

Strengthening a global health elective with narrative medicine: the effect on cultural competence in medical students and internal medicine residents at Columbia

1. Study purpose and rationale

In recent years, there has been growing recognition of the importance of global health experiences to physicians in training. In addition, global health electives have become increasingly popular: according to the Medical School Graduate Questionnaire, the number of medical students reporting participation in global health activities increased from 15% in 1998 to 30% in 2006¹. There exists a small but growing body of literature on the benefits that these experiences provide to those who participate, including improved cultural competence^{2,3,4}, patient-physician communication⁵, and awareness of public health and health systems⁶. Currently at Columbia, we have a newly established relationship between the Internal Medicine Residency program and a global health elective at a rural, public teaching hospital in Edendale, South Africa. As a result, we are in a unique position to create a strong global health education curriculum. This curriculum will include a strong component of clinical medicine, but there is also the potential for profound non-clinical learning. The experience of practicing medicine in a resource-limited setting raises important questions about our role as visitors and our capacity to give back to those with whom we interact while abroad. In this vein, there is substantial overlap between the goals of global health medical education and the field of narrative medicine which aims to strengthen the educational experience through writing and structured reflection.⁷ At Columbia, we are also uniquely positioned to explore these arenas together given the strong presence of Narrative Medicine faculty at the medical school.

Past research on the benefits of global health electives for medical students and residents has been predominantly retrospective studies that attempt to identify general themes in the experiences of those who participate. In one retrospective study of 30 medical students from the University of Buffalo, the students were asked to report on their perception of the effect of the

¹ Association of American Medical Colleges. 2006 Medical School Graduate Questionnaire. Available at www.aamc.org/data/gq/allschoolreports/2006.pdf. Accessed April 5, 2007.

² Bissonette R, Routé C. The educational effect of clinical rotations in nonindustrialized countries. *Fam Med*. 1994 Apr;26(4):226-31.

³ Gupta AR, Wells CK, Horwitz RI, Bia FJ, Barry M. The International Health Program: the fifteen-year experience with Yale University's Internal Medicine Residency Program. *Am J Trop Med Hyg*. 1999 Dec;61(6):1019-23.

⁴ Miller WC, Corey GR, Lallinger GJ, Durack DT. International health and internal medicine residency training: the Duke University experience. *Am J Med*. 1995 Sep;99(3):291-7.

⁵ Haq C, Rothenberg D, Gjerde C, Bobula J, Wilson C, Bickley L, Cardelle A, Joseph A. New world views: preparing physicians in training for global health work. *Fam Med*. 2000 Sep;32(8):566-72.

⁶ Godkin MA, Savageau JA. The effect of a global multiculturalism track on cultural competence of preclinical medical students. *Fam Med*. 2001 Mar;33(3):178-86.

⁷ Charon R, Banks JT, Connelly JE, Hawkins AH, Hunter KM, Jones AH, et al. Literature and medicine: contributions to clinical practice. *Ann Intern Med*. 1995;122:599-606.

global health experience, which revealed themes such as increased awareness of the use of the physical exam, the importance of public health and the use of resources in clinical settings.⁸ This study also reported that 70% of the program participants went on to become primary care physicians, though offered no control group for comparison. In another study of medical students, the participants in a global health elective were asked to fill out surveys before and after their participation.⁹ This intervention included a pre-travel course and a 6-week long international experience. After participation, the students reported improved skills in culturally sensitive care, communication with diverse patient populations and awareness of the effects of socio-economic factors on health. The participants were also found to have improved knowledge of several topics in clinic care in resource poor settings such as oral hydration therapy and breast feeding. Though these studies have identified general themes in the experiences of physicians in training who participate in global health electives, they are limited by the lack of a control group.

There do exist studies in the literature in which researchers have attempted to compare participants in global health electives with a control group. There are several retrospective studies from institutions with long-standing global health programs in which surveys were completed by internal medicine residents who participated and residents who did not. In one such study from Yale, a significant difference was found in the career choices of participants, including increased likelihood of working in an underserved area or with immigrants in the group who participated.¹⁰ This study also reported that participants were as likely as non-participants to change career plans while in residency, but significantly more likely to change from specialty care to primary care than non-participants. This finding was confirmed by a similarly designed study of internal medicine residents at Duke.¹¹ The Duke study also compared attitudes toward resource utilization and found no significant difference between participants in global health electives and non-participants. These studies share some of the limitations of the non-controlled studies above in that they rely predominantly on self-report and all data collection is retrospective.

In one study of an intensive global health and cultural immersion program for pre-clinical medical students at the University of Massachusetts, a prospective analysis of one particular outcome was analyzed--cultural competence--in both an intervention group and control group, before and after the intervention.¹² The intervention, in this case, involved a two year long curriculum including several domestic experiences with non-English speaking populations and an international language immersion program. A survey known as the Cultural Competence Self-Assessment Questionnaire¹³, validated in health care workers, was used to assess cultural

⁸ Bissonette R, Routé C. The educational effect of clinical rotations in nonindustrialized countries. *Fam Med.* 1994 Apr;26(4):226-31.

⁹ Haq C, Rothenberg D, Gjerde C, Bobula J, Wilson C, Bickley L, Cardelle A, Joseph A. New world views: preparing physicians in training for global health work. *Fam Med.* 2000 Sep;32(8):566-72.

¹⁰ Gupta AR, Wells CK, Horwitz RI, Bia FJ, Barry M. The International Health Program: the fifteen-year experience with Yale University's Internal Medicine Residency Program. *Am J Trop Med Hyg.* 1999 Dec;61(6):1019-23.

¹¹ Miller WC, Corey GR, Lallinger GJ, Durack DT. International health and internal medicine residency training: the Duke University experience. *Am J Med.* 1995 Sep;99(3):291-7.

¹² Godkin MA, Savageau JA. The effect of a global multiculturalism track on cultural competence of preclinical medical students. *Fam Med.* 2001 Mar;33(3):178-86.

¹³ Mason JL. Cultural competence self-assessment questionnaire: a manual for users. Portland, Ore: Portland State University, Research and Training Center on Family Support and Children's Mental Health.

competence. This study found significant differences between the cultural competence of the intervention and control groups at baseline, a difference which did not change after the intervention. This study's findings are limited by the lack of randomization, though it is also possible that the effects of the intervention were blunted by its use in pre-clinical students or were not seen with the relatively short follow-up which ended before the clinical years began.

In general, these studies are encouraging in that students and residents who participate in global health electives are almost uniformly positive about the effect these experiences have had on their career choices and their attitudes towards public health and the care of the underserved. However, it remains unclear whether these attitudes would have been held by the participants irrespective of their participation, or simply because they reflect a select group of physicians in training who differ at baseline from their colleagues. The evaluation of these programs is further weakened by the general lack of clear objectives for the program curricula and consequently, the subjective outcomes reported.

To address the need for more concrete evidence for the benefit of global health electives for medical students and residents, I propose to target a global health curriculum specifically to improve cultural competence with the use of narrative medicine techniques. Narrative medicine has been defined as "medicine practiced with the narrative competence to recognize, absorb, interpret and be moved by the stories of illness."¹⁴ This discipline uses writing techniques to improve the empathy and communication skills of health care providers. There is significant overlap between the objectives of narrative medicine and the objectives of global health electives that attempt to improve cultural competence among physicians in training. I therefore hypothesize that the incorporation of a narrative medicine component into the global health elective of medical students and internal medicine residents at Columbia will improve cultural competence.

2. Study design and statistical procedures

A. Design

This study will be structured as a prospective controlled interventional trial of a new narrative medicine curriculum for medical students and internal medicine residents participating in global health electives for 1-2 months. Study participants will include Columbia internal medicine residents approved for participation in global health electives by the residency program as well as post-3rd year Columbia medical students approved by the Office of International Affairs. The narrative medicine intervention will incorporate three components. There will be a pre-travel training session in which the participants are introduced to the tenets of narrative medicine and instructed in the basic skills needed to practice narrative medicine through independent writing. Second, there will be several writing assignments for the participants to complete while working internationally, which will be posted online and commented on by the narrative medicine instructor. Finally, there will be a debriefing session upon return from the international experience with further utilization of narrative medicine skills to reflect on the experiences of the participants. This intervention will be offered to internal medicine residents from January 2010 to December 2010 and to medical students from January 2011 to December 2011. Medical students who participate in global health electives in the first year and residents in the second year will act as controls. The effect of this intervention on cultural competence will be evaluated

¹⁴ Charon R. Narrative and medicine. *N Engl J Med.* 2004 Feb 26;350(9):862-4.

using the "Cultural Competence Self-Assessment Questionnaire," a 20 item survey of attitudes that has been validated in health care workers. This questionnaire will be administered to the participants before the program begins (or before departure for those not receiving the intervention), after the debriefing session (or after return from the international experience for those in the control group), 1 year later and 5 years later.

B. Analysis

An unpaired t-test will be used to compare the mean change in score on the questionnaire (pre vs. post, pre vs. 1 year and pre vs. 5 years) in the control and intervention groups.

C. Power

Data will be collected from January 2010 through January 2012. Using past participation as a guide, I can expect to recruit approximately 20 residents and a minimum of 20 medical students during this time period. Assuming a standard deviation of 3.75 for the change in questionnaire score (pre vs. post), I will have 80% power at $p=0.05$ to detect a difference of 3.44 points between the intervention and control groups (a difference of 4.2%).

3. Study procedures

The procedures required of participants are entirely separate from any of their clinical responsibilities. All participants will be asked to complete the questionnaires before their global health elective, after they return, 1 year later and 5 years later. The questionnaire will be completed online. Participants in the intervention group will be asked to attend an initial training session of 3 hours duration and debriefing session after their turn of similar length. While on their global health elective, they will be asked to complete 4 writing assignments, post them online and respond to the comments of the narrative medicine instructor. I estimate this will require roughly 90-120 minutes per assignment. This results in a time commitment of 10-14 hours for those in the intervention group.

4. Study drugs or devices: not applicable

5. Study questionnaires: see attached

6. Study subjects

All internal medicine residents approved for participation in a global health elective will be included. Medical students are eligible for inclusion if they have completed their 3rd year of medical school, have been approved for participation in a global health elective, and if their elective is planned for at least 4 weeks and not greater than 2 months. Medical students planning global health electives between their 1st and 2nd years of medical school will be excluded.

7. Recruitment

Subjects will be recruited from two separate locations. Residents will be recruited when their application for a global health elective is approved by the Graduate Medical Education office as well as the Internal Medicine Residency Program. Medical students will be recruited from the International Affairs office of the Columbia College of Physicians and Surgeons

8. Confidentiality of study data

All study data will be coded to eliminate personal identifiers. All data will be stored in a secure location, accessible only to the investigators.

9. Potential risks

There will be no additional risks incurred by participants in the intervention versus the control. The risk of participating in a global health elective is addressed extensively by both the internal medicine residency program and office of international affairs with mandatory safety training before departure for all those who participate in these electives.

10. Potential benefits

This study has the potential to identify the benefit of a narrative medicine curriculum for participants in global health electives. The participants in the intervention group may benefit from inclusion in this curriculum.

11. Alternatives

If participants decline to participate in the study, this will have no impact on their access to the global health elective programs. Participants who agree to participate in the study but decline the intervention will be excluded from the analysis.