

A Self-Reported Needs Assessment Survey of Pediatric Orthopaedic Education in Haiti

Rameez A. Qudsi, MD,^{*,†,‡,§,||} Heather J. Roberts, MD,[¶] Abhiram R. Bhashyam, MD, MPP,^{§, #} Elena Losina, PhD, MSc,^{*,†, #, **} Donald S. Bae, MD,[‡] Francel Alexis, MD,^{††} and George S. Dyer, MD^{#, ††}

^{*}Department of Orthopaedic Surgery, Orthopaedic and Arthritis Center for Outcomes Research, Brigham and Women's Hospital, Boston, Massachusetts; [†]Department of Orthopaedic Surgery, Policy and Innovation Evaluation in Orthopaedic Treatments (PIVOT) Center, Brigham and Women's Hospital, Boston, Massachusetts; [‡]Department of Orthopaedic Surgery, Boston Children's Hospital, Boston, Massachusetts; [§]Harvard Combined Orthopaedic Residency Program, Harvard University, Boston, Massachusetts; ^{||}Harvard T.H. Chan School of Public Health, Boston, Massachusetts; [¶]Department of Orthopaedic Surgery, University of California San Francisco, San Francisco, California; [#]Harvard Medical School, Boston, Massachusetts; ^{**}Department of Biostatistics, Boston University School of Public Health, Boston, Massachusetts; ^{††}Department of Orthopaedic Surgery, Adventist Hospital, Diquini, Haiti; and ^{‡‡}Department of Orthopaedic Surgery, Brigham and Women's Hospital, Boston, Massachusetts

OBJECTIVE: The burden of musculoskeletal disease remains high in low-income countries, with a high rate of pediatric disease. Efforts continue for orthopedic education, but there is little guidance on local needs and desires. Our aim was to determine the specific content and modalities that would be most useful for pediatric orthopedic educational programs abroad, and we demonstrate a practical method of identifying country-specific educational deficits through a self-reported needs survey in Haiti.

DESIGN: A cross-sectional survey was administered using an automated response system. We obtained demographic information as well as training and practice patterns, comfort levels with pediatric diagnoses, and desired topics for education using a 5-point Likert Scale.

SETTING: Haitian Annual Assembly for Orthopaedic Trauma (HAAOT), the only national, continuing medical education conference for orthopedic providers in Haiti.

PARTICIPANTS: Of 60 eligible participants, 51 were included in the final analysis.

RESULTS: Time spent on pediatric orthopedics varied widely, centered at 10% to 25%. Median comfort level with pediatric orthopedics was 3 of 5. Skills with lowest self-reported competence included spica casting, clubfoot casting, and management of supracondylar humerus fractures. Skills with highest self-reported competence were long-leg casting and Salter-Harris classification. Modes of education highly requested included didactics/lectures, hands-on sessions, dedicated rotations, and exchanges with foreign peers/mentors. Diagnoses most encountered were osteomyelitis, trauma, and clubfoot; lowest comfort levels were in neuromuscular, spine, lower extremity deformity, congenital hip, and clubfoot; and most requested for future teaching were congenital hip, neuromuscular, and spine.

CONCLUSIONS: Haitian orthopedic providers express a strong desire and need for ongoing pediatric orthopedic education. They describe a high prevalence of trauma and infection, but convey a requirement for more comprehensive, multimodal teaching that also includes congenital deformities/dysplasias, neuromuscular, and spine. Our results demonstrate the importance of assessing country-specific

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Correspondence: Inquiries to Rameez A. Qudsi, MD, Department of Orthopaedic Surgery, Orthopaedic and Arthritis Center for Outcomes Research, Brigham and Women's Hospital, 75 Francis Street, BC-4-4016, Boston, MA 02115; fax: (617) 525 7900; e-mail: rqudsi@partners.org

needs and involving local care providers in curriculum development. (J Surg Ed ■■■■-■■■. © 2017 Association of Program Directors in Surgery. Published by Elsevier Inc. All rights reserved.)

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COMPETENCIES: Practice Based Learning and Improvement, Systems Based Practice, Medical Knowledge

INTRODUCTION

The global burden of surgical disease is large and growing, particularly related to orthopedic problems. An estimated 100 million procedures remain unperformed worldwide for injuries, congenital anomalies, and other musculoskeletal disease alone.¹ Moreover, orthopedic diagnoses are an increasing cause of global disability-adjusted life years lost, most notably in resource-challenged nations with high rates of childhood disease.²⁻⁴ Numerous individuals and professional societies are focused on pediatric orthopedics abroad,⁵ with long-standing efforts established in Uganda,⁶ Malawi,^{7,8} India,^{9,10} and Nepal¹¹ among others.

Ranking as the poorest country in the Americas, and one of the poorest in the world, Haiti has also been the site of numerous orthopedic efforts since a magnitude 7.0 earthquake in January 2010.¹²⁻¹⁵ Orthopedic training has been established as an important component of improving surgical care in low-resource countries.¹⁶⁻¹⁸ Past efforts have provided proof of concept for continuing medical education (CME) in developing countries including Haiti.¹⁹ In 2013, the first national CME conference for orthopedics in Haiti since the earthquake was established—the Haitian Annual Assembly of Orthopaedic Trauma (HAAOT).²⁰ Despite the multiple programs that focus on developing pediatric orthopedics in developing countries, no study to date has explored educational needs and desires specific to treating children in this context. This has limited the design of any pediatric orthopedic curriculum abroad including the efforts in the HAAOT. Prior work at this conference demonstrated the benefits of an audience response tool to allow real-time feedback from attendees regarding self-perceived needs on education topics, but content focused only on trauma in the general (adult) patient setting.²⁰

We present a needs assessment survey and analysis of the educational priorities for pediatric orthopedics in Haiti. We believe this is an important step to guide ongoing pediatric orthopedic efforts in Haiti and other low-income countries, and an example of incorporating country-specific perspectives into surgical curriculum development abroad.

MATERIALS AND METHODS

The survey was conducted in April 2015 during the HAAOT. This was the third annual conference in

Port-au-Prince and featured original research presentations, didactic lectures, and hands-on learning. It has had demonstrable success in education, expanding beyond trauma into multiple subspecialties.^{20,21} Survey participants included local, Haitian orthopedic residents and surgeons, as well as a small number of nonorthopedic physicians and nurses invested in musculoskeletal care. Participation was voluntary and anonymous.

With input from both Haitian and US-based (“foreign”) pediatric orthopedic surgeons, a 28-question survey was designed to assess pediatric orthopedic educational needs, including training and practice patterns, levels of comfort in this field, perceived clinical burden, and both the form and content desired for ongoing education. We conducted directed interviews with 3 senior pediatric orthopedic surgeons, active for many years educating Haitian surgeons, to formulate general themes for query. Specific questions and response options were then formulated with 2 prior conference organizers familiar with demographics of the attendees, and reviewed for content, clarity, and language by a US-based pediatric orthopedic surgeon and expert in American resident and fellow education. Questions were directed toward understanding perceived areas of need, clinical volume, and preferred modes of education to objectively guide future conference programming and education.

Responses were collected using a 1 to 5 Likert Scale or by having participants select diagnoses from a list of options—upper extremity trauma, lower extremity (LE) trauma, spine deformity and trauma, congenital upper extremity, congenital hip, LE deformity, neuromuscular, clubfoot, osteomyelitis and septic arthritis, or compartment syndrome. Demographic information about respondents, including nationality, age, sex, level of training, base hospital, and years in practice was also obtained. Survey questions were collected in real-time using an electronic audience response system (TurningPoint ResponseCard RF, Turning Technologies).²² Cumulative time to answer all questions was approximately 14 minutes. Each answer was registered exclusively to a unique individual while maintaining anonymity.

Median and mean scores were calculated and ranges presented for all Likert scale questions. Responses of Haitian and US-based orthopedic surgeons were collected but given that the vast majority of foreign participants were not pediatric orthopedic specialists, foreign comfort levels and current practice patterns are not reported. Given that all US-based responses were accounted for, respondents with missing data for nationality ($n = 18$) were recorded as Haitian. Participants not responding to at least 50% of the demographic questions were excluded as these 9 individuals either discontinued participation or had markedly higher nonresponse rate overall (data not shown). Individual question response rates ranged from 47% to 96%. For questions in which more than one answer choice was

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