

Education during Surgical Outreach Trips in Vietnam: A Qualitative Study of Surgeon Learners

Jessica I. Billig, MD, MS*
 Jacob S. Nasser, BS†
 William H. J. Chung‡
 Kristine A. Huynh, BSS§
 Kevin C. Chung, MD, MS¶

Background: Visiting educator trips teach surgical care in low-resource settings to develop sustainable global surgery. Surgery has been integral in these volunteer activities, but it is unknown whether surgeon learners receive suitable education during these trips. We sought to describe the educational experiences of surgeon learners during a visiting educator trip to better understand the perceptions of surgical outreach education.

Methods: We conducted semistructured interviews of 18 surgeon learners participating in a visiting educator trip to 2 hospitals in Thai Nguyen, Vietnam. Each interview was conducted in Vietnamese, translated into English, and transcribed. Narratives were content coded using thematic analyses.

Results: We identified 3 main themes. First, participants noted the value in surgical outreach and believed that these trips provided a thorough understanding of surgical care from patient evaluation to complications management. Second, participants described key barriers to education. Participants desired to focus on “learning one topic in depth” rather than learning in breadth. Furthermore, they described the paucity of translated resources, a lack of English proficiency, and rudimentary translator services. Finally, participants provided substantive guidance in improving surgical outreach education, specifically regarding the limited nature of current international partnerships to foster long-term, sustainable relationships.

Conclusions: Although Vietnamese surgeon learners felt that visiting educator trips were beneficial, they recognized important areas for improvement. The language barrier was a major impediment to effective learning with materials and lectures commonly provided in English, highlighting the need for improved language concordance. Additionally, participants desired continued relationships with the visiting surgeons to build long-term collaboration. (*Plast Reconstr Surg Glob Open* 2020;8:e2969; doi: [10.1097/GOX.0000000000002969](https://doi.org/10.1097/GOX.0000000000002969); Published online 21 July 2020.)

From the *VA/National Clinician Scholars Program, VA HSR&D Center for Clinical Management Research, VA Ann Arbor Healthcare System, Section of Plastic Surgery, Department of Surgery, Michigan Medicine, Ann Arbor, Mich.; †George Washington School of Medicine, Washington, D.C.; ‡Section of Plastic Surgery, Department of Surgery, University of Michigan, Ann Arbor, Mich.; §Oakland University William Beaumont School of Medicine, Rochester, Mich.; and ¶Section of Plastic Surgery, Michigan Medicine, Ann Arbor, Mich.

Received for publication May 8, 2020; accepted May 20, 2020.

The funding organizations had no role in the design and conduct of the study, including collection, management, analysis, and interpretation of the data. The content is solely the responsibility of the authors and does not necessarily represent the official views of the US government or Veterans Administration.

Copyright © 2020 The Authors. Published by Wolters Kluwer Health, Inc. on behalf of The American Society of Plastic Surgeons. This is an open-access article distributed under the terms of the [Creative Commons Attribution-Non Commercial-No Derivatives License 4.0 \(CCBY-NC-ND\)](https://creativecommons.org/licenses/by-nc-nd/4.0/), where it is permissible to download and share the work provided it is properly cited. The work cannot be changed in any way or used commercially without permission from the journal.

DOI: [10.1097/GOX.0000000000002969](https://doi.org/10.1097/GOX.0000000000002969)

INTRODUCTION

Globally, there is a substantial unmet surgical need, with approximately 143 million surgeries required annually, in part because of insufficient surgical workforce.¹ The population in low- and middle-income countries (LMICs) bear the burden of this unmet need, accounting for 48% of the global population but with only 19% of the surgeons worldwide.² Given this unmet surgical need and surgical workforce shortage, multiple organizations offer surgical care in LMICs through surgical outreach trips. Many of these trips primarily focus on providing high-throughput surgical care to patients in LMICs. However, there has been a shift in global surgery to deliver a more

Disclosure: Dr. Chung receives funding from the National Institutes of Health and book royalties from Wolters Kluwer and Elsevier. He has received financial support from Axogen to attend conferences. All the other authors have no financial interest to declare.

Related Digital Media are available in the full-text version of the article on www.PRSGlobalOpen.com.

sustainable model of surgical care through educational surgical outreach programs.

Various organizations from high-income countries (HICs) have transitioned from high-volume surgical outreach trips to trips that emphasize teaching advanced surgical techniques, including subspecialty surgery, to local physicians in LMICs to promote sustainability, capacity building, and collaboration. These trips assess the specific needs of surgeon learners and aim to provide one-on-one teaching and lectures to educate local surgeons with the ultimate goal of transitioning surgical care to local surgeons.³ The educational philosophy of these trips mimics that of traditional US postgraduate residency with hands-on intraoperative training and didactic teaching sessions on the management of specific surgical conditions.³ Although learning needs and gaps in knowledge are commonly assessed to develop the surgical trip's educational program, no investigators have assessed the quality of teaching and whether these trips provide surgical education in a manner that is beneficial and acceptable to local surgeon learners. Moreover, with a push toward capacity building and collaboration among HIC and LMIC surgeons, understanding the best manner to teach local surgeons warrants further investigation.

With a large unmet burden of surgical disease, specifically in LMICs, training of local surgeons is essential. However, the education of local surgeons should be performed in a way that is most beneficial for the specific surgeon learner. Therefore, to better understand the benefits and areas of improvement of visiting educator trips, we conducted qualitative interviews of surgeon learners during a hand surgery visiting educator trip in Vietnam. We aimed to understand the experiences of local surgeons to better inform the teaching during future visiting educator trips.

METHODS

Participant Selection

We selected learners on a surgical outreach trip performed by ReSurge International from July 21, 2019, to July 26, 2019, for inclusion in this study. ReSurge International was founded in 1969 and provides plastic and reconstructive surgical procedures in various LMICs.³ The visiting educator trips performed by ReSurge International focus on educating subspecialty surgeons in plastic and hand surgery procedures during surgical outreach trips. The Visiting Educator Model includes an assessment of pre-trip needs to garner information regarding the surgical skills of the participants, gaps in their surgical training, topics pertinent to specific surgical conditions of interest, and the capacity of the surgical workforce at each specific site. Based on this assessment, relevant curriculum is developed tailored to learners' needs. Education during visiting educator trips consists primarily of didactic lectures and hands-on patient preoperative evaluation, surgical techniques, and postoperative management.³ During the week-long trip, surgeon learners are invited and encouraged to partake in every aspect of the curriculum. Each day consists of patient evaluation in the

clinic, bedside teaching, formal teaching through didactic lectures, and surgical cases related to topics previously discussed. Patient evaluation in the clinic with the visiting educator and surgeon learners dictated which operative cases were going to be performed during the trip, which primarily focused on congenital hand surgery. We required that all surgeon learners included in our study be involved in hand or plastic surgical care. We surveyed and interviewed all participants on the visiting educator trip. Participants included postgraduate-level trainees and attending level surgeons. The sites of this trip, Thai Nguyen Orthopedic and Rehabilitation Hospital and The Central General Hospital, were established through the ReSurge International Visiting Educator Program, where visiting educators participate at least annually in teaching. Three teaching days were spent at each site. This study was approved by University of Michigan's Institutional Review Board (HUM157128).

Survey

Each participant was provided a survey in Vietnamese and English. The survey captured basic demographic information and surgical training data, including age, sex, years of practice, previous participation in surgical outreach, and years of experience with hand surgical procedures (see pdf, **Supplemental Digital Content 1**, which displays the survey used, <http://links.lww.com/PRSGO/B434>). Finally, each participant rated the availability of resources in their practice using a Likert scale from 1 to 5 (1—not at all available, 2—slightly available, 3—moderately available, 4—very available, and 5—extremely available). Items collected included availability of postoperative supplies, surgical supplies, clinical workspace, operating room space, surgical staff, surgical textbooks, recent literature on surgical techniques, and surgical educators. We selected basic demographic information and surgical experience to provide background information on our surgeon learners, whereas items assessed for availability were selected owing to their direct impact on education and operative care. The survey responses were translated into English, and responses were recorded. The quantitative survey data were stored and analyzed using “Microsoft Excel.”

Qualitative Interviews

Interviews were performed at Thai Nguyen Orthopedic and Rehabilitation Hospital and The Central General Hospital. All interviews were conducted with an interviewer, the surgeon learner, and a translator. The interviews were conducted by an independent assessor (W.H.J.C.) who was trained in interview techniques, who was brought to accompany this trip specifically to conduct the interviews, and who did not participate in the care of the patients. The interview guide was developed to assess education using the first 3 principles of the AO Foundation's principles of surgical education development (see figure, **Supplemental Digital Content 2**, which displays AO Learning Principles; yellow indicates the first 3 principles that were incorporated into the interview guide, <http://links.lww.com/PRSGO/B435>)⁴; this

semistructured interview guide was used to facilitate discussion and to ensure the same topics were discussed in all the interviews (see pdf, Supplemental Digital Content 3, which displays the interview guide, <http://links.lww.com/PRSGO/B436>).

The translator helped facilitate communication between the interviewer and the surgeon when language barrier was a problem. The interviews were conducted in Vietnamese, audio recorded, translated into English (K.A.H.), and transcribed in English.

Data Analysis

We used thematic analyses to identify educational preferences of surgeons and their opinions about surgical outreach education. A thematic analysis is a method to conceptualize data gathered during qualitative interviews by organizing the various data into common themes.⁵⁻⁷ The interviews were first open coded by 2 separate authors (J.I.B. and J.S.N.) to identify major themes in the interview, and a codebook was developed. After open coding was completed, the major themes were discussed and consensus on the selected themes was established. Any newly identified themes were included in the codebook. Each interview was then coded more specifically by 2 separate authors (J.I.B. and J.S.N.) using the themes established during open coding. Discrepancies were resolved by collaborative discussion. The analysis was performed using NVivo 12 (QSR International Pty Ltd, Burlington, Mass.), a qualitative research software. We followed the Standards for Reporting Qualitative Research reporting guidelines.⁸ Standards for Reporting Qualitative Research was developed in 2014 and has been recognized by the Enhancing the Quality and Transparency of Health Research Network to standardize and improve the reporting quality of all qualitative research.⁹

RESULTS

Survey

We recruited all surgeons on the visiting educator trip, consisting of a total of 18 surgeon learners agreeing to participate in our study. Of the participants, 15 (83%) were males, and 3 (17%) were females. The average age of the participants was 40 years (SD, 11 years), with a median of 11 years of surgical experience (interquartile range, 3–32 years). However, participants only had a median of 3 years of hand surgical experience (interquartile range, 1–25 years). The majority (72%) of surgeon learners had participated in previous surgical outreach trips as a learner (Table 1).

Table 2 illustrates the responses of a survey describing the availability of resources in the participants' practices. On average, clinical workspace and postoperative supplies were moderately available to very available (average score range, 3.6–3.9). However, surgical educators, recent literature on surgical techniques, and surgical techniques were slightly available to moderately available (average score range, 2.3–2.8).

Table 1. Demographic Characteristics of Surgeon Learner Participants during Visiting Educator Trip (N = 18)

Characteristics	N (%)
Gender	
Male	15 (83%)
Female	3 (17%)
Average age (SD)	40 (11)
Average years of practice (SD)	12 (10)
Average years of hand surgery practice (SD)	7 (7)
Participated in previous visiting educator trip	
Yes	13 (72%)
No	5 (28%)

Table 2. Average Availability of Resources in Each Participant's Practice*

Resources	Average Score (SD)
Postoperative care supplies	3.6 (0.8)
Surgical supplies	3.1 (0.5)
Clinical workspace	3.9 (0.7)
Surgical space	3.7 (1.0)
Surgical staff	3.7 (0.6)
Surgical textbooks	2.8 (1.1)
Recent literature on surgical techniques	2.3 (1.2)
Surgical educators	2.8 (1.2)

*Likert scale from 1 to 5 was used (1—not at all available, 2—slightly available, 3—moderately available, 4—very available, and 5—extremely available).

Themes and Conceptual Model

Three themes emerged through team consensus related to the perceptions of surgical outreach education, which were mitigated by the current educational surgical training in Vietnam.

1. Value of surgical outreach education: Participants noted the importance of surgical outreach education to aid in understanding the entire trajectory of surgical care and combining surgical theory and practice.
2. Barriers to education during surgical outreach: Despite the benefits of surgical education, participants described substantial impediments to education during visiting educator trips, including lack of translated resources, rudimentary translator services, and wanting a deeper educational focus.
3. Substantive improvements: Participants discussed desire to form long-lasting, sustainable partnerships.

We developed a conceptual model to illustrate the experiences of surgeon learners captured in this qualitative study (Fig. 1). Surgical outreach was described as an experience used to fill the gaps inherent in the subspecialty surgical education in Vietnam. Preferences for surgical education were discussed, all of which were described as potentially overcoming the current pitfalls of surgical outreach education.

Value of Surgical Outreach Education

Surgical outreach, specifically surgical outreach education, was perceived unanimously as beneficial. Visiting educator trips filled gaps in traditional Vietnamese surgical training. Participants explained that Vietnamese surgical training often lacked surgical subspecialty training specifically in trauma, burn reconstruction, and congenital hand

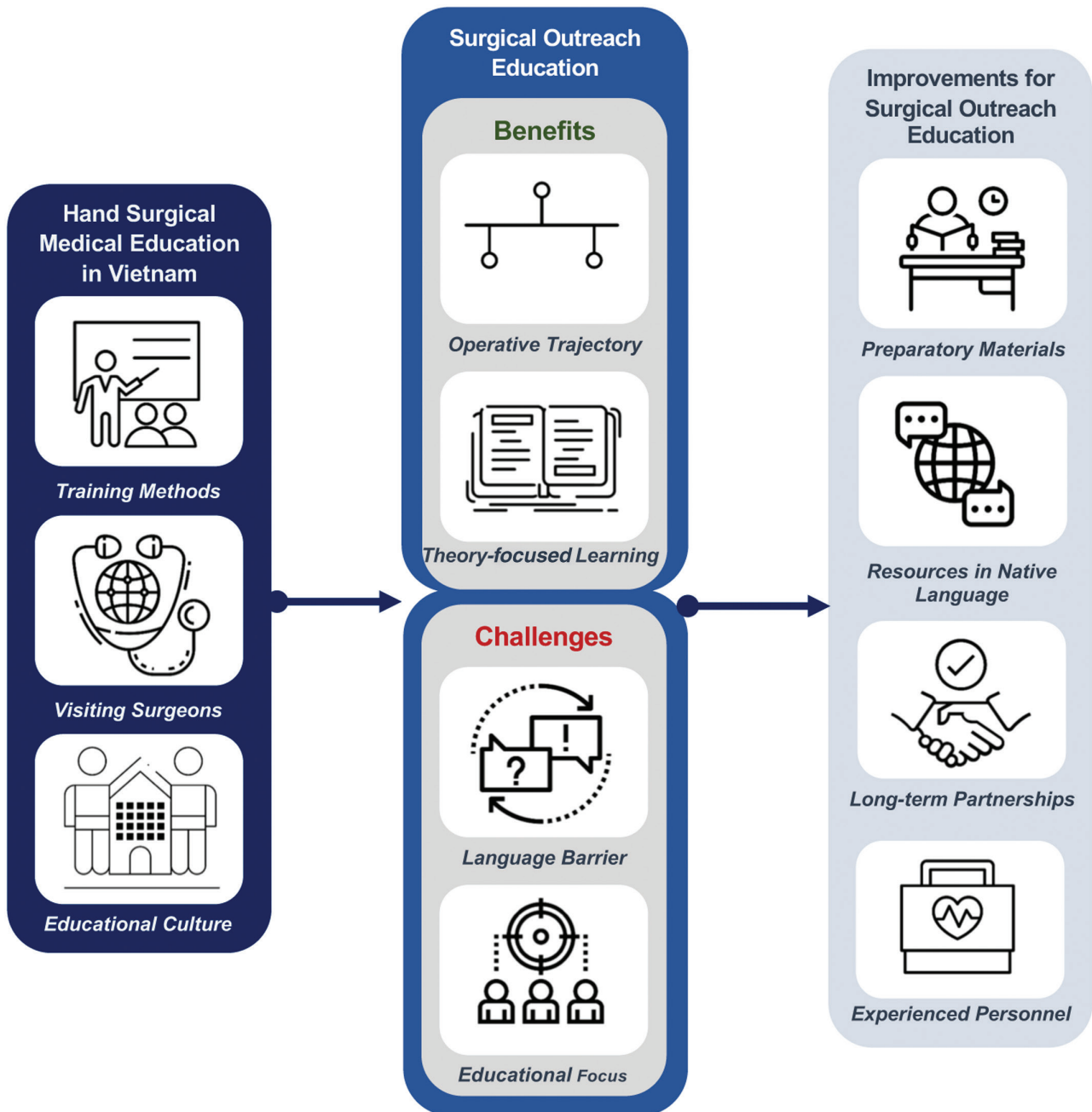


Fig. 1. Conceptual model.

defects and required additional Master’s level education. Vietnamese training was devoid of formal educational lectures or structured curriculum. However, they discussed the presence of teaching during the surgical cases with a wide range of educational styles from free-form discussion in the operating room to teaching only through questions. Moreover, the participants described the surgical outreach educational programs as the only way for them to experience more formal educational lectures and surgical courses. The culture of Vietnamese surgical learning was described as inconsistent: one participant explained that the “older generation [teach] the younger generation”

and others explained that they had “teachers that do not share a lot.” Surgeon learners expressed that learning from surgeons who were not willing to share freely or created a closed learning environment remained an obstacle to receiving the best surgical education.

Participants described that surgical outreach education enriched their education through understanding the entire trajectory of surgery and incorporating theory with surgical practice. They found surgical decision-making valuable, specifically preoperative patient assessment (Table 3). Participants believed understanding surgical follow-up care during these trips could help them better

Table 3. Value in Surgical Outreach Education

Quote
Operative trajectory “Like we have a visiting educator to teach them [other surgeons] from the beginning of the process, like choosing [patients] and then operating.” (2) “Education for young surgeons should be direct like these [visiting educator] trips with patient assessment, lectures, and treatment.” (4) “I think the [visiting educator] trips are helpful because I can see the doctor assess the patient in clinic... and communicate with the patient... I need to understand the patient as well.” (16)
Theory-focused learning “Well currently, I think a method similar to [visiting educator] is good... with 1 on 1 teaching, I can ask questions.” (14) “A combination of theory and practice. There is nothing like how [visiting educator] teaches. There are many rare cases here and we get to see how [visiting educator] practice[s]. Then [visiting educator] lectures us on it. It is very practical.” (1) “Yes both [theory and practice]. We need to learn why we do things and then the technique.” (15)
Educational theory “A combination of theory and practice. There is nothing like how [visiting educator] teaches. There are many rare cases here and we get to see how [visiting educator] practices. Then [visiting educator] lectures us on it. It is very practical.” (1) “We need to learn why we do things and the technique... Important to understand information deeper.” (3)

manage their own surgical patients. Additionally, the theory-focused learning style provided through the surgical outreach education was perceived as beneficial and “practical.” Participants explained wanting to understand the rationale behind surgical decision-making for specific surgical hand conditions. Visiting educator trips provided valuable surgical subspecialty skills for Vietnamese surgeon learners.

Barriers to Education during Surgical Outreach

Despite the benefits of surgical outreach education, specific impediments to learning were discussed: language barrier, rudimentary translator services, and lack of educational focus during the trips (Table 4). The majority of participants explained that the language barrier was present through communication with the visiting surgeons. Additionally, they described rudimentary translator services with a desire for additional translators with more specialized medical backgrounds. Moreover, they described the same challenge seeking medical resources in the literature because of the English predominance and cost. One surgeon learner explained “Vietnamese articles are not good compared to international ones. International ones need to be bought, so it’s expensive.”

The surgeon learners described the challenge associated with the current educational focus of visiting educator trips. Participants expressed a desire to focus on

Table 4. Barriers to Education during Visiting Educator Trips

Quote
Language barrier “International partnership is very limited. Its cost and also English. Sometimes we have groups come visit, we communicate in English, but the communication ends after that and we do not practice English. It is not continuous.” (10) “...the most difficult thing about learning is my English proficiency is limited.” (17) “[Asked about ways to improve learning at institution] For me, to improve English in general” (18)
Translator “We need to learn during surgery with a translator, so more physicians who do not know English well can learn and absorb the information.” (8) “Currently, the technique is ok and understandable. If we studied abroad, we can speak English and practice. The most important is English proficiency. If the teacher is visiting, it is important to have a translator that is good and specialized so that they can translate more exact. The translation would be better.” (17)
Educational focus “It’s my ideas about technical surgery. At first, I need to study about it and then decide how we can do it with guidance. Yeah, that’s a problem, we need guidance.” (2) “But not in depth [specific surgical topic]...I want to understand more to better understand technique.” “It would be helpful if every year we concentrate into a few or one category of disease to learn everything in depth so we would see similar patients over and over and see them again next year for follow-up. It would be helpful so we are not seeing a large load of patients right now because it is very scattered.” (1) “With every trip, we need one to two main disease categories.” (8)

learning a topic in depth rather than breadth (Table 4). One participant suggested “with every trip, we need one to two main disease categories.” Additionally, through seeing “similar patients over and over again,” surgeon learners believed they would better understand the surgical disease.

Substantive Improvements

The surgeon learners expressed a variety of preferences for improving future surgical outreach education efforts (Table 5). The majority of participants explained that they would prefer to have “materials to be sent before the arrival” to help improve the impact of the education provided during the surgical trip. Furthermore, the majority of participants explained how the materials could be more beneficial if they were in their native language. For example, one surgeon learner stated that the best preparation for an international doctor visit is, “preparation materials in Vietnamese [native language].”

The surgeon learners expressed a desire to establish long-term partnerships with international institutions to promote surgical education and improve capacity. One participant described the potential for long-term

Table 5. Improvements in Surgical Outreach Education

Quote
Preparatory materials
“It would be important to know...exactly what the doctor will be teaching. For surgical skills, it would be helpful to have lectures so we can review. This way would be better.” (8)
“I find it difficult to watch videos without reading the textbook because you cannot fully understand everything. But I usually watch videos after a case to review. I need to read textbook in addition to videos.” (16)
“Yes, preparation is really important. We need to be involved in the program, what the program is trying to do, the specialty of the physician, such as hand surgery for this. We need to be prepared. Secondly, the lectures and materials should be given to us so we can prepare.” (13)
“We want materials to be sent before the arrival.” (9)
Resources
“However, we need reading material, better in Vietnamese. Specifically, newly published materials on surgical technique.” (11)
“Because a lot of the resources for medicine are in English, there are many techniques and theory and discussion on how to perform surgery.” (2)
“...sometimes I can use native text but sometimes I need to review international text. It is hard to find.” (1)
“Here in Vietnam, resources are ok. However, Vietnamese articles are not good compared to international ones. International ones need to be bought, so it’s expensive.” (2)
Long-term partnerships
“We want to develop an international partnership and really want to learn from him [visiting educator]... He [visiting educator] wants to improve the program, so it can be more effective.” (1)
“[visiting educator] is here for a short time, short period. There is a limited chance to learn more.” (18)
“It would be helpful if we could get his e-mail address and communicate more via e-mail or Facebook.” (4)
“So to establish one of those [long-term educational partnerships]... it needs to be frequent. That allows us to evaluate and judge the program.” (3)
“International partnership is very limited... its cost... we have groups come visit... but it is not continuous.” (1)
Experienced personnel
“Generally, new techniques or techniques that are not well studied here in Vietnam. So if the international doctors are experts, it would be beneficial... For surgical skills, it would be helpful to have lectures that we can review. This would be much better.” (8)
“We should select very capable, and good surgeons. There is limited time.” (5)

partnership as “more effective.” Additionally, long-term partnerships could lead to program improvements through continual evaluation. However, one participant discussed that “international partnership is very limited.” They suggested continued communication through

social media platforms or email once the trip ended to assist with challenging cases or difficult complications. Finally, surgeon learners expressed the desire to learn from more experienced visiting surgeons because they felt that experienced surgeons could offer “new techniques.”

DISCUSSION

In this qualitative study of surgeon learners during a visiting educator trip in Vietnam, we found that surgical outreach education fills important gaps in surgical education. Despite these benefits, this study highlights the educational challenges during these trips including the language barrier and provides important improvements for surgical outreach education. Although visiting educator trips aim to support sustainable global surgery, participants desired more long-term relationships among the visiting educators and surgeon learners to promote capacity building and future collaboration.

Local Vietnamese surgeon learners felt that visiting educator trips provided a valuable educational experience. Visiting educator trips are built upon the traditional surgical outreach model, but through education, these trips aim to transition surgical care to local providers. For traditional surgical outreach trips, debate exists regarding the impact and possible negative consequences of these trips from the in-country perspective. For example, there have been concerns that local operations are postponed to accommodate surgical outreach activities.¹⁰ Moreover, local surgeons commonly desire continuing medical education to provide for the needs of their communities.¹¹ In response, there has been a transformation from short-term surgical outreach focusing on high-throughput surgery to trips based in education.¹² Our findings reveal that visiting educator trips provide unique educational opportunities for surgeon learners. Local surgeon learners had the opportunity to participate in the entire trajectory of surgery from preoperative patient evaluation, surgical versus nonoperative management, surgical techniques, and anticipation and prevention of complications. Additionally, visiting educator trips incorporated theory and didactic lectures with hands-on technical teaching, which participants found especially useful for their own surgical practices.

While most of our participants expressed “slight” to “moderate” availability of surgical educational resources, interviews revealed that the resources available are outdated, low quality, or in their non-native language. Despite the benefits of these educational trips, participants provided key improvements, including increased access to language concordant resources. The open access movement in research has permitted policymakers, learners, researchers, and other stakeholders in LMICs to access scholarly articles without a price.¹³ This movement has been instrumental in the translation of knowledge into practice and policy.¹⁴ Additionally, the World Health Organization initiated the Health Internet Access to Research Initiative in collaboration with specific journal publishers to provide improved access to resources

in low-income countries free of charge.¹⁵ However, open access articles are often provided in English only, continuing the language barrier and gaps in knowledge. To overcome the language barrier, some journals have begun to provide abstracts in various languages,¹⁶ but this practice is not universally accepted. Technology has the potential to resolve some challenges owing to the language barrier, such as translating the video to a different language. However, translation services are costly, not readily available to learners from LMICs, and reliability has not been evaluated.¹⁷ Further investigation to validate the quality of translational services as well as fund these resources for learners in LMICs can reduce the language barrier and improve availability of educational resources. Our study corroborates these findings with participants describing the expense associated with the acquisition of resources and the desire for resources in Vietnamese. During these trips, visiting educators are provided with the unique opportunity to disseminate recent research as well as demonstrate and explain difficult concepts. Although this might not be in a language concordant manner, the active discussion and open dialogue between the visiting professor and surgeon learners facilitate the opportunity to further understand and improve the quality of teaching.

The desire to learn did not end with the cessation of the trip: participants wanted long-term surgical collaboration. Despite the longitudinal nature of these visiting educator trips, participants discussed the desire for continuing contact with the visiting educator via email or social media when the trip ended for clinical mentorship with assistance for challenging cases or complications. Bidirectional partnerships between specific institutions and organizations in LMICs and HICs permit more sustainable global surgery where both parties mutually benefit from collaboration. For example, the W.C. Swanson Family Foundation has worked with the Health Sciences University of Mongolia to disseminate laparoscopic surgery in Mongolia.¹⁸ This partnership was developed on a foundation of mutual trust and included capacity-building programs through adapting instruments and training to a resource-limited setting and promoting independent growth within the local communities.^{18,19} More broad partnerships have been established between the Royal College of Surgeons in Ireland and the College of Surgeons of East, Central, and South Africa to develop and implement a “Train the Trainer” surgical skills courses, modules to advance surgeon-scientists, and online surgical training curriculum.^{20,21} These permanent partnerships provide sustainable solutions to deliver surgical care worldwide. In this qualitative study, Vietnamese surgeon learners aspired for more frequent visits for in-depth learning from the visiting educator. Moreover, frequent visiting could enable opportunities to evaluate and improve the educational program. In addition, the bidirectional relationship between learners and visiting surgical educators can be cultivated and deepened through educational webinars or virtual discussion boards outside of outreach trips.²² Long-term partnerships should be a priority to help establish more permanent subspecialty surgical education in LMICs.

This study has several limitations. Our data rely on participants being completely transparent with the interviewer. The interviewer was a member of the visiting educator team, which may influence the ability of the participants to freely speak about the challenges with surgical outreach education. Moreover, participants may be inclined to provide positive feedback on the visiting educator trips, potentially creating bias in our study. We attempted to minimize this bias through an independent interviewer who did not participate in the care of the patients. Despite this limitation, we found specific applicable areas for improvement. However, a standardized evaluation of the learning structure and consistency may help improve visiting educator trips. Additionally, there are cultural barriers that exist, which could lead to misinterpretation of specific comments. Our results are not generalizable to other populations. However, the goal of qualitative research is for theory building and formulation of future research questions, and generalizability is not expected.²³ Moreover, this study demonstrates the feasibility and usefulness of ongoing qualitative research to improve educational opportunities in LMICs.

Reduction of barriers hindering the quality of education on surgical educator trips are critical in building surgical capacity and in combating the surgical workforce shortage in LMICs. Our study illustrates the benefits and challenges of surgical outreach education. Participation in visiting educator trips provided important educational areas that filled specific gaps in Vietnamese surgical education. However, the language barrier, paucity of translated resources, and rudimentary translator services disrupted the learning environment. Pragmatic items such as providing translated resources before the trips and increasing the availability and quality of translation services may help improve the overall education. Finally, participants desired more long-term partnership to promote bidirectional collaboration. Surgical organizations should strive to establish sustainable partnerships to improve surgical education in LMICs.

Kevin C. Chung, MD, MS

Section of Plastic Surgery

Michigan Medicine

2130 Taubman Center

SPC 5340

1500 E. Medical Center Drive

Ann Arbor, MI 48109

E-mail: kccchung@med.umich.edu

ACKNOWLEDGMENTS

The authors thank Resurge International and Dr. James Chang for supporting our trips; they also appreciate the support of ReSurge International in facilitating our volunteer trip to Vietnam. The authors also thank the surgeons from Thai Nguyen Orthopedic and Rehabilitation Hospital and The Central General Hospital for participating in the interviews.

REFERENCES

1. Meara JG, Leather AJ, Hagander L, et al. Global Surgery 2030: evidence and solutions for achieving health, welfare, and economic development. *Lancet*. 2015;386:569–624.

2. Holmer H, Lantz A, Kunjumen T, et al. Global distribution of surgeons, anaesthesiologists, and obstetricians. *Lancet Glob Health*. 2015;3(suppl 2):S9–S11.
3. Sue GR, Covington WC, Chang J. The ReSurge global training program: a model for surgical training and capacity building in global reconstructive surgery. *Ann Plast Surg*. 2018;81:250–256.
4. AO Foundation. The AO Curriculum Development Process. Available at <https://www.aofoundation.org/what-we-do/education/topic-areas/curriculum-development/the-ao-curriculum-development-process>. Accessed October 28, 2019.
5. Vaismoradi M, Jones J, Turunen H, et al. Theme development in qualitative content analysis and thematic analysis. *J Nursing Educ Pract*. 2016;6:100–110.
6. Braun V, Clarke V, Hayfield N, et al. Thematic analysis. In: Liamputtong P (ed.), *Handbook of Research Methods in Health Social Sciences*. Singapore: Springer; 2019:843–860.
7. Aronson J. A pragmatic view of thematic analysis. *Qualitative Rep*. 1995;2:1–3.
8. O'Brien BC, Harris IB, Beckman TJ, et al. Standards for reporting qualitative research: a synthesis of recommendations. *Acad Med*. 2014;89:1245–1251.
9. EQUATOR Network. Standards for reporting qualitative research: a synthesis of recommendations. Available at <https://www.equator-network.org/reporting-guidelines/srqr/>. Accessed May 6, 2020.
10. Ginwalla R, Rickard J. Surgical missions: the view from the other side. *JAMA Surg*. 2015;150:289–290.
11. McDow AD, Salman SO, Abughazaleh KM, et al. Improving surgical outreach in Palestine: assessing goals of local and visiting surgeons. *J Surg Res*. 2019;233:139–143.
12. Selim NM. Teaching the teacher: an ethical model for international surgical missions. *Bull Am Coll Surg*. 2014;99:17–23.
13. Smith E, Haustein S, Mongeon P, et al. Knowledge sharing in global health research—the impact, uptake and cost of open access to scholarly literature. *Health Res Policy Syst*. 2017;15:73.
14. Chan L, Arunachalam S, Kirsop B. Open access: a giant leap towards bridging health inequities. *Bull World Health Organ*. 2009;87:631–635.
15. World Health Organization. HINARI Access to Research for Health programme. 2017. Available at <http://www.who.int/hinari/en/>. Accessed November 5, 2019.
16. Fung IC. Open access for the non-English-speaking world: overcoming the language barrier. *Emerg Themes Epidemiol*. 2008;5:1.
17. ITC Translations. Surgical procedures translation services. Available at <https://www.itcglobaltranslations.com/industries/medical-health-translation-services/surgical-procedures-translation/>. Accessed May 6, 2020.
18. Price R, Sergelen O, Unursaikhan C. Improving surgical care in Mongolia: a model for sustainable development. *World J Surg*. 2013;37:1492–1499.
19. Wells KM, Lee YJ, Erdene S, et al. Building operative care capacity in a resource limited setting: the Mongolian model of the expansion of sustainable laparoscopic cholecystectomy. *Surgery*. 2016;160:509–517.
20. Ng-Kamstra JS, Greenberg SLM, Abdullah F, et al. Global Surgery 2030: a roadmap for high income country actors. *BMJ Glob Health*. 2016;1:e000011.
21. RCSI-COSECSEA Collaboration Programme. Available at <http://www.cosecsa.org/about/who-we-are/cosecsa-partners/royal-college-surgeons-ireland>. Accessed October 28, 2019.
22. Cameron BH, Schofield S. E-learning in global surgery. In: Park A, Price R (eds.), *Global Surgery*. Cham, Switzerland: Springer; 2017:127–144.
23. Leung L. Validity, reliability, and generalizability in qualitative research. *J Family Med Prim Care*. 2015;4:324–327.