENDIX B: SURVEY QUESTIONS

Medical School Admission Expectations for Clinical Experience in Applicants

This survey will take approximately 5 minutes.

What Medical School are you currently affiliated/connected with at the time of this survey?

Is this a State or Private School?

- State
 Private

Please choose the affiliations you have with this school.

- I am currently a medical student here (with or without a paid position at the school)
 I am currently a faculty or staff member at this school who is not a medical student
 None of the above

Medical School Admission Expectations for Clinical Experience in Applicants

What is your age?

- Under 18
- 18-24
- 25-34
- 35-44
- 45-54
- 55-64
- 65+

What is your gender?

- Female
- Male
- Non-Binary
- Other

What is your race?

- White or Caucasian
- Black or African American
- Hispanic or Latino
- Asian or Asian American
- American Indian or Alaska Native
- Native Hawaiian or other Pacific Islander
- Other
- Unknown
- Prefer Not to Answer

What is your ethnicity? (Please select all that apply.)

- Hispanic
- Non-Hispanic
- Unknown
- Prefer not to answer

What is your personal yearly gross income level?

- Under \$15,000
- Between \$15,000 and \$29,999
- Between \$30,000 and \$49,999
- Between \$50,000 and \$74,999
- Between \$75,000 and \$99,999
- Between \$100,000 and \$150,000
- Over \$150,000
- I prefer not to answer

What are your parents combined yearly gross income?

- | | |
|--|--|
| <input type="checkbox"/> Under \$15,000 | <input type="checkbox"/> Between \$75,000 and \$99,999 |
| <input type="checkbox"/> Between \$15,000 and \$29,999 | <input type="checkbox"/> Between \$100,000 and \$150,000 |
| <input type="checkbox"/> Between \$30,000 and \$49,999 | <input type="checkbox"/> Over \$150,000 |
| <input type="checkbox"/> Between \$50,000 and \$74,999 | <input type="checkbox"/> I prefer not to answer |

How did you, or do you plan to, fund your training at this medical school?

- | | |
|-------------------------------------|--|
| <input type="radio"/> Scholarship | <input type="radio"/> Personal or family monetary contribution |
| <input type="radio"/> Student loans | <input type="radio"/> A combination of any of the above |
| <input type="radio"/> Grants | |

Prior to applying to medical school did you work in a clinical field which provided you experience to add to your application?

- Yes
 No

How difficult was it for you to get clinical experience prior to applying to medical school?

1 Not Difficult At All	2	3	4	5 Very difficult
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

In your opinion, did the COVID-19 pandemic make it more challenging for you to get clinical experience prior to applying to medical school?

- Yes
 No
 Non-applicable to me

If you searched for clinical experience opportunities online (using the internet), which browser did you use?

- | | |
|---|---|
| <input type="checkbox"/> Google | <input type="checkbox"/> Ask |
| <input type="checkbox"/> Yahoo | <input type="checkbox"/> AOL |
| <input type="checkbox"/> Bing | <input type="checkbox"/> I did not use an internet search to find clinical experience opportunities prior to applying to med school |
| <input type="checkbox"/> Duck Duck Go | |
| <input type="checkbox"/> Other (please specify) | |

How likely is/was it that you would pay to be part of an overseas short-term (less than 30 day) medical mission to enhance your application to this medical school if you could not find clinical experience locally where you resided prior to applying?

1 Not at all likely

2

3

4

2 Very likely



Have you ever participated in a short-term (30 days or less) medical mission overseas prior to applying to medical school?

Yes

No

Are you currently, or have you previously been, involved in **interviewing or reviewing applications** of students who have applied to attend this medical school?

Yes

No

Medical School Admission Expectations for Clinical Experience in Applicants

What is your age?

- Under 18
- 18-24
- 25-34
- 35-44
- 45-54
- 55-64
- 65+

What is your gender?

- Female
- Male
- Non-Binary
- Other

What is your race?

- White or Caucasian
- Black or African American
- Hispanic or Latino
- Asian or Asian American
- American Indian or Alaska Native
- Native Hawaiian or other Pacific Islander
- Other
- Unknown
- Prefer Not to Answer

What is your ethnicity? (Please select all that apply.)

- Hispanic
- Non-Hispanic
- Unknown
- Prefer not to answer

Are you currently, or have you previously been, involved in **interviewing or reviewing applications** of students who have applied to attend this medical school?

- Yes
- No

Medical School Admission Expectations for Clinical Experience in Applicants

Please rate the following student application components by how much you think each is important to a student getting accepted into this medical school:

	Not at all important	Slightly important	Moderately important	Very important	Extremely important
Grade point average	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Medical College Admission Test (MCAT) Score	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Previous clinical experience (paid or unpaid)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Non-clinical volunteer experience	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Personal essay	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Letters of recommendation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

To your knowledge, does this medical school have a rubric, standardized process, or system to determine the priority given to certain application components when determining an applicant's qualifications.

- Yes
 No
 I don't know

Please rate the degree to which you feel a student's participation in a short-term (30 day or less) overseas medical mission would contribute to increasing his/her/their chance of getting accepted as a student in this medical school:

1 It would not increase the chance acceptance at all	2	3	4	5 It would greatly increase the chance of acceptance
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

In your opinion, can an applicant get accepted into this medical school without prior clinical experience?

- Yes
 No

Medical School Admission Expectations for Clinical Experience in Applicants

Last Question: Do you feel there are any ethical concerns with pre-med students participating in the care of patients in short term (30 day or less) medical missions overseas?

Yes

No

Please comment on why you answered Yes or No

APPENDIX C: CODE BOOK

CODE	COMMENT/DESCRIPTION
Application Benefit: Application Improvement	A statement regarding a benefit of the volunteer experience or mission as having the ability to improve an application for medical school
Application Benefit: Letter of Recommendation	A statement regarding the ability for the participant to get a Letter of Recommendation generated by participating
Application Benefit: Resume or Career Building	Terms describing a benefit of participating as building or enhancing a person's career or resume
Benefit: School Credits	School credit can be obtained by participating in the STMM
Cost: Affordability	Mention of the cost of the experiencing being affordable or listed as less than \$1000 to participate
Cost: Payment Facilitation	Mention of flexibility in terms of paying for the experience (e.g. paying in installments) or that the experience can be subsidized through scholarships or fundraising
COVID	Mention of the experience being available during the COVID-19 Pandemic
Emotional: Positive Adjectives Describing the Volunteer	May include words such as caring, kind, compassionate, empathetic, etc.
Emotional: Helping Others	A phrase or statement about the experience having the ability to help others
Emotional: Making a Difference	A comment or statement about making a difference, change for the better, or similar phrase
Emotional: Patient/Recipient Gratitude	A comment or statement about appreciation by the patient or recipient for the volunteer's participation
Emotional: Picture of Volunteer Holding a Patient/Recipient	Any picture of a volunteer holding or hugging a patient. May also be a picture of shaking a patient's hand(s).
Emotional: Picture of Volunteer Smiling	Any picture of a student volunteer smiling or otherwise expressing happiness or joy.
Emotional: Picture of Volunteer Dressed Like a Medical or Healthcare Professionals	Pictures of volunteers wearing any one or more of the following: stethoscope, white coat, scrubs, surgical cap, gloves, surgical mask
Emotional: Sense of Purpose or Meaning	Verbiage stating the volunteer will obtain a sense of meaning or purpose by participating. May state that the experience is life changing or life altering.
Foreign/Tourism: "Exotic/Explore/Adventure/Travel"	Any use of the words "exotic," "explore," "adventure," or "travel." May involve a picture of a volunteer in a foreign land or setting (in such cases must not be in the context of taking care of a patient or be mistaken as a healthcare activity)

CODE	COMMENT/DESCRIPTION
Foreign/Tourism: “Foreign” or “Abroad”	Use of words to delineate the activity as taking place outside of the United States. May involve use of the following words: “foreign,” “abroad,” “overseas,” “international”
Foreign/Tourism: A Picture of a Volunteer Engaging in a Tourism Activity or of Tourism itself	A picture involving the volunteer engaged in an activity associated with tourism (e.g. hiking, riding a camel, holding a monkey, etc) which could not be confused with providing healthcare. The picture can be one to promote tourism (e.g. beach scene, mountain scene, wildlife, national monuments or sites, etc.)
Organization Coordinates Needs	Statements involving mention of coordination of logistics such as transportation, lodging, meals, etc.
Other: Safety Assurance	Comments on the safety of participation or providing a safe environment while participating. May state the volunteer has access to the organization 24/7 or that the site has been vetted for safety or similar terminology.
Religious	Mention of the experience or organization having a church or religious affiliation.
Request for Donation	
Skill Acquisition: “Hands On”	Use of the words “hands on”
Skill Acquisition: To get experience, skills, learn	Any mention of the volunteer experience providing the opportunity to gain experience, skills, or learn. Includes shadowing of medical professionals to learn.
Target Population: Medical Student	Offerings to Medical Students
Target Population: No Experience Required	Mention of the fact that no experience is required for participation. May also say “limited experience” required or similar phrase to convey that experience is not necessary or may be limited in volunteers.
Target Population: Nurses	Offerings to Nurses.
Target Population: Nursing Students	Offerings to Nursing students.
Target Population: Pre-Med or Pre-Medical Student	Offerings to Pre-medical students.
Target Population: Pre-Nursing	Offerings to Pre-nursing students.
Target Population: Students (General)	Offerings to students in general.
Time: “Short Term” or 30 Days or Less	Use of the actual words that a mission is “short term” or statement that the experience is available for a duration of 30 days or less.
Time: Convenient	A description or comment about the convenience of the experience with relation to time.
Time: Flexible Dates	Mention of the volunteer activity having flexible dates.
Time: Gap Year	Statement about the experience being appropriate for a gap year.

CODE	COMMENT/DESCRIPTION
Time: Summer/Breaks/Year-Round	Statements about availability of opportunities during the summer, during school breaks, or being offered year-round.
Time: Working Under Supervision	Reassurance of, or words stating, that the volunteer will be supervised or may say “direct supervision.”