

The Role of Free Virtual Conferences Emphasizing Surgical Management With Limited Resources

Samuel K. Simister, MD; Krishna Anand; Abdoulie Njai, MD, MPH; Fernando Carrillo-Villaseñor; Yak Nak; Nikhil Gattu, BA; Shravya Kakulambarri; Kiran Agarwal-Harding, MD

Purpose: Orthopaedic surgeons in low- and middle-income countries (LMICs) frequently manage complex pathology with limited resources and have few opportunities for peer-to-peer learning. The Harvard Global Orthopaedics Collaborative (HGOC) sought to develop free, multilingual virtual education conferences (VECs) to address these needs.

Methods: HGOC organized VECs on trauma, spine, arthroplasty, and research. Original, multilingual lectures and curated articles were provided in a “flipped classroom” model. Live sessions included case presentations from surgeons working in LMICs. Representing diverse practice environments, course faculty discussed cases and answered questions. Conference improvement was guided by quality-assurance surveys.

Results: Eight VECs were held 2021-2023, reaching 2516 participants in 78 countries. 47 lectures and 14 live sessions were recorded and shared online. Live sessions averaged 156 attendees, 86% from LMICs; 40% surgeons and 42% surgical trainees. Multilingual translations were available and utilized by participants for 5/8 conferences. Overall satisfaction averaged 4.5/5 (range: 4.32-4.96). Attendee feedback detailed direct impacts of knowledge on clinical practice.

Conclusion: HGOC developed successful open-access and multilingual VECs. VEC participants accessed high-quality didactic lectures, curated articles, case presentations by surgeons working in resource-limited settings, and case discussions with international experts. VECs were highly rated, provided practical knowledge, and are growing in popularity. Future conferences will improve the equity of orthopaedic education via additional topics and expanded reach.

Table: Conference Details on Attendance and Quality

	Live Sessions	Registrations	Registrations from LMICs	Surgeon	Resident/ Trainee	Average Session Attendance	Session Quality*
	<i>n</i>	<i>n</i>	%	%	%	<i>n</i>	<i>mean ± SD</i>
Lower Extremity Trauma 2021 (Libya)	3	272	85.2	32.4	59.9	†	4.42 ± 0.68
Lower Extremity Trauma 2022 (The Gambia & Sierra Leone)	1	113	90	28.3	46	†	4.56 ± 0.51
Spine Trauma 2022 (Mexico)	2	803	81	43.2	39	182.5	4.88 ± 0.31
Lower Extremity Trauma 2023 (South Sudan)	1	562	88.5	46.4	38.1	205	4.64 ± 0.58
Haitian Annual Assembly of Orthopaedic Trauma 2023	2	†	†	†	†	50	4.47 ± 0.81
Hip Arthroplasty in Africa 2023	1	501	†	†	†	256	4.65 ± 0.51
Upper Extremity Trauma (2023)	4	483	78.2	50.6	31.1	106.25	4.57 ± 0.64
Overall	-	456	85.6	40.2	42.8	156	4.59 ± 0.19

LMIC, Low-to-Middle Income Country. †, indicates primary partner nation, which included support via faculty and case presentations.

*Session Quality was calculated from those that completed post-session surveys. SD, standard deviation. †Data not collected.