



## MULTI-CONTINENTAL ANATOMY PARTNERSHIPS: SHAPING FUTURE MEDICAL LEADERS FOR GLOBAL HEALTHCARE CHALLENGES

Dr. Saritha Reddy V. R<sup>1\*</sup>, Dr. Sujatha V<sup>2</sup>, Dr Ganesan Murugaperumal MD<sup>3</sup>

<sup>1,2</sup>Assistant Professor, Department of Anatomy, Melmaruvathur Adhiparasakthi Institute of Medical Sciences and Research, Melmaruvathur, Tamil Nadu, India.

<sup>3</sup>Assistant Professor, Department of Anatomy, Tagore Medical College & Hospital, Rathimangalam, Melakkottaiyur, Chennai- 600127, Tamil Nadu, India.

### ABSTRACT

Because people and data can easily cross borders today, the value of making medical education available internationally is increasing. Being such a major subject in health sciences, anatomy allows teachers to introduce global health ideas and promote a wider worldview among students. A team of twelve anatomy groups from all over the world has come together to establish this program. Authors outline a plan for the development and growth of the program in the future. The program aims to strengthen global healthcare by helping students lead in such a way that they benefit from early globalization through exchanges, teamwork, cultural events and education in anatomy as well as issues of global health. Thanks to the anatomy theme, the program gave preclinical medical and dental students their first experience of international teamwork. The course was designed so that learners went past basic anatomy and studied healthcare and cultures. Initially, students carried out group projects online only with students abroad and then presented their findings in videoconference sessions to other teams. Therefore, I took part in research internships located in developed areas, primarily in basic sciences. All participants were open to discussing health systems and issues from around the world, as well as varying health care ethics and cultural traditions. Both areas of science and culture expanded because of the internship work done by students and faculty. Working together, anatomy departments all over the world enable medical anatomy courses to incorporate elements of global health and global education.

**Key words:**-Anatomy Education, Medical Leadership, Global Healthcare.

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### INTRODUCTION

Because the world is now so connected, medical education is increasingly including international elements. Internationalization means purposely adding an international, intercultural or global aspect to what and how higher education is delivered, so as to benefit students and faculty and contribute to society.

Corresponding Author  
Dr. Saritha Reddy V. R

Even though IoME is covered in educational literature [2–6], very little research has been carried out on it as a separate focus. IoME covers working in various healthcare settings with various challenges, reflecting the main aspects of global health (GH) [7]. A number of theories provide the foundation for the purpose of IoME. The market model, the liberal model and the social transformation model are the three such frameworks that

Hanson introduces in 2015 [8,9]. According to the market model, countries and organizations are encouraged to compete in the international education field. The main idea of the liberal model is to encourage nations to cooperate and share knowledge across cultures. The social transformation model focuses on challenges to society from globalization like inequality, exclusion and interdependence and tries to correct social injustices. Health employees and leaders can grow by understanding issues on a global scale and IoME teaches them about significant issues that are important around the world [10]. IoME increases students' knowledge of diversity in society, culture and ethics, readying them to provide medical care internationally, promote cultural understanding and lead to better results in global health. IoME exists in a wide range of forms and takes into account many different stakeholders and learning approaches. Topics may center on what students go through, how faculty are developed or new approaches to curriculum [11]. Besides, work on internationalization often takes place at the university, federal or policy level, for instance, through university groups and intergovernmental teams. On the student side, IoME efforts consist of lectures in the classroom, student-to-student international exchange, overseas internships and semesters and attracting students from all over the world. For a few regions, the main effort comes from transforming society, often called global health projects focused on clinical work and research in inner-city settings [13]. Some cultures strongly favor international engagement which is encouraged by special government or organizational projects intended to encourage mixing and promote understanding among nations, mostly linked to efforts at restoring peace [14–17]. Economic and international competitiveness have a strong influence on IoME [18,19]. At this time, there is no uniform set of curricula or list of general learning objectives for IoME [12,20–24]. Within medical schools, it is found in several departments and tends to correspond with offerings from public health and global health [25]. Billion Surgeries Network is built on anatomy collaborations and internationalization. Understanding anatomy is important for every aspect of the health sciences. Even though such cooperation is important, it isn't discussed much in the literature, particularly in countries with limited resources [2,26–28]. Due to its central role with basic sciences and student teaching, anatomy naturally helps connect to global health and IoME. Speaking at a major anatomy association gathering, an internationally recognized health expert urged anatomists to become involved in work on a global scale [29]. This report outlines how twelve anatomy departments from different continents have teamed up through a one-of-a-kind program to help IoME and provide better healthcare for the world. Drawing on anatomy courses, the curriculum added topics from public health and global health.

## METHODS

The idea behind the program was not to change the international approach to anatomy teaching or to change the curriculum. As a result, the anatomy courses acted as tools to help students collaborate internationally and network with future healthcare leaders. Because anatomy is usually introduced right at the start of medical and dental education, it was selected as a subject students can easily work on together. Similarly, questions about giving one's body after death and the related ethics are applicable to all students at this stage of learning. The program created a system that helped students discuss different medical education and healthcare models, the differences in health law and ethics, current public health problems and basic scientific research. Students could spend time studying abroad, creating a way to interact with global learners in different cultures. The authors thought that these components were important for giving future healthcare leaders a broad and international perspective. With this preparation, the program hopes to lead to better health outcomes around the globe. Short-term findings in the publication focus on students acquiring the subject knowledge and skill needed for their profession. Even though there is no common agreement on global competencies in the literature [12,23], here we address understanding international health matters, teamwork in multinational projects and increasing cultural understanding through cultural presentations, large group conference presentations and internships. At the outset, participation mostly included partners from very developed parts of the world. Students in the program were included in anatomy classes and were quite inexperienced. Many volunteers were close to twenty or over and a good number of them had never been abroad before. Aiming to provide distance for families to get acquainted, we matched couples with similar cultures but who come from different nationalities. It is being planned that the program includes more students from different backgrounds in the following phase.

## RESULT

The gives an outline of the partner institutions, along with the levels of student participation in the collaboration program. There were 150 participants altogether in small group activities organized at the 12 partner schools to support exchanges across cultures and advance professional skills. It becomes clear from the figures that students traveled both to and from partner universities, boosting the effectiveness of virtual meeting. There was a range in the number of students in small group collaborations, from a group of 2 to a group of 27. These differences are caused by variations in institutional size, number of programs available and student desire for global activities. In general, most partner institutions enrolled between 6 and 19 students which is enough to enable real collaboration but not too many for it to be too organized.

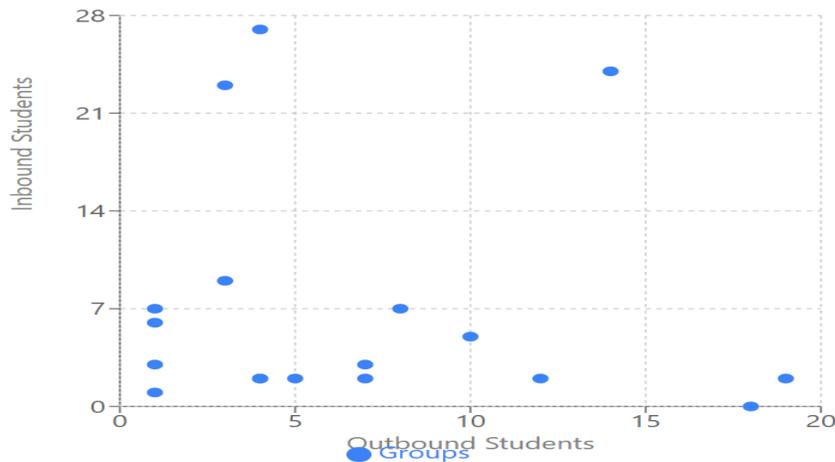
There were 0 up to 14 students from each home institution traveling on outbound student exchanges. A number of institutions kept their students at home, but there were others that sent many students on exchanges, the highest being fourteen students who went abroad. Students may have difficulty traveling due to decisions made about logistical, financial or educational issues. Most host institutions reported that they received from 1 to 24 students, making up their inbound student numbers. At one site, the program admitted 24 visiting students, making it a key center for students who wish to study in another

country. Other organizations reported smaller numbers of participants from overseas, indicating that hosting was evenly shared among everyone in the network. Generally, the data show that a balanced combination of collaborating online and traveling in person gave students the opportunity to share ideas and experiences in a multicultural environment. Interactions in small groups and exchanges help the program achieve its goal of teaching future health professionals about the world and forming networks with them.

**Table 1: List of partner schools and corresponding student numbers, including inbound and outbound student travels**

Students in Small Group Collaboration	Outbound Students	Inbound Students
10	5	4
27	7	2
18	0	4
2	1	1
8	7	1
7	4	2
12	2	3
9	1	3
7	3	1
6	5	2
19	2	3
23	14	24
<b>150</b>		

**Figure 1: Students in Small Group Collaboration Analysis, Distribution of outbound and inbound students across 18 collaborative groups (Total: 150 students).**



**DISCUSSION**

The report contributes to medical education internationalization by exploring the program design, curriculum used and student outcomes of a first-of-its-kind student exchange created by anonymously collaborating anatomy departments. In academia, anatomy acted as the main framework for promoting these global related activities. The program included

formal aspects of IoME, including cooperation with institutions, educating students and encouraging student mobility. It included proposals from liberal, social justice and competitive models in an effort to support health solutions that are internationally recognized to advance global health. Very few written programs provide the chance to experience highly developed and limited resources in various foreign settings [31]. Most initiatives

are different from this program which made sure students stepped into international education in a careful and organized manner. Even though many international programs zero in on social justice in global health, often doing humanitarian work where it is needed [12,23], the authors suggest considering all areas of IoME in the current era that promotes worldwide equity and responsibility. Many exchange programs in different parts of the world have people move around developed regions which helps them compete and cross-institutional collaboration [14]. More and more, it is understood that preparation prior to departure is very important, but common programs fail to highlight many international differences. Participants said they were well prepared for cultural sensitivity, their emotional and mental health, an accurate understanding of subjects and safe behaviors [32]. There are few reports available about initiatives for early-phase medical students [3,6,33,34]. The authors point out that because mainly young students participated in the program, their new social connections would be more likely to last. Early results suggest that most people in the program want to continue collaborating which might make the collaboration long lasting. People in the original cohort still interact frequently through their social media and by visiting each other in person. Additional studies covering a long period will be conducted. Few programs set up systematic ways for students from different nations to learn side by side [35,36]. Even though student networking and mobility exist, they often do not fit into the main framework of medical education [2,30,36]. Although being part of student-run organizations offers excellent chances to network (like IFMSA), oversight from professors ensures that medical education is maintained and everything is integrated properly. Because globalization is influencing medical education, it is up to institutions to take the lead in supporting collaborative efforts. For a long time, sending students abroad has been the main way medical education achieves internationalization [6]. Many medical schools now provide international chances and a sizeable number of students include global health experiences as part of their studies [13,39,40]. Regardless of other options in the IoME, including internationalization and global programs, travel remains a preferred approach to teaching global health to students. Few programs exist that allow for multidirectional interactions [28,43]. The initiative made sure that students who studied abroad welcomed exchange students from partner institutions on their campus, helping to make the host campuses more international. Many types of collaborations are found in medical education [18,35,44–48]. The really special aspect of this program is that twelve different anatomy departments from several continents come together to upgrade medical and dental education for students and support networking. Still, faculty teams are rare and typically have narrow scope [27]. Because there are no formal best

practices published, it is hard to ensure efficient replication of these programs. Though it has made important contributions to global health in teamwork, scientific research, ethics and professionalism, anatomy is not yet formally included in global health education [49–51]. However, these courses are sometimes looked at as irrelevant and using lots of materials. A lot of students in the program think that anatomy helps bridge international connections. Since each small session was short, most groups concentrated more on networking than studying anatomy during the course. Although the authors have written about this study in past years, there is little information on the connection between anatomy and IoME so far [2,30]. Anatomy makes a valuable starting point for international initiatives. Most programs teach it right away, connecting it with how dental and medical students first become aware of global health. Another aspect is that anatomy stimulates collaboration among professors from different places. Because anatomists work within fundamental sciences, their work can encourage students to join research and cover fresh study areas such as infectious disease genetics. Early support and advice from faculty allowed the program to tailor international research placements for students in its beginning phase. The program was different from many international ones [12,22,23] because it focused on healthcare, health education, health laws and ethics, rather than only on clinical medicine. The topic was not meant to replace significant public health or global health study.

## CONCLUSION

Internationalization of medical education (IoME) is enhanced here by using anatomy as a key subject to coordinate study between preclinical students from many countries. By carefully planning each step of introducing students to international activities, the program includes formal parts of IoME such as partner universities, student activities and visits to all regions. Combining liberal, social justice and competitive principles, it tackles all kinds of global health problems and helps students connect with healthcare around the world. It addresses a wider range of needs than existing initiatives concentrated on humanitarian effort or movement through industrialized areas. Starting to engage students in global teams and intercultural discussions early in their studies helps them form enduring professional alliances well after the program is over. By taking part in foreign projects, students gain abilities needed for top healthcare positions. In addition, the program points out how student-faculty collaboration already built into classes can help ensure quality and integration—something student groups might not consider. Through having students go abroad and later host students from abroad, the program helps the institution internationalize and makes education more valuable for all students. This work shows how we are

modernizing anatomy from a rigid and energy-heavy discipline to a platform for international interaction. Because anatomy is taught early in medical programs, is related to the basic sciences and has research potential, it helps unite students and teachers worldwide. As a result, there are new opportunities for scholars to collaborate and add healthcare systems, ethics, law and public health to their medical knowledge. In general, the program

offers a method that can be repeated to address briefcomings in IoME studies, mainly the underrepresentation of anatomy teaching in global health. It motivates medical schools and teachers to use approaches that join the major sciences with knowledge of global health which helps improve worldwide healthcare.

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