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ORIGINAL RESEARCH

Student Reflection Papers on a Global Clinical Experience: A Qualitative Study

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Abstract

BACKGROUND Many of the 70,000 graduating US medical students [per year] have reported participating in a global health activity at some stage of medical school. This case study design provided a method for understanding the student's experience that included student's learning about culture, health disparities, exposure and reaction to a range of diseases actually encountered. The broad diversity of themes among students indicated that the GCE provided a flexible, personalized experience. We need to understand the student's experience in order to help design appropriate curricular experiences [and valid student assessment].

OBJECTIVE Our research aim was to analyze medical student reflection papers to understand how they viewed their Global Clinical Experience (GCE).

METHODS A qualitative case study design was used to analyze student reflection papers. All 28 students who participated in a GCE from 2008-2010 and in 2014-2015 and submitted a reflection paper on completion of the GCE were eligible to participate in the study. One student did not submit a reflection paper and was not included in the study.

FINDINGS All 27 papers were coded by paragraph for reflection and for themes. System of Care/Range of Care was mentioned most often, Aids to Adjustment Process was mentioned least. The theme, "Diseases," referred to any mention of a disease in the reflection papers, and 44 diseases were mentioned in the papers. The analysis for depth of reflection yielded the following data: Observation, 81/248 paragraphs; Observation and Interpretation, 130/248 paragraphs; and Observation, Interpretation, and Suggestions for change, 36/248 paragraphs; 9 reflection papers contained 27 separate accounts of a transformational experience.

CONCLUSIONS This study provided a method for understanding the student's experience that included student's learning about culture, health disparities, and exposure and reaction to a range of diseases actually encountered. The broad diversity of themes among students indicated that the GCE provided a flexible, personalized experience. How we might design a curriculum to facilitate transformational learning experiences needs further research.

KEY WORDS global health education, reflection papers, qualitative research, medical student education, international health

The authors report no conflicts of interest.

All authors, external and internal, had full access to all of the data (including statistical reports and tables) in the study and can take responsibility for the integrity of the data and the accuracy of the data analysis.

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INTRODUCTION

Data from the Association of American Medical Colleges Medical School Graduation Questionnaire show that between 2008-2012, 30% of graduating US medical students, amounting to approximately 70,000 students, reported participating in a global health activity at some stage of medical school.[1] Peluso et al[2] suggested that all students should have training in global health (GH), or should even participate in a Global Clinical Experience (GCE), and 1 international school has required GH training, including an international clerkship, since 2002.[3] Underlying this large expenditure of resources on GCEs is the hope that medical students will learn unique competencies, including cultural sensitivity and clinical problem solving, and will gain an understanding of health disparities and the effect of migration and marginalization on health.[4]

Narrative accounts have been used in medical school curricula, and Battat et al[4] have encouraged their use to assess GH learning. In recent years, some programs have been using reflection papers to demonstrate student enthusiasm or to verify participation in a GCE.[5,6] Our research aim was to analyze student reflection papers to understand how the students viewed their experience.

METHODS

Design. A qualitative case study design was used in order to analyze student reflection papers. Students were assigned to write a reflection paper in which they were asked to write about any memorable experiences from their GCE. Intentionally, no other specific instructions were given regarding length or content. The medical student GH office administrator (J.F.) informed students that the reflection paper would be shared with the foundation funding their experience and asked that the reflection papers be submitted before the end of academic year. The investigators obtained Institutional Review Board approval from Yale University for this study.

Sample. Over a 2-year period from 2008-2010, 17% of fourth-year medical students (ie, 35 of 201 fourth-year medical students) participated in a GCE. Of these 35 students, 20 students were sponsored by the medical student GH office and were required to submit reflection papers in order to receive the last installment of their stipend. Another 8 students who did rotations in Uganda in 2014-2015, who wrote reflection papers, were also added to the study in order to have a sufficient sample size from 1 site. Of these 28 students, all were included in the study except for 1 who wrote a creative essay instead of a reflection paper. These students completed GCEs in Argentina (1), Borneo (1), China (1), Peru (1), South Africa (3), Thailand (1), and Uganda (20).

Analysis. Papers ranged from 2 paragraphs to up to 5 pages (mean = 1894 words, range = 381-5025 words). Content of all reflection papers was analyzed in 2 phases for themes according to Miles and Huberman.[7] In the first phase, the reflection papers written in 2008-2009 (n = 9) comprised the texts from which the coding structure was derived. Three of the researchers (J.F., C.Z.M., and M.J.G.) developed the initial codes from a random sample of 5 papers. Each researcher independently identified themes and then all 3 continued to meet until agreement was obtained with the coding structure. Discrepancies were discussed among the larger group of 5 investigators and agreement was reached. In the second phase, 2014-2015, all reflection papers (n = 7) written by students who participated in 1 global health experience were coded by 3 of the authors (C.Z.M., J.H., and R.R.).

Reflection paper content was also analyzed to determine whether or not the student's descriptions and observations were accompanied by interpretations and suggestions for change. In a subsequent analysis, all 27 papers were revisited and coded by paragraph according to the presence of the following 4 categories that describe progressively more complex cognitive processing on the part of the student: (a) observations only; (b) observations and interpretation; (c) observation, interpretation, and suggestions for change; or (d) transformational experience. We defined a transformational experience, based on Mezirow,[8] as one that causes students to begin to question and explore their basic assumptions, which in turn changes their understanding of the structures they have used to organize their experience of the world.

RESULTS

All themes emerged from the reflection papers and were in accord with described methodology. The frequency of each theme and the numbers of students who mentioned the theme are listed in Table 1. System of Care/Range of Care was mentioned most often (111 times) by 26 out of 27 students, whereas Aids to Adjustment Process was mentioned least (4 times) by 4 out of 27 students. The 11 most commonly occurring themes (mentioned by at least 10 students), arranged in

descending order of frequency, appear in Table 2 with accompanying quotes that are representative examples of each theme.

The theme, "Diseases," referred to any mention of a disease in the reflection papers. A total of 44 diseases were mentioned in the reflections, the most common of which were HIV (22 mentions) and tuberculosis (17 mentions). Less commonly mentioned diseases included tetanus, malaria, *Cryptococcus*, herpes zoster, labor and delivery, paralysis, sepsis, Pott's disease, meningitis, mental illness, hypertension, Parkinson's disease, arthritis, heart disease, cancer, sleeping sickness, diabetes, and obesity. Rare diseases, seen by 2 of the students who spent rotations in an ophthalmologic and an orthopedic setting, were not tallied.

The analysis for depth of reflection (see Methods) yielded the following data: (1) Observation, 81/248 paragraphs (32.7%); (2) Observation and Interpretation, 130/248 paragraphs (52.4%); (3) Observation, Interpretation, and Suggestions for Change, 36/248 paragraphs (14.5%); and (4) Transformational Experience; 9 reflection papers contained 27 (33.3%) separate accounts of evidence of a transformational experience. The following quotes typify each of these 4 categories.

Observation. He warned me that I would be troubled by some of the things I would see at the hospital, but asked me to look beyond the individual encounters to the institution. He told me that the goal of the program is to help improve [the country's] healthcare through education and research, but that it would take five to ten years for improvements to affect individual patients.

Observation and Interpretation. The "government-run private hospitals" as I began to call them, are a little unusual to me. Patients are required to pay cash for surgeries, but it is called a public hospital. Doctors feel (and are) underpaid, but they get enormous bonuses from industry.

Observation, Interpretation, and Interventional Suggestion. In the US, we could have intubated her to give her breathing muscles a chance to rest. We could have given her appropriate antibiotics based on rapidly available culture results and drug sensitivities. Importantly, a stronger public health system may have prevented her from defaulting on her therapy as she had initially due to poor social support. Maybe she would not have been infected with HIV and TB in the first place.

Transformational Experience. Nine reflection papers contained 27 (33.3%) separate accounts that contained evidence of a transformational experience. Representative quotes include the following:

> Given my upbringing of modesty and a medical training that focused on draping and patient privacy, this scene threatened my personal comfort. Little did I know I would come back to this very scene at the end of my six weeks in [the country] and learn more about medicine and myself.

> And yet, despite these experiences, I was constantly surprised by how little I was moved by the sick, dying patients on the wards. I expected to have a really hard time emotionally in the hospital, and that I would bring those emotions and those stories home with me from the hospital—that they would consume me, and that they would keep me awake at night.

> I wonder if my detachment was, in part, a subconscious defense mechanism. I was surrounded by a great deal of suffering and I felt powerless to help in any way. Perhaps the numbness I felt was not an absence of reaction, but rather a reaction in and of itself. Does it make me callous? Does it mean I have a lower capacity for sympathy or compassion than other people who respond with shock, awe, anger and indignation? In a situation where other people are inspired to take

Table 1. Frequency Counts of Reflection Themes

Themes	No. of Times Mentioned by Students (out of 27)	Frequency
1. System of Care/Range of Care	26	111
2. Observation of General Culture	20	74
3. Teaching Environment and Student's Educational Experience	21	68
4. Diseases	21	55
5. Looking Back	21	53
6. Student's Description of Medical Culture	18	58
7. Student's Emotional Responses	17	42
8. Admiration, Appreciation, and Respect	16	28
9. Use of Resources in Problem Solving	14	29
10. Student Preparation	13	34
11. Death and Dying	13	21
12. Ethical Issues	12	41
13. Student's Physical Environment	11	37
14. Effect of Environment on Illness	9	16
15. Quality of Inter-Institutional Collaboration	8	13
16. Student's Perception of Patient's View of Care	7	11
17. Hope for Change or Improvement	7	10
18. Poverty/Poverty and Health	7	8
19. Student Coping Strategies	6	9
20. Adjustment Process	5	10
21. Single Appearances (eg, Institutional Racism)	5	8
22. Aids to Adjustment Process	4	4
Total Frequency Count		740

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Table 2. Representative Sample of Student Quotes From 10 Most Common Themes

Theme	Student Quotes
1. System of Care/Range of Care	"Yes, there were not enough nurses—but the nurses that were present had no clearly delineated duties and such varying skill sets that it was impossible to know what any individual nurse may or may not be capable of doing."
2. Observation of General Culture	"In addition to the many physical barriers to health care in Borneo, I also learned about the cultural barriers. The western model of ongoing medications for chronic states was skeptical to ASRI's patients. Culturally, taking medications on a daily basis means you are very sick; family members worry if someone is prescribed medications indefinitely."
3. Teaching Environment and Student's Educational Experience	"The very receptive midwives on the labor floor took me under their wing and allowed me to learn from and contribute to patients in a manner I had yet to experience at Mulago."
4. Diseases	"One patient with advanced HIV disease had a herpes zoster infection (shingles) that involved her eye, causing blindness and excruciating pain."
5. Looking Back	"I returned from Uganda and immediately began interviewing for residency. During each interview, I was pressed to 'sum up' my time spent at Mulago Hospital in Kampala. I struggled to think of a neat sound bite to encompass the very real messiness of daily life in Mulago. My experience was governed by the pungent smells, the vivid colors, the suffering and the joy that filled the crowded building."
6. Student's Description of Medical Culture	"The physicians would greet the patient and family members with a kiss on both cheeks and a hug and begin the conversation with questions about their family and lives, before continuing onto medical matters."
7. Student's Emotional Responses	"I was overcome with repulsion—and then disgust at my own visceral reaction to the poor children's suffering."
8. Admiration, Appreciation, and Respect	"One of the highlights of my experience was the opportunity to work with the residents, who were consummate hosts and teachers. It was difficult for me to believe that the residency program here is only three years old; the current seniors preparing to take their board exams represent the inaugural class."
9. Use of Resources in Problem Solving	"I discovered an unexpected impact limited resources, of a very specific resource, could have. It was not the lack of sterile gloves, scalpels, Pitocin, or suture material that impeded sufficient care—but instead the lack of manpower. And it is this lack of manpower that trickled down to create scenes I never expected to witness in any medical setting."
10. Student Preparation	"A kind hearted, smiling medical student explained how each of the wards were organized as we came across bodies scattered on beds and floor mats alike. This kind of scene was expected as we had been thoroughly prepped beforehand about the type of care and facilities we would be working in."

action and work against the injustice, why did I turn inward?

This experience truly was an integrated one of learning from this immense holistic endeavor serving the human and environmental health needs in [the country], and it has given me so much personally, professionally and spiritually.

My rotation in at [the country] Hospital in [the country] gave me the opportunity to reflect on many global health issues and gave me a unique perspective on the healthcare systems in [the country] and the [country].

In being invited into this community, I have gained a deeper appreciation for my potential as doctor and for the degree to which simple exchanges have the power to affect change in the world. I hope to have the opportunity to deepen my relationship to this effort or others like it as I gain increased clinical acumen in residency.

DISCUSSION

Because of our limited sample from 1 institution, we view our work more as exploring a method to better understand students' GCE experiences. The students' main reflections relate to the following 4 areas: (a) crossing cultural boundaries, both medical and general ones; (b) adjusting to a very different culture and to an under-resourced care setting with marked health disparities, where diseases present at a later stage of development and where the effect of environment on illness is strongly felt; (c) appreciating the educational value of

experiences and devoted teachers; and (d) reflecting on the way these experiences may affect their future.

Our second observation is that students' experience was varied, as reflected in the wide range of themes addressed by different students. Practical questions that derive from these observations include the following: Which experiences, if any, should all students have on an elective? Should one enable a student to reach all of the GCE educational goals, or should the goals be prioritized to include core goals and flexible ones?

Our third observation is that students experienced direct contact with a wide range of diseases. Two diseases, HIV and tuberculosis, both of which are among the six most common global health problems, were by far the most commonly mentioned in the reflection essays. However, students saw many other diseases that were often related to their particular location and environment. Pattern of illness in a particular location can have implications for curricular design. For example, learning before the GCE might include study of the management of common diseases at the site to be visited.

Fourth, although it is difficult to generalize about the depth of reflection or the extent to which students have been changed by their experience, the results indicate that most students not only observed but also interpreted their experience in some way. In some instances, the experience appeared to reinforce previous experiences. One-third of students appeared to have had a transformational learning experience. Through this analysis we were better able to operationalize the definition of transformational experience. We found that these transformations could be of a personal nature, such as discovering aspects of their character or changing their career trajectory. For others, the transformation might be about the impact that culture, determinants of health, or the health care system has on the health of a population. The reflections provide some hints about a pathway that is developmental to a transformational experience: Student are placed in situations in which their basic assumptions are not sufficient to understand their experience, and so students begin to question and explore their assumptions. As we design our curricula we will need further research to explore how we can create teaching and learning opportunities that can potentially facilitate transformational experiences.

Limitations of the method include the possibility that a student is not describing or is falsifying significant experiences and that, even if neither of these is the case, analysis of reflection paper themes can be used as 1 tool for assessment that could be triangulated with other assessment strategies. The main technical limitation of content analysis is that it requires a relatively long training period of weeks to a month, is labor intensive, and takes time regardless of the software being used to assist the process.[9] In addition, we acknowledge that most of the students were at 1 site, whereas the other 6 sites had 3 or fewer students; consequently, we did not compare data across sites but realize this needs further exploration.

Further research is needed to elucidate the extent to which students internalize their GCE experiences and whether thematic analysis of GCEs can be used efficiently by other medical schools. In addition, research is needed to understand whether themes can be generalized across sites or if the themes are site specific. Thematic analysis could also be considered for blogs or other forms of student reflection. Lastly, we need to consider what are the most effective prompts to engage students in reflecting about their global health experiences.

CONCLUSION

Reflection papers provide information on student learning about the effect of culture on health, health disparities, diseases actually encountered, and personal development that may be much less accessible using standard assessments. Content analysis of GCE reflection papers indicates that they constitute a rich repository of information related to all aspects of the experience, including preparation for the elective and plans for the future after the student has returned to the home institution. It also provides a qualitative method for describing the nature of student GCEs. The broad diversity of themes among students indicates that the GCE program provides a flexible, personalized experience. Content analysis also provides evidence of internalization of student experiences that may contribute to personal growth and transformational learning.

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