

Development of an Online Learning Module on Gastroenterology Issues in Global Health

Tiange Philip Zhang¹, Amy R. Blair^{2,3}, William Adams⁴, Theresa Nguyen^{3,5}, Kevin P. Boblick^{1,3}, Cara Joyce⁴, Jennifer Rogers³, Ayokunle T. Abegunde⁶
 1.Department of Medicine, Loyola University Medical Center; 2.Department of Family Medicine, Loyola University Medical Center; 3.Loyola University Chicago Stritch School of Medicine, Center for Community & Global Health; 4.Loyola University Chicago Public Health Sciences; 5.Department of Emergency Medicine, Loyola University Medical Center; 6.Division of Gastroenterology, Loyola University Medical Center, Maywood, IL, USA.

Introduction

- Global health (GH) education is expanding and 23.1% of U.S. medical students acquire international health experience prior to postgraduate training.¹
- Digestive diseases carry a high global burden; however, few GH programs and professional societies consider the inclusion of gastroenterology into their standard curriculum.^{2,3}
- Travel restrictions during the COVID-19 pandemic have brought traditional GH rotations to a halt and spurred a need for new educational approaches.⁴

Specific Aims

- To assess attitudes and self-reported preparedness with regards to gastroenterology issues in GH among medical students undertaking GH elective.
- To develop a comprehensive online learning module on gastroenterology issues in GH for medical students undertaking GH electives.

Methods

- A team of faculty and residents was convened between the Center for Community and Global Health and the Division of Gastroenterology.
- GH curricula across institutions and core competencies across professional societies were examined via literature review.^{2,3,5,6,7}
- A survey was conducted among 2nd (MS2) and 3rd year medical students (MS3) interested in GH to assess attitudes toward GI-related issues in GH curriculum.
- An online learning module was developed consisting of ten, video-based lessons each addressing specific GH competencies (Figure 1).

Results

Learning Module Lessons	CUGH Global Health Competencies - 11 Domains, (Domain #)	ASTMH Clinical Competencies - 7 Domains, (Domain #)
1. Global burden of gastrointestinal illnesses	Global Burden of Disease (1), Globalization of Health and Health Care (2)	Public Health in the Tropics (6)
2. Infectious disorders of the GI tract	Professional Practice (7)	Pathology of Infectious Diseases (1), Management of Infectious Diseases (2)
3. Viral hepatitis	Professional Practice (7)	Pathology of Infectious Diseases (1), Management of Infectious Diseases (2)
4. Abdominal pain in global health context	Professional Practice (7)	Approach to Clinical Syndromes (4)
5. ABC of GI resuscitation	Professional Practice (7)	Noninfectious Diseases (3)
6. Diarrhea	Professional Practice (7)	Approach to Clinical Syndromes (4)
7. H. pylori, GERD, peptic ulcer disease	Professional Practice (7)	Approach to Clinical Syndromes (4)
8. Gastrointestinal bleeding	Professional Practice (7)	Noninfectious Diseases (3)
9. GI cancer, pancreatic/hepatobiliary disease, and great imitators	Professional Practice (7)	Noninfectious Diseases (3), Approach to Clinical Syndromes (4)
10. Complementary and alternative medicine in global health context	Social and Environmental Determinants of Health (3), Collaboration, Partnering, and Communication (5), Ethics (6)	Traveler's Health (5)

Figure 1. Alignment of CUGH global health competencies* and ASTMH clinical competencies with module lessons**

*Consortium of Universities for Global Health Competency Domains 1-11, Jogerst et al. "Identifying interprofessional global health competencies for 21st-century health professionals." *Annals of global health* vol. 81,2 (2015). **American Society of Tropical Medicine & Hygiene, Certificate of Knowledge in Clinical Tropical Medicine and Travelers' Health Domains 1-7 (CTropMed® Examination).

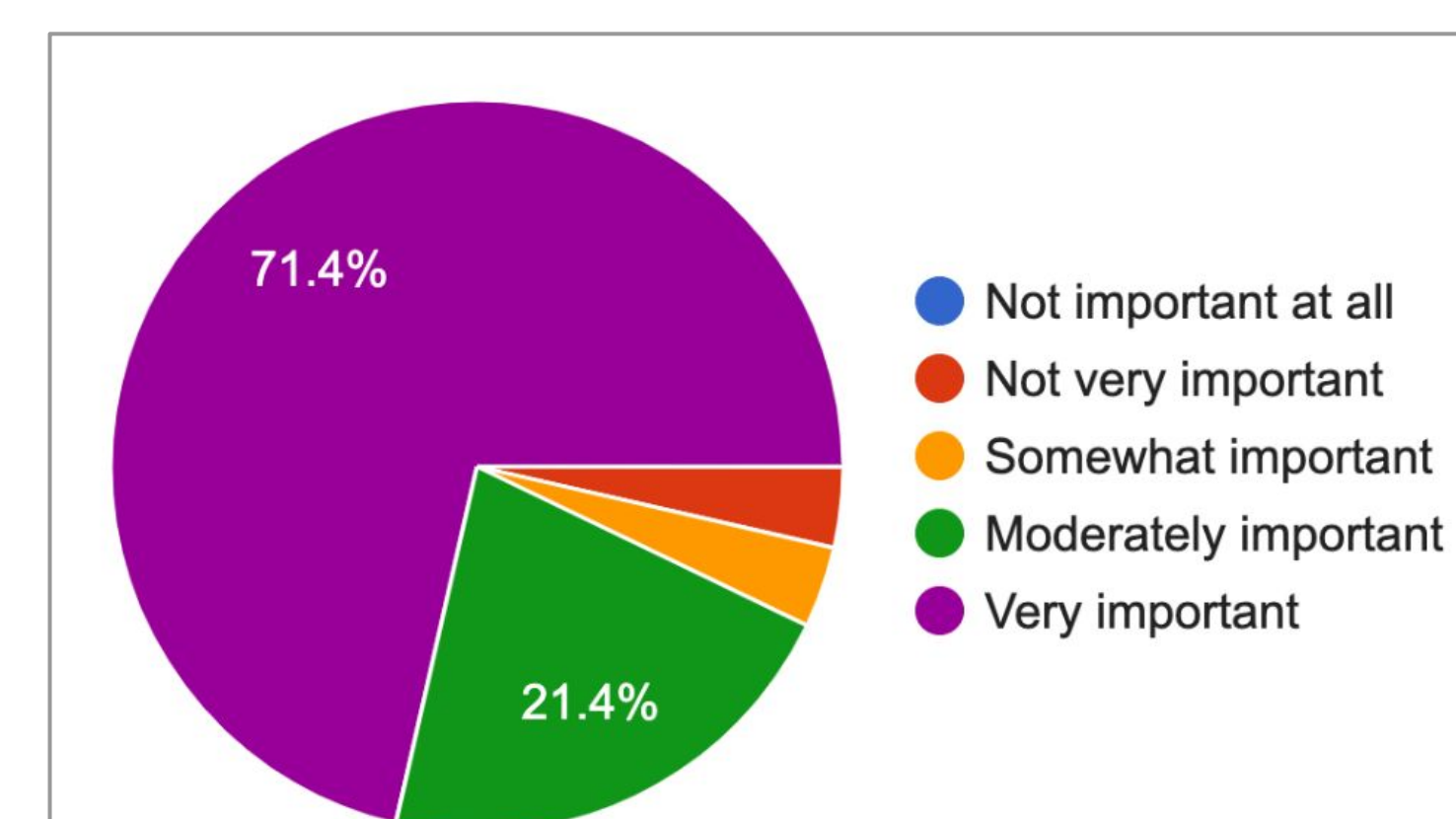


Figure 2. Perceived importance of GI lessons in a global health curriculum (N=28)

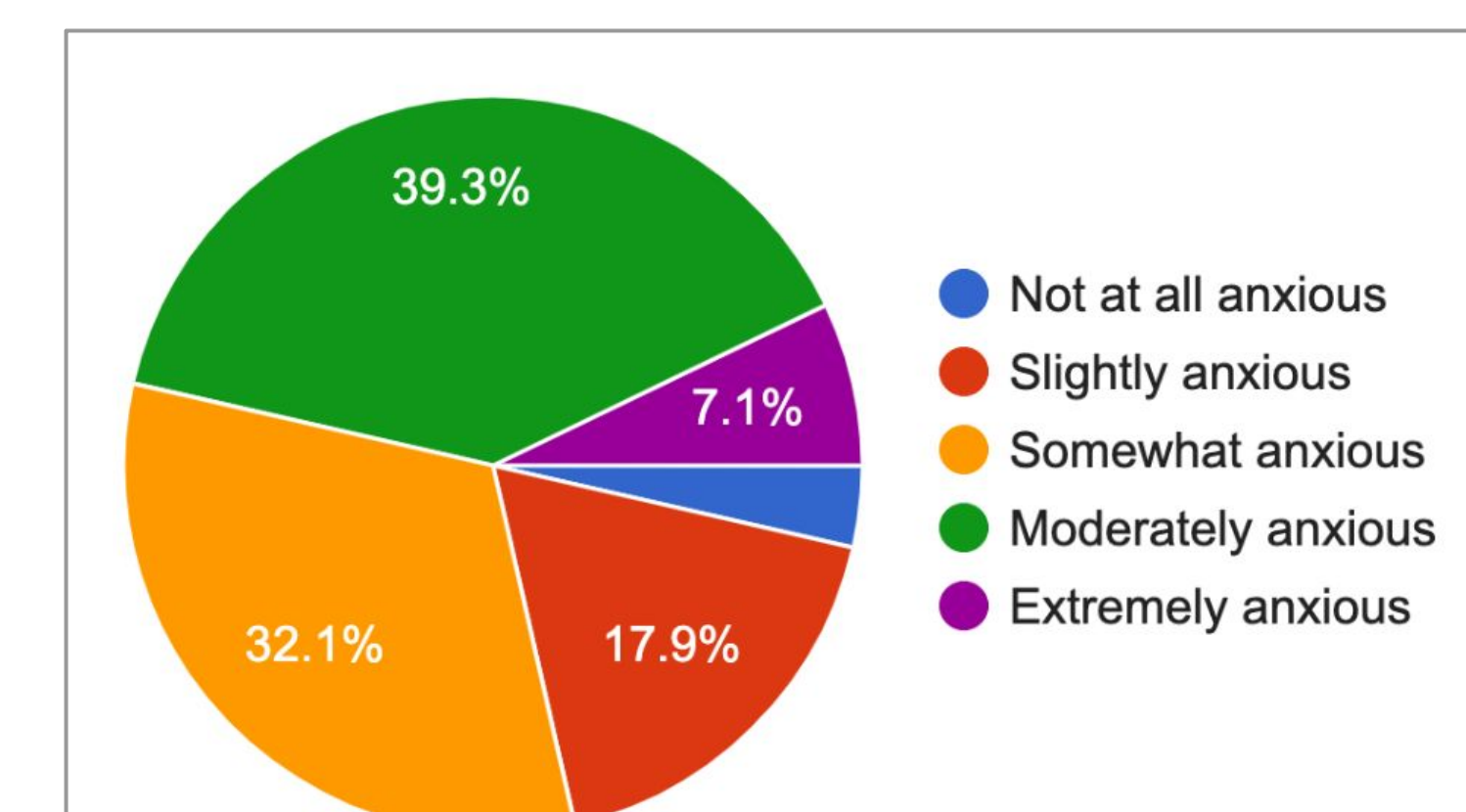


Figure 3. Anxiety level about managing GI conditions during global health elective (N=28)

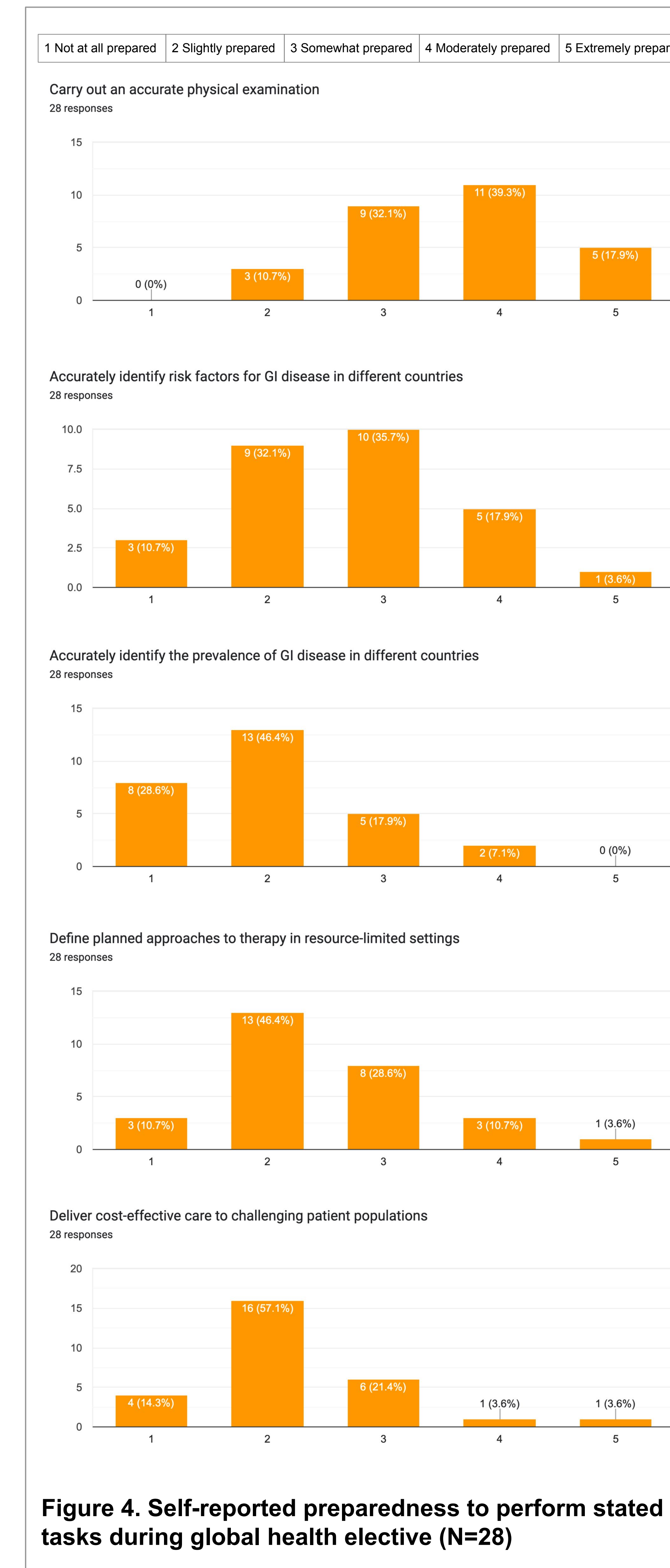


Figure 4. Self-reported preparedness to perform stated tasks during global health elective (N=28)

Results (cont.)

- 41% (28/69) of MS2 and MS3 interested in GH responded to the survey, with a similar distribution of MS2 (13/28) and MS3 (15/28).
- Nearly all (92.8%) reported that learning GI conditions in a GH curriculum is moderately or very important. (Figure 2)
- A majority (78.5%) also reported feeling at least somewhat anxious or more about managing GI conditions during GH electives. (Figure 3)
- Few medical students reported feeling moderately or extremely prepared to identify risk factors for GI conditions in different settings (21.5%) and to define approaches to therapy in resource-limited settings (14.3%). (Figure 4)
- A majority (71.4%) reported feeling not at all prepared or slightly prepared to deliver cost-effective care to challenging populations. (Figure 4)

Discussion and Future Work

- Our study demonstrated an unmet need for GI-related training and cost-conscious care in the GH curriculum.
- Developing an online learning module on GI conditions to supplement GH curriculum may be useful and feasible.
- A randomized controlled trial is underway to examine the effect of this online learning module on medical student knowledge and preparedness to address GI conditions in GH electives.

References

- Jeffrey J, Dumont RA, Kim GY, Kuo T. Effects of international health electives on medical student learning and career choice: results of a systematic literature review. *Fam Med*. 2011 Jan;43(1):21-8.
- Jogerst K, Callender B, Adams V, Evert J, Fields E, Hall T, Olsen J, Rowthorn V, Rudy S, Shen J, Simon L, Torres H, Velji A, Wilson LL. Identifying interprofessional global health competencies for 21st-century health professionals. *Ann Glob Health*. 2015 Mar-Apr;81(2):239-47.
- Ablah E, Biberman DA, Weist EM, Buekens P, Bentley ME, Burke D, Finnegan JR Jr, Flahault A, Frenk J, Gotsch AR, Klag MJ, Rodriguez Lopez MH, Nasca P, Shortell S, Spencer HC. Improving global health education: development of a Global Health Competency Model. *Am J Trop Med Hyg*. 2014 Mar;90(3):560-5.
- Galvin S, Neubauer LC, Leonard WR, Doobay-Persaud A. Reassessing Global Health Education in the Age of COVID-19. *Acad Med*. 2021 May 1;96(5):e20.
- Sanford CA, Pottlinger PS. Travel and Adventure Medicine Resources. *Med Clin North Am*. 2016 Mar;100(2):411-6.
- White MT, Satterfield CA, Blackard JT. Essential competencies in global health research for medical trainees: A narrative review. *Med Teach*. 2017 Sep;39(9):945-953.
- Sawleshwarkar S, Negin J. A Review of Global Health Competencies for Postgraduate Public Health Education. *Front Public Health*. 2017 Mar 20;5:46.