

ORIGINAL RESEARCH

Global Health Values of a Multidirectional Near Peer Training Program in Surgery, Pathology, Anatomy, Research Methodology, and Medical Education for Haitian, Rwandan, and Canadian Medical Students

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Abstract

BACKGROUND As health care delivery increasingly requires providers to cross international borders, medical students at McGill University, Canada, developed a multidirectional exchange program with Haiti and Rwanda. The program integrates surgery, pathology, anatomy, research methodology, and medical education.

OBJECTIVE The aim of the present study was to explore the global health value of this international training program to improve medical education within the environment of developing countries, such as Haiti and Rwanda, while improving sociocultural learning of Canadian students.

METHODS Students from the University of Kigali, Rwanda and Université Quisqueya, Haiti, participated in a 3-week program at McGill University. The students spanned from the first to sixth year of their respective medical training. The program consisted of anatomy dissections, surgical simulations, clinical pathology shadowing, and interactive sessions in research methodology and medical education. To evaluate the program, a survey was administered to students using a mixed methodology approach.

FINDINGS Common benefits pointed out by the participants included personal and professional growth. The exchange improved career development, sense of responsibility toward one's own community, teaching skills, and sociocultural awareness. The participants all agreed that the anatomy dissections improved their knowledge of anatomy and would make them more comfortable teaching the material when they returned to their university. The clinical simulation activities and shadowing experiences allowed them to integrate the different disciplines. However, the students all felt the research component had too little time devoted to it and that the knowledge presented was beyond their educational level.

CONCLUSION The development of an integrated international program in surgery, pathology, anatomy, research methodology, and medical education provided medical students with an opportunity to learn about differences in health care and medical education between the 3 countries. This exchange demonstrated that a crosscultural near-peer teaching environment can be an effective and sustainable method of medical student-centered development in global health.

KEY WORDS anatomy, surgery, medical education, pathology, research methodology

The authors declare that they have no conflict of interest to disclose.

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INTRODUCTION

Global health educational programs aim to promote culturally competent care while enabling personal, cultural, and social development.^{1–3} These programs promote reverse education and cross-cultural exposure to different lifestyles, languages, and health care systems, which further enhances students' educational experiences, communication skills, and doctor–patient relationships.⁴ Additionally, they often respond to the needs of low- and middle-income countries to improve their health care infrastructure, as previously described in Rwanda where increasing access to surgical care is a priority.^{5,6}

Medical Students 4 Haiti (MS4H) is a nonprofit organization with a mission to educate and engage Haitian and North American students through a cross-cultural, near-peer teaching platform in order to improve global health capacity. The McGill chapter was established in 2012 as a means of providing students in Haiti with anatomy teaching, in response to the earthquake in that country, which destroyed the anatomy cadaver building at the Université Quisqueya Medical School. The program has since expanded, embarking on its fifth iteration, providing a more comprehensive educational curriculum for students, and accompanied by a more diverse environment by including students from Rwanda, France, and Canada.

A near-peer teaching approach was used for this program as it has proved to be successful in international exchange programs.⁷ Near-peer teaching encourages the development of knowledge through the collaborative support of peers who share a common interest, such as being enrolled in similar courses or programs but at different stages of their learning.⁸ This method has been demonstrated to improve teamwork skills, motivation and confidence in learning, and to generate critical thinking skills.⁹

Investigating the competency and effect of international exchange programs is essential when measuring the true value of their role in medical education.¹⁰ To establish the utility of this international exchange program, we wanted to assess the validity and effectiveness of the training program in developing knowledge and skills in medicine, and also explore the social and developmental values of an international near-peer teaching program.¹⁰ Through a mixed quantitative and qualitative approach, we aimed to investigate the extent of sociocultural learning that was previously reported by McAllister *et al.*¹¹ and Vasquez¹² in the context of a trilateral international training program covering

surgery, pathology, anatomy, research methodology, and medical education.

METHODS

International Training Program. The program consisted of 5 key components:

1. Anatomy dissection: Haitian and Rwandan students had access to a cadaver lab and worked with Canadian medical students in structured dissections of a human cadaver (24 hours)
2. Research methodology: Haitian and Rwandan students participated in a small group-learning session that aimed to teach them about the research methodology and different types of research studies and to encourage them to develop their own research projects within their home country (9 hours).
3. Clinical simulation activities: Students had clinical sessions at the Steinberg Center for Simulation and Interactive learning focused on providing basic clinical and surgical skills including suturing and knot tying, orthopedic casting and splinting, and Foley catheter and nasogastric tube insertion (33 hours).
4. Clinical shadowing: Students participated in several half-day clinical sessions with pathologists and trauma surgeons at McGill University Health Center (30 hours).
5. Structured teaching sessions: Students were taught basic teaching methodology to ensure the effective transfer of knowledge back to their communities and were asked to present a lecture and lab demonstration that was assessed; the students received (3 hours).

This expansion in 2015 from the original program in 2012 aimed to equip Haitian, Rwandan, and Canadian students to become the future peer trainers, which is an attempt to build a sustainable program. The format used was similar to what Burns¹³ suggested to give the teachers a resource kit to facilitate the transference of the training into educational opportunities for their students.

Each day, a 3-hour session in the anatomy laboratory with a Canadian near-peer instructor or a 3-hour clinical shadowing experience were followed by either a clinical simulation session or “Teach the Future Teacher” sessions (Fig. 1). The program focused on anatomy dissection, as this was the original structure of the program following the 2012 earthquake in Haiti. Additional components of the program were chosen based on feedback received from participants in previous iterations.

Quantitative Survey. A quantitative survey was created using Google Survey, which collected basic

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