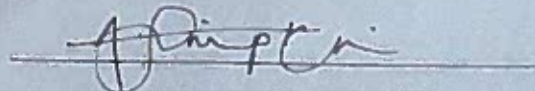


This Thesis, A Global Health Curriculum at KSU Medical College- A Need's Assessment, presented by Sarah Mussaid Al Eshaiwi and Submitted to the Faculty of The Harvard Medical School in Partial Fulfillment of the Requirements for the Master of Medical Sciences in Medical Education has been read and approved by:



Arabella Simplkin, MD, MMSc



Clyde Lanford Smith, MD, MPH



Dupe Akinola, MD

Date: November 27, 2017

A GLOBAL HEALTH CURRICULUM AT KING SAUD UNIVERSITY
MEDICAL COLLEGE- A NEEDS ASSESSMENT

DR. SARAH MUSSAID AL ESHAIWI

A Thesis Submitted to the Faculty of
The Harvard Medical School
in Partial Fulfillment of the Requirements
for the Degree of Master of Medical Sciences in Medical Education
Harvard University
Boston, Massachusetts.
November, 2017

A Global Health Curriculum at King Saud University Medical College - A Needs Assessment

Abstract

Background: Global Health is an emerging field in medicine that has been introduced in many medical colleges across the world but still does not exist in Saudi Arabia's undergraduate medical education curricula.

Objective: To carry out a needs assessment that evaluates students' and faculty's perceptions about introducing a Global Health Curriculum at King Saud Medical College in Riyadh, Saudi Arabia.

Methods: This paper is a cross-sectional mixed methods study that took place at King Saud University and involved a student survey (n=600) and 10 faculty interviews. A 17 item survey was emailed to 4th and 5th year medical students. Faculty interviews, consisting of 4 open-ended questions, were conducted electronically. Faculty members belonged to the Medical Education and Community Medicine departments. The survey results were used to make a connection with the qualitative data.

Results: 253/600 students completed the survey (42% response rate). 83% (210) of the students endorsed the introduction of a Global Health course while 17% (43) said they did not.

Half of the students 51% (129) endorsed the course as an elective, and 32% (81) as a compulsory course. The faculty encouraged the introduction of a global health curriculum, acknowledging its benefits and stating the barriers that need to be overcome.

Conclusion: Students at King Saud Medical College are interested in a Global Health curriculum. By learning from other universities that have preceded us in this field, faculty noted the benefits of such a curriculum and expressed interest in introducing it.

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Chapter 1: Background

1.1 Background

Global Health is an emerging field of medicine that is being introduced in many medical schools in North America and other parts of the world. In an increasingly connected world, knowledge in global health will become a significant component of the medical education process. Global Health is defined as the area of study, research and practice that places a priority on improving health and achieving equity in health for all people worldwide. [1] The field of Global health focuses on enhancing health worldwide and reducing disparities among nations. [2] Thus global health is thought of as a field which highlights and addresses a scope of problems globally, but may focus on domestic health disparities as well as international ones. It also incorporates the training and distribution of the healthcare workforce and embraces both the prevention of disease and clinical care of individuals. [3]

Interest in global health among medical students is increasing. This field has become popular in the last ten years and is drawing media, students and faculty to engage in it. In fact, between the year 1998 and 2008, medical schools in the United States and Canada saw an increase of 270% in the number of students participating in a global health experience. [4]

This rising interest in global health, along with the inevitable globalization of health, has led many medical schools to incorporate global health into their curriculums. In 2010, 37.5% (47 of 128) medical schools in the U.S. and Canada had a global health element in their curricula. [4] In

the last 20 years, North American medical student participation in international electives has doubled to one in five students.[5].

A global health elective serves many purposes. Firstly, it serves to connect and educate students about other healthcare systems in the world. Secondly it serves to teach medical students cross-cultural communication skills, allowing them to become more confident in serving patients of various cultures and economic backgrounds. Thirdly it serves to expose students to different health systems. Lastly, it can provide opportunities and pave the way for medical students to explore careers in primary health and with underserved populations. Moreover, students will have a glimpse of the non-clinical aspect of the field, for those who may wish to pursue non-clinical careers in medicine.

We are not suggesting prolonging undergraduate medical training, rather we are shedding light on topics that need to be added to integrate global health concepts and provide a basis for enhanced medical training. Ideally, global health education would be introduced at the undergraduate level and be further developed during residency. [6] This means focusing on attaining key competencies in global health including work that involves service to marginalized communities in the country within the principles of social equity. In order for medical students to gain the most from their time in medical school, there should be a component of organized service-learning, where community service is integrated with instruction and reflection [7] to broaden their knowledge and encourage social responsibility [8]. Learners who have completed rotations in underserved communities report increased clinical skills and confidence, enhanced

awareness of cost issues, less dependence on technology, and greater empathy and appreciation of cross-cultural communication. [9]

Much of the literature to date has focused on U.S. medical schools and students [5,10,11]; important differences may exist in attitudes and interests between US and Saudi Arabian students. However, no previous studies or literature covering Saudi Arabian students' perceptions towards global health was found.

Despite the international popularity of global health amongst medical schools, it remains a novel field in the medical schools of Saudi Arabia. A search of the literature and contact with faculty at the three most established medical schools in Riyadh, Saudi Arabia (King Saud University, King Abdulaziz University and AlFaisal University) found no existing global health curricula. This study aims to explore the needs of the most prominent medical school in Saudi Arabia, King Saud Medical College, for the introduction of a global health elective, by asking two questions: 1) What are the perceived needs for a Global Health elective amongst 4th and 5th year medical students? and 2) How do senior faculty members feel about introducing a global health elective at King Saud University and why?

Chapter 2: Data and Methods

2.1 Study Design and Methods

This study is a cross-sectional mixed methods study involving both a student survey and faculty interviews. It takes place at King Saud University (College of Medicine) in Riyadh, Saudi Arabia.

Survey and Setting

A 17-item survey (See Appendix) was developed by establishing the goals of the survey and determining what I wanted to learn from the students. This included: 1) Whether the students have heard of Global Health previously; 2) If students have had any international academic experience; 3) If they were interested in taking a Global Health class; 4) If they were interested in a public health career; and lastly 5) The Global Health topics the students were most interested in learning. The survey utilized a combination of forced-choice answers (e.g., yes, no, not sure) and some 5-point Likert scale responses (e.g., strongly agree to strongly disagree), with space provided for comments at the end. The questions also covered students' gender, and class year. The survey was piloted with two nonmedical volunteers using Qualtrics, and was revised and shortened prior to distribution. The survey was distributed via email to all 4th and 5th year medical students at King Saud University (approximately 600 females and males) using the survey-sharing website Qualtrics. Only fourth and fifth year students were surveyed to ensure that the students were in their clinical rotation years.

Students were informed that this was an anonymous study and none of their information would be revealed to the primary researcher. Two IRB approvals were obtained for this study, from

Harvard Medical School and King Saud University. Participation was optional, and consent was indicated upon clicking the link and starting the survey.

Faculty Interviews

In addition to the student survey, brief semi-structured interviews were carried out with 10 faculty members at KSU's Medical College. The interviews were conducted electronically in the form of 4 open-ended questions administered via SurveyMonkey. The ten participants varied in seniority and gender. They were members of either the Medical Education department or the Community Medicine department at KSU. Faculty were purposefully selected due to their roles in curriculum development and design at the university. The community medicine department was specifically selected due to its involvement in the public health fields.

The participants' responses were anonymous, and they were asked to provide extensive answers to the following questions:

- 1) What do you think about introducing a Global Health (GH) elective at KSU?
- 2) What resources would be needed to introduce a GH elective?
- 3) How impactful do you think this curriculum/elective would be?
- 4) What is preventing us from including a GH elective at KSU?

2.2 Data Analysis and Results

Quantitative data: Student surveys

Of the 600 students who received the survey emails, 253 students replied (42% response rate). The data was analyzed separately using the data analysis and report tool on Qualtrics. To ensure a confidence level of 95%, we needed a response rate of at least 235 students. The data was seen by a statistician. The quantitative data was used to connect the findings of the qualitative data.

Demographics

Of the 253 students, 49% (124) were male and 51% (129) were female. About 55% of the participants were in their 5th year and 45% were the 4th year of medical school (see Table 1). The majority of the participants 72% (182) had never participated in an elective abroad, while 28% (71) had.

Results

83% (210) of the students said they endorse the introduction of a Global Health course while 17% (43) said they did not (Fig.1). Half of the students 51% (129) said they endorsed it as an elective, and 32% (81) as a compulsory course. (Fig. 2). The majority of students 81% (204) said they would participate in a clinical field trip *outside* Saudi Arabia. While 75% (189) of the students said they would participate in a clinical field trip in *rural* Saudi Arabia.

The students also rated the Global Health topics they were interested in based on a Likert scale (Table 2). The topics included Disease Outbreaks, Global Burden of Disease, Social

Determinants of Health, and International Health Systems. Regarding the topic of human rights and gender equality, 78% (197) of the students were interested in studying the topic and only 22% (56) were not (Figure 3). The topic of human rights and gender equality was not presented on a Likert scale but rather as a yes or no question, as I wanted an explicit reflection of the students' perspective.

Table 1. Participant's Characteristics

Faculty (n= 10)	%	Students (n= 253)	%
Females	80%	Females	51%
Males	20%	Males	49%
Medical Education	50%	4th year	45%
Community Medicine (Public Health)	50%	5 th year	55%
Title		Would participate in a clinical experience:	
Lecturer	60%	In <i>rural</i> Saudi Arabia	75.6%
Assistant Professor	10%	Abroad	81%
Associate Professor	10%		
Professor	20%		
		Would consider:	
		A career in public health	41%
		A Master's in Public Health	51%

Figure 1.

Total number of students who are interested in a Global Health curriculum:

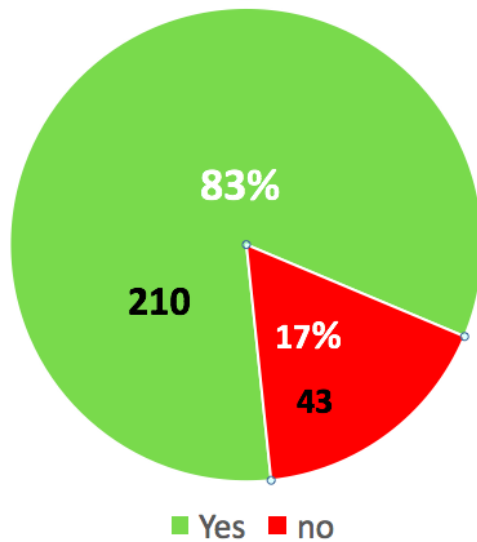


Figure 2. Students' endorsement of the introduction of a Global Health curriculum at KSU.

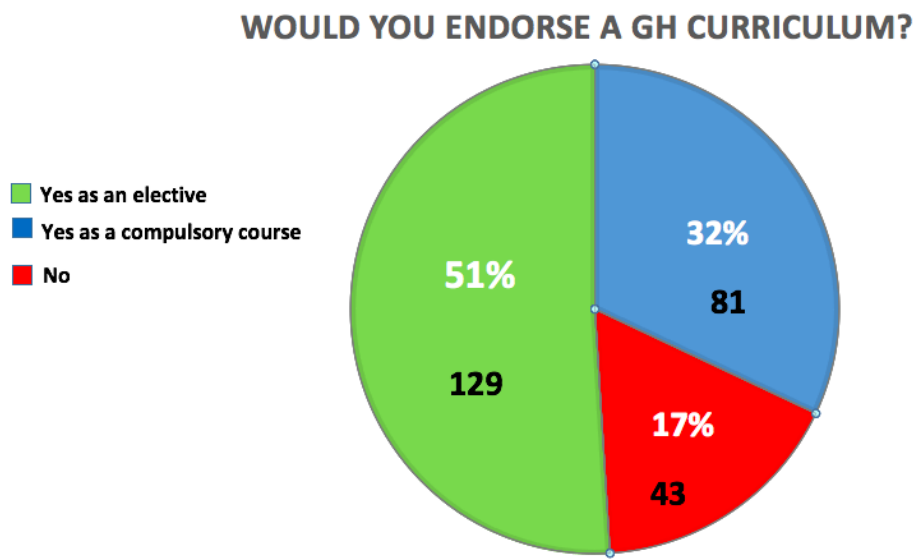


Table 2. Ranking of Global Health Topics based on student interest:

Rank	Global Health Topic	% of students interested
1	Disease Outbreaks	76% (192)
2	Global Burden of Disease	73% (185)
3	Social Determinants of Health	62% (156)
4	International Health Systems	60% (151)

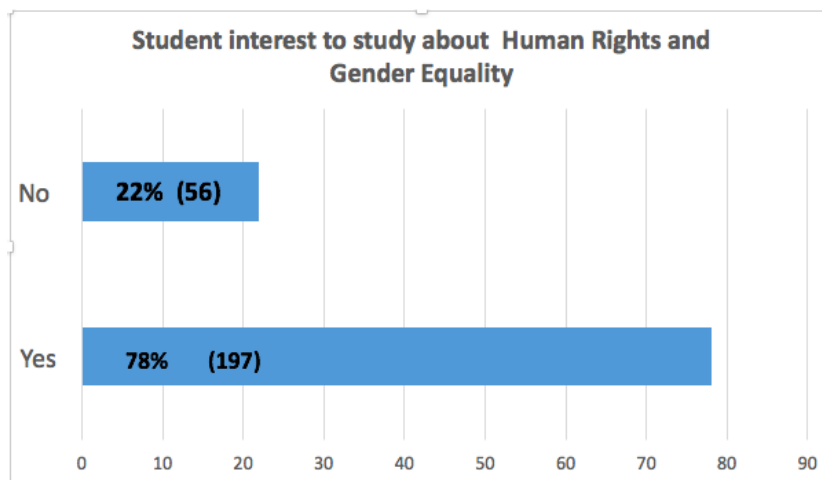


Figure 3. The topic of Human Rights and Gender Equality

Qualitative data: Faculty online interviews

Faculty interviews were administered via SurveyMonkey. The first author (SE) independently read all ten interviews to become familiar with the text and create a list of preliminary codes. Based on the data, 4 themes emerged. A second coder (MB), also a physician at the Master's in Medical Education program at Harvard Medical School, independently coded the data and found 6 themes, similar to the first set of themes. The two coders then compared and discussed their findings and came to consensus on 4 final themes. These themes were reviewed and chosen based on the patterns and quotes both (SE) and (MB) found.

The themes are as follows:

- 1) Introduction of a Global Health curriculum requires many resources**
- 2) Student interest is key to introducing a Global Health curriculum**
- 3) Several barriers need to be overcome before introducing such a new curriculum**
- 4) A Global Health curriculum would be a useful component if implemented correctly**

These themes are described in greater detail along with representative quotes below.

Theme 1: Introduction of a Global Health curriculum requires many resources

Most the interviewees stated that the introduction of a Global Health curriculum requires many resources including:

-Faculty

-International collaboration

- Funding

Faculty

Nearly all faculty participants expressed the need to hire the right faculty members in order to correctly implement the curriculum. There seemed to be a general consensus that specialized faculty is the most necessary factor to launch any curriculum.

“More faculty members willing to teach this topic. - Experts in the field - Vacant jobs for the specialized” – Faculty #7

“Moreover, the department will need appropriate faculty members and experts in the field to teach the students.” – Faculty #9

International Collaboration

There seemed to be a general consensus that a project like this requires international collaboration to provide guidance and also provide clinical sites at which the students can practice.

“Collaborations and networking with international entities” – Faculty #2

“We need international collaboration, Good educators, Good Materials” – Faculty #3

Funding/Financial Resources

Financial resources were mentioned in the majority of the interviews; funding is crucial for the implementation of most projects. The faculty stated that money would be needed to cover the travel of student expenses and to purchase existing modules from different colleges who have a well-established curriculum.

“Financial resources to cover the travel and living expenses” – Faculty #4

“Acquiring a curriculum and using previous modules from different colleges may require financial incentives” – Faculty #6

Theme 2: Student interest is key to introducing a Global Health curriculum

Another recurring theme was the necessity of student interest. Throughout the interviews, the interest quotes kept emerging. No matter how much the program delivers, students must be genuinely interested to sustain the elective. One faculty member suggested surveying students to gauge their interest.

“While the topic looks interesting several factors could affect such expectation including the content of the course, the way it is delivered and students' interest” – Faculty #10

“Ask students at KSU for their views” – Faculty #10

Theme 3: Several barriers need to be overcome before introducing such a new curriculum

Four sub categories emerged under this theme. While most the participants encouraged the introduction of a new elective, they did state that the medical college needed to overcome several barriers. The barriers include the three items below which are clearly expressed in each quote.

- Lack of experience
- Lack of initiative
- Lack of time

Lack of experience

For many of the faculty, lack of experience was identified as a barrier that must be overcome. Faculty at KSU have little experience in Global Health and this is considered an issue to be resolved.

“Global Health requires academics with global health experience which I don’t know we have at the moment” Faculty #2

Lack of initiative

Lack of initiative was also a major barrier for implementing a global health curriculum. Senior faculty members simply don’t initiate the introduction of new projects.

“We usually lack the initiative to introduce new courses.” – Faculty #6

Lack of time

Lack of time was a crucial barrier to overcome. All the faculty members mentioned that both faculty and students have busy schedules and this could mean that neither is invested in such a curriculum.

“Time. Students spend around 40 hours a week in classes, I don’t know how they will be able to fit more courses” – Faculty #9

Theme 4: A Global Health curriculum would be useful if implemented correctly

All ten participants believed the implementation of a Global Health elective would be useful and beneficial to the students, faculty members and university, provided that it was implemented correctly. Most participants mentioned that it would be a rich experience for the students, while some even mentioned the benefits it would bring to the university through research publications

in the field. There was a strong emphasis on “correct implementation” and “correct delivery” of the curriculum for it to be beneficial.

“I think it will definitely be a rich experience for the student” – Faculty #2

“It would be very beneficial, if given the right attention and energy” - Faculty # 9

Table 3 provides further information about the themes identified.

Table 3. The Emerging Themes from the Faculty Interviews

Theme	Theme Description	Example Quotations
<p>1) Introduction of a Global Health curriculum requires many resources:</p> <p>Faculty</p> <p>International Collaboration</p> <p>Funding</p>	<p>Faculty</p> <p>Nearly all participants expressed the need to hire the right faculty members in order to correctly implement the curriculum.</p> <p>International collaboration</p> <p>Faculty stated that a project like this requires international collaboration with other universities.</p> <p>Funding</p> <p>The faculty stated that money would be needed to fund this project.</p>	<p><i>“As with any curriculum, one must provide the necessary faculty to design and implement such an elective”- Faculty #1</i></p> <p><i>“We need to recruit the right people” – Faculty #8</i></p> <p><i>“We need international collaboration, Good educators, Good Materials” – Faculty #10</i></p> <p><i>“Acquiring a curriculum and using previous modules from different colleges may require financial incentive” – Faculty #6</i></p>

<p>2) Student Interest is key to introducing a Global Health curriculum</p>	<p>Faculty expressed the importance of student’s interest in the subject matter.</p>	<p><i>“Primarily we need a genuine interest in the topic” – Faculty #1</i></p> <p><i>“ As a general rule student interest will be vital” – Faculty #10</i></p>
<p>3) Several barriers need to be overcome before introducing such a new curriculum. Including:</p> <ul style="list-style-type: none"> - Lack of experience - Lack of initiative - Lack of time 	<p>Lack of experience</p> <p>Faculty stated that lack of experience was identified as a barrier that must be overcome.</p> <p>Lack of initiative</p> <p>Faculty stated that senior faculty usually don’t take the initiative to introduce new courses.</p> <p>Lack of time</p> <p>Faculty believe that both students and faculty are too busy for this curriculum.</p>	<p><i>“Global Health requires academics with global health experience which I don’t know we have at the moment” – Faculty #2</i></p> <p><i>“We usually lack the initiative to introduce new courses.” – Faculty #6</i></p> <p><i>Their (students) schedules are very busy and they might be hesitant to participate in it” – Faculty #3</i></p> <p><i>“Time. Students spend around 40 hours a week in classes, I don't know how they will be able to fit more courses”- Faculty #9</i></p>

<p>4) A Global Health curriculum would be a useful component if implemented correctly</p>	<p>There was a strong emphasis on “correct implementation” and “correct delivery” of the curriculum for it to be beneficial.</p>	<p><i>“There is a lot of room for growth and students can benefit (from the curriculum) if delivered correctly.” –Faculty #10</i></p> <p><i>“If they were implemented well from the start, they would be very effective” –Faculty #3</i></p> <p><i>“There is room for many publications and projects if this is used wisely” -Faculty #5</i></p>
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Chapter 3: Discussion and Perspectives

Discussion

The results of our study show that there was a significant interest in a Global Health curriculum by both the students and the faculty. Both groups showed enthusiasm and a genuine interest; the students were open to taking the course as an elective, and the faculty acknowledged the benefits that such a curriculum would bring. The students were open to participating in clinical field trips abroad and in rural Saudi Arabia. This is a useful finding as there exists convincing academic, moral, ethical, professional, and economic reasons to introduce global health training in undergraduate medical education. [12] Changes within and outside the medical profession require the introduction of global health training to prepare medical students to meet their professional and societal obligations as physicians in the future. [12]

While both groups expressed interest in a Global Health curriculum, the faculty mentioned several barriers to be overcome. One of the main barriers was the lack of experience and the need for specialized faculty. This can be overcome by international collaborations with universities that have already well-established curricula and experience in the field. Weil Cornell has an extensive Global Health curriculum which was founded in 2009; they have published an extensive article on how they developed this curriculum [4]. As for overcoming the faculty's lack of experience, recruiting a Global Health expert to train our existing physicians is a feasible solution.

Another identified barrier that can be overcome was lack of time. During the academic year, both students and faculty have busy schedules which may interfere with the flexibility of extra

classes. However, fourth and fifth year students at King Saud Medical College have elective months throughout their academic year in which they are free to take any clinical rotation or class provided at the medical college. Traditionally, the only electives available to students during this month are clinical ones; if we introduce this curriculum as a 4-week course, students may be able to participate during their elective months. Another feasible option would be to offer this curriculum during the summer break. This course could entail travels and volunteer work abroad as our research shows that more than 70% of the students are willing to partake in clinical field trips. Some medical schools offer elective classes on global health topics outside of scheduled class times, for instance The University of Alberta Faculty of Medicine and Dentistry offers optional Saturday classes on global health topics [12]. The University of Ottawa Faculty of Medicine has a 13-week seminar and problem-based learning elective course that is offered during lunch breaks. [12]

As mentioned in the faculty interviews, the benefits of a global health curriculum are vast and would contribute to the students' resumes and academic experience. Research has proven that participating in a global health experience during medical school is associated with a number of benefits, including: a richer understanding of culture, increased motivation to pursue either primary care or international health work in the future, improved comprehension of socioeconomic influences on health and illness, greater appreciation for public health, and better foreign language proficiency. [13] More importantly, it would enable research and publications in the field especially since national publications on Global Health are very scarce.

An eye opening finding was that 78% of the medical students were interested in taking a human rights and gender equality class. This is a useful finding since major medical organizations, including the American Board of Internal Medicine, the American College of Physicians–American Society of Internal Medicine, the European Federation of Internal Medicine, and the Canadian Medical Association have stated that addressing health care inequalities is a fundamental principle of physician professionalism. [12]

One of the essential rewards of a Global Health curriculum would be the research outcomes that would add to the nonexistent literature in Saudi Arabia. Saudi Arabia would benefit from national publications on the social determinants of health, which would contribute to the country's 2030 vision for healthcare and contribute to the United Nation's Sustainable Development Goals (SDG).

Based on the survey, 51% of students were interested in a pursuing a master's in public health degree while 41% were interested in pursuing a career in public health. This indicates that at least half of the students have an academic interest in the subject, which reflects a new attitude towards public health amongst students. Perhaps this rising interest in public health correlates with the government's recent decision to invest in and prioritize public health. As of July 2017, King Salman Bin AbdulAziz of Saudi Arabia agreed to give public health a legislative priority and has agreed to adopt public health as priority in all regulations and legislations for disease control and prevention, in order to reduce the burden of disease. [14] This approval reflects the keenness of Saudi Leadership to move forward towards improving health care and ensuring its

access to all population groups in the country and the willingness to invest in global and public health initiatives to achieve these goals.

Limitations

This study surveyed 4th and 5th year medical students at King Saud Medical College during the academic year 2017-2018. It is possible that 1st, 2nd, and 3rd year students, as well as those who did not complete the survey, may have had differing view points. The interviews did not include individuals in the college's finance and research departments, which could have been insightful.

Conclusion

Currently, medical students at King Saud's Medical College are requesting global health training and seeking opportunities that are not yet provided by the university. Faculty have noted the benefits that this curriculum can bring and have expressed interest in introducing a global health curriculum at our college. By learning from other universities that have preceded us in this field, faculty believe this can be done.

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Appendix

Student Survey Questions

- 1. Have you ever participated in an elective outside Saudi Arabia?**
 - a. Yes
 - b. No

- 2. If you answered yes to the question above, what was the nature of your international experience?**
 - a. Clinical experience
 - b. Research
 - c. Observership
 - d. Other

- 3. Have you ever heard of global health as an area of study?**
 - a. Yes
 - b. No

- 4. I would be interested in taking a class about the social determinants of health:**
 - a. Strongly agree
 - b. Agree
 - c. Neutral
 - d. Disagree
 - e. Strongly disagree

- 5. I would be interested in taking a class about the global burden of disease:**
 - a. Strongly agree
 - b. Agree
 - c. Neutral
 - d. Disagree
 - e. Strongly disagree

- 6. I would be interested in taking a class about international health systems:**
- Strongly agree
 - Agree
 - Neutral
 - Disagree
 - Strongly disagree
- 7. I would be interested in taking a class about human rights and gender equality in medicine:**
- Strongly agree
 - Agree
 - Neutral
 - Disagree
 - Strongly disagree
- 8. I would be interested in taking a class about disease outbreaks across the globe:**
- Strongly agree
 - Agree
 - Neutral
 - Disagree
 - Strongly disagree
- 9. Would you endorse the introduction of global health course at your institution:**
- Yes, as a compulsory course
 - Yes, as an elective
 - No, not interested
- 10. If given the chance, would you participate in a clinical field trip abroad to help underserved communities (ex: in Africa, South East Asia etc) ?**
- Yes
 - No
- 11. Would you participate in a clinical experience in rural Saudi Arabia?**
- Yes
 - No

12. What is your sex?

Female

Male

13. What year are you in?

a. 4th year

b. 5th year

14. What do you want to do after graduation?

a. Residency program in Saudi Arabia

b. Residency program abroad

c. Career in public health

d. Career in Research

e. I really don't know