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# The Health Disparities Field Experience: College students and community health workers in the field

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## Abstract:

**CONTEXT:** Immersing students studying health promotion and disease prevention into community settings facing health disparities is an essential supplement to their academic experience. As part of many public health professions, these students will likely need to understand the values and beliefs of different cultures so that decisions of appropriate health promotion and treatment can be made equitably. This paper evaluates an education immersion program that was part of a National Cancer Institute funded collaboration supporting the recruitment and training of university students in cancer research. The primary aim of the Health Disparities Field Experience (HDFE) was to facilitate an experience for students pursuing a health-related degree to understand the conceptual issues in border/rural health and the cultural contexts related to health disparities among medically and financially indigent populations in the region.

**SUBJECTS AND METHODS:** This study was conducted using qualitative research methods using a variation of the content analysis approach using open codes to categorize the data. Six students were selected to participate in the HDFE (five graduate students and one undergraduate) and all six of the participants completed pre- and post-test surveys.

**RESULTS:** From the analysis of the data, posttest qualitative responses indicated that three participants saw racism as a primary cause of cancer-related disparities, a change from their pretest responses. When asked about the personal impact of the HDFE, respondents mentioned the importance of the experiential component.

**CONCLUSIONS:** Participants learned about health disparities from the HDFE and expressed high satisfaction with this approach to education.

## Keywords:

Active learning, experiential education, health disparities, health education

## Introduction

The United States is becoming increasingly diverse with more than a third of its population represented in dissimilar ethnic and racial groups.<sup>[1]</sup> The United States Census Bureau estimates that this diverse composition will increase over time. Values, attitudes, and ways of knowing differ among diverse population subgroups, making it necessary to rethink ideas of cultural relevance. Educators, for example, need to be familiar with a

variety of disparate cultures and ideas when presenting information to students. Nowhere is this more important than in the education and training of individuals going into the fields of health promotion and treatment; in the interest of social justice, such individuals must be conversant with the values and beliefs of different cultures so that decisions of appropriate health promotion and treatment can be made equitably.<sup>[2]</sup>

Similar to the experiences of a majority of students in the US, those studying health

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education participate in education that is primarily didactic and theoretical.<sup>[3]</sup> Such pedagogies are relevant and, indeed, have become the standard for many institutions of postsecondary learning. Some researchers have said that such approaches are “theory-rich” but “experience-poor.”<sup>[4]</sup> This can mean that the curriculum being taught in classroom settings does not necessarily translate well for practice. A different approach to didactic education is experiential education. Breunig, for example, notes that experiential education is “practicing what is preached” so that students can work toward social justice.<sup>[5]</sup> Her point is that educators must involve students in “direct experience” so they can develop culturally appropriate skills. Others also have noted the benefits of experiential education<sup>[6-8]</sup> and the World Health Organization report on learning argued for meeting the health needs of communities by working together.<sup>[9]</sup>

## Subjects and Methods

The Health Disparities Field Experience (HDFE) was made possible through a unique partnership between New Mexico State University (NMSU), a minority-serving institution (MSI), and the Fred Hutchinson Cancer Research Center (Fred Hutch), a comprehensive cancer center called the Partnership for the Advancement of Cancer Research (PACR). The nature of the PACR has been described previously;<sup>[10]</sup> briefly, it is part of a National Cancer Institute (NCI) initiative to build cancer infrastructure in MSIs. The NCI initiative called the Comprehensive Partnerships to Advance Cancer Health Equity pairs an MSI with a comprehensive cancer center and provides institutional awards for the development of partnerships between institutions serving underserved populations experiencing health disparities and underrepresented students.

In 2002, NMSU, located in Las Cruces, New Mexico, and Fred Hutch, located in Seattle, WA, jointly received funding to pursue such a partnership. Funded since then, the PACR has implemented training and collaborative research opportunities for undergraduate and graduate students to develop diverse leaders in cancer and health disparities research. Given that NMSU is located near the US-Mexico border, early cycles of the PACR included experiential education to familiarize students with diverse health systems in both the US and in Mexico. Subsequent events made it undesirable to travel across the Mexican border. Nevertheless, PACR faculty recognized the unique nature of health systems in the US-Mexico border area, leading to a modified experiential education experience focused on areas along the US border and Native American/American Indian tribal lands that experience significant health disparities. Because the PACR had previously conducted intensive

work with the Navajo tribe,<sup>[11]</sup> and both NMSU and Fred Hutch have established strong relationships with this underserved population, we deemed it appropriate to include this population in the field experience. Further, the culture of the Navajo as well as their barriers to health promotion has led to unique ways of dealing with health, providing a rich learning experience.

As NMSU is located near the US-Mexico border, it is important to recognize the prominence of unique border communities called Colonias in the area. The US-Mexico border divides both metropolitan areas and rural communities predominantly consisting of Hispanics of Mexican decent.<sup>[12]</sup> The US-Mexico border region is defined by high rates of population growth and poverty (GNEB, 2010) with 21% of the residents of the 48 counties on the border living below the official US poverty line-twice the US average.<sup>[1,13]</sup> Given the widespread poverty along the border, housing settlements called Colonias line the border from California to Texas. These Colonias often lack adequate infrastructure and public services such as water, sewers, electricity, and paved roads.<sup>[14]</sup> The mix of poverty, fear of deportation, linguistic limitations (Spanish only speakers), and limited access to health care requires increasing appropriate health promotion activities, engaging the community in outreach efforts, and attention to cultural values and practices to mitigate health inequities. Often, these communities have unique structures in place to meet their distinctive needs; for example, many medical clinical use health promoters (*promotoras* in Spanish) to work with both English and non-English speakers. The *promotoras* are generally similar to the populations they serve, so there is immediately a sense of trust and belonging between the clinic staff and patients.

The Navajo Nation is the largest Indian reservation in the US at >25,000 contiguous miles and spanning three US states – Arizona, New Mexico, and Utah.<sup>[15]</sup> Latest data indicate that there is a 19.1% unemployment rate on the reservation (although there is concern that this is an underestimation).<sup>[16]</sup> The median household income is \$26,862 and 40.5% of all Navajo Nation people live under the poverty line. More than 50% of the population is covered only by public health insurance such as Medicare and Medicaid.<sup>[16]</sup> According to the Navajo Housing Authority, over 50% of households on the Navajo Nation have no indoor water plumbing.<sup>[17]</sup> Approximately 30% of the population does not have access to clean drinking water.<sup>[18]</sup> Out of all the homes in the US that do not have electricity, 75% are found in the Navajo Nation.<sup>[19]</sup> Out of the 18,000 miles of road in the Navajo Nation, 15,000 are not yet paved.<sup>[20]</sup>

Flyers advertising the HDFE were linked to the PACR website and posted on campus at the Fred Hutch, the

University of Washington (UW), Fred Hutch's affiliated university in Seattle, and at NMSU in Las Cruces. In addition, faculty in classes that focused on health disparities distributed the flyers to students. Students interested in participating in the field experience completed an application that included a demographic information form, a resume, a personal statement of the applicant's interest in the program, and two letters of recommendation from referees.

Faculty and staff at NMSU and Fred Hutch selected participants based on a scoring rubric that measured relevant academic/work experiences, a personal statement of how the experience would benefit future careers, referees' assessment of the quality of the applicant, and finally, grade point average. After selection, students received a handbook describing the experience in more depth. Instructions included items to pack, some description of the regions, guidelines for appropriate clothing, and suggestions for appropriate conduct when shadowing the *promotoras* and community health representatives (CHRs).

The HDFE provided accepted students with a formative experience observing and participating in activities aimed at caring for the underserved populations in the region to better understand the issues related to health disparities and health inequalities, including the barriers to improving health outcomes in the region. The objectives of the HDFE were for students to be able to: (1) identify and describe the factors (e.g., systemic, cultural, and behavioral) contributing to health disparities for individuals living along the US-Mexico border and Navajo regions; and (2) generate an interest in participants, in respect to their chosen career path, to want to work with communities disproportionately affected by health disparities. To achieve these objectives, HDFE participants:

- Met with community members, health-care providers, and public health experts in health-care settings to discuss various views on the causes of health inequities and disparities
- Participated in site visits of ongoing research projects focused on health promotion and cancer prevention in underrepresented populations
- Participated in various activities at community health sites including distributing donated goods to community members, attending a monthly *promotoras* meeting and tobacco cessation training, and joining a working group at women's cultural center; and
- Accompanied and assisted CHRs on home visits on the Navajo Nation.

The students were encouraged to accompany site-specific workers, engage in dialogue with community members and site personnel, and to take written notes along with

photographs (with consent) throughout the HDFE for a final project presentation using photo-ethnographic techniques. Faculty at NMSU and Fred Hutch and administrators from the New Mexico Department of Health (NMDOH) Office of Border Health and the NMDOH Office of Community Health Workers designed the HDFE activities and connected the students with community leaders.

The HDFE took place over 3 weeks. During the 1<sup>st</sup> week, the selected students began their experience by reading key research articles on health disparities that were germane to the populations in the border and Navajo regions. The readings were selected to establish foundational knowledge about health disparities in the regions and the institutions responsible for much of the health care, as well as relevant social determinants of health impacting health-care delivery and health outcomes. Students then spent 2 weeks traveling in New Mexico, Arizona (Navajo Nation), and West Texas (US/Mexico border area) visiting rural health clinics and hospitals, community health centers, and community and cultural centers [Table 1].

The students covered over 500 miles of mostly rural areas of the aforementioned states. HDFE students spent time with PACR faculty and staff, local health educators and health promotion specialists (referred to as *promotoras* in the border area, and CHRs in the Navajo Nation), medical staff from community health centers and clinical sites, and staff from government health agencies.

At the conclusion of the HDFE, students were required to present their personal stories and photographs collected during the HDFE. The HDFE was facilitated by a public health faculty member and a communications specialist, enlisted to work with students to create mini-photo ethnographies, an integral part of community experiential training. These were ethnographies to be used in the presentation. The purpose was to allow students to discuss their experiences with an invited audience that included NMSU, UW, and Fred Hutch faculty and staff; the collaborating staff from the NMDOH; and the two facilitators of the HDFE.

The HDFE was an activity approved by the Institutional Review Boards (IRBs) of both NMSU and Fred Hutch. Participating students completed an informed consent document approved both by the Fred Hutchinson Cancer Research Center IRB (IR file 6617) and the NMSU IRB (# 11709), respectively.

Participants completed a baseline survey and a post-experience survey. The baseline survey included 17 questions of which 10 were close-ended and seven

**Table 1: Sites visited during the Health Disparities Field Experience**

Site	Location	Presenter(s)
US-Mexico Border Wall	Anapra, New Mexico/ Juarez, Mexico	Southern coordinator - New Mexico Department of Health Office of Community Health Workers Community development coordinator - New Mexico Department of Health Office of Border Health
Women's Cultural Center	Anthony, New Mexico	CEO/founder
San Elizario Community Center	San Elizario, Tx	CEO/founder
Chaparral Community Center	Chaparral, New Mexico	Community health workers
Doña Ana County Department of Health Office	Las Cruces, New Mexico	Office of community health workers leadership
Navajo Department of Health	Window Rock, Arizona	Epidemiologist, community health representative, office of community health representatives leadership
Diné College	Shiprock, New Mexico	Graduate and undergraduate students, faculty, and staff
Uranium Mill Site	Shiprock, New Mexico	Senior hydrologist at NNEPA
Cibola General Hospital	Grants, New Mexico	Marketing director, nurse practitioner
Mesilla Valley Community of Hope	Las Cruces, New Mexico	Chief executive officer

open-ended. The post-experience survey included these same questions along with five additional questions aimed at evaluating the HD FE.

### Close-ended questions

Relevant close-ended questions included attitudinal items about the health-care system and its value in this country, belief that individuals had a place to go for health care, belief that health care was available aside from normal work hours, ease in obtaining medical information for a physician; two questions on health disparities knowledge (Hispanic women and cervical cancer incidence, American Indian/Alaskan Native (AI/AN) men and colorectal cancer incidence); the ability of coursework to transmit cancer health disparities knowledge; and intent to pursue a career in health disparities. All questions had a five-point Likert scale of responses. Demographic characteristics were collected in the application form and included gender, age, ethnicity/ race, and institutional affiliation.

### Open-ended questions

Relevant open-ended questions in the baseline asked respondents to give a definition and examples of social determinants of health, reasons for health disparities, reasons why underrepresented individuals might mistrust the health-care system, and to describe three social determinants of health that might influence medical care. At the follow-up survey, participants were also asked to describe the most impactful experience of the HD FE, as well as areas that needed improvement.

Survey data were assessed by summarizing the responses and calculating the mean for each response. In the case of health-care attitudes four variables (health care in the US, place to go when ill, place to go outside of normal hours, and ease of receiving health care) were combined to create one score of attitudes. For knowledge, two variables (Hispanic women and cervical cancer, and

AI/AN men and colorectal cancer) were combined for one score. Intent was the mean of the single question. Because of the small number of participants, significance was not calculated.

For the open-ended responses, we used a variation of the content analysis approach using open codes to categorize the data.<sup>[21]</sup> From the responses, we examined the data for word and phrase relation to the HD FE objectives. Finally, we linked the themes to the hypotheses developed earlier in this report. This content analysis was then linked to the survey data to provide a more comprehensive report of the students' experiences.

## Results

Twelve applications were received. From the evaluation process described above, six applicants were selected for participation. Disciplines of participating students included nursing, health services, public health, and environmental science. All participants identified as female, and ages ranged from 24 to 31. One participant was bilingual (Spanish). Two participants identified as Caucasian and the others as Hispanic, Asian/Pacific Islander, or African American.

Table 2 summarizes the survey data. As shown, there appeared to be little change in attitudes; knowledge was slightly improved from 3.6 to 4.0 (on a 5-point scale where 5 was the highest knowledge level); there was an increase in understanding health disparities from a noncoursework perspective from 3.0 to 2.0 (on a 5-point scale where 1 was the highest increase); and there was no change in intent to enter a health disparities career field.

The open-ended responses, however, provide richness of data that give more detail on the students' experience.

The students found the HD FE to be a valuable learning experience which helped them to understand the factors



**Table 2: Quantitative responses to pre- and post-tests (n=6)**

Response	Pretest	Posttest
Attitudes toward health care <sup>a</sup>	3.3	3.4
Knowledge about disparities <sup>a</sup>	3.6	4.0
Understanding from a noncoursework perspective <sup>b</sup>	3.0	2.0
Intent to enter health disparities career <sup>b</sup>	2.2	2.2

<sup>a</sup>Responses ranged from 1 to 5, with 5 the highest level of agreement,

<sup>b</sup>Responses ranged from 1 to 5, with 1 the highest level of agreement

that influence the attitudes of community members about health care. In addition, students were able to give possible reasons of the mistrust towards the medical system.

*Underrepresented individuals may struggle to get their needs met within the healthcare system, even by healthcare providers who are well meaning. Each time a patient is "burned" attempting to get their needs met, then having the trust to seek care again becomes more difficult.*

When asked about factors that could be adversely impacting the health of individuals living in the visited communities, specifically cancer screening and prevention, students identified structural issues including a lack of transportation options to access clinics. Respondents also mentioned that individuals living in rural areas are being excluded from communication strategies about cancer screening recommendations that rely on smart phone and internet access.

*[There is the] lack of ability to receive reminders for screening via text, phone, or any other means [and the] lack of ability for a sanitary place in which to undergo procedures as recommended by a provider.*

The participants also shared how they saw racism and structural inequality as significant causes of health disparities which limit access to medical care and cause mistrust of the medical system.

*Underrepresented individuals may have mistrust in the healthcare system due to racism, discrimination, and historical trauma, as well as from fear of deportation having to disclose personal information. These individuals may also be less willing to receive care from someone who they feel is not a part of their community and cannot identify or relate to.*

*Racism/structural inequality is a cause for disparities in health care access. One way in which this is evident is in undocumented immigrants' lack of access to adequate medical care within detention facilities, and by the lack of access to Medicaid benefits for immigrants residing legally within the United States until after 5 years of holding green card status.*

*Racism [is] the lack of access to health care providers, and insurance.*

When asked about how the HDFE impacted them directly, students mentioned how vital it was to engage in dialogue with community health educators and advocates (specifically women of color) and experience rural public health first-hand.

*Community engagement-interacting with women at community centre in Chaparral, NM, and the director of AYUDA Inc in San Elizario, TX. Seeing the capacity of community organizations in southern NM/TX... meeting with the many women of colour working in public health agencies in NM and Navajo. There are few models for that.*

*This field experience allows you to do a lot of networking, you get hands on experience, and you have the ability to learn from others.*

*Participation with a group of women of colour who shared their personal perspectives on what they witnessed as we travelled around New Mexico and sharing my perspectives on my experiences doing rural advocacy with public health students who have lived/worked primarily in an urban environment.*

Finally, the students shared how much they learned from working with the community health workers/representatives during the HDFE.

*It's one thing to read about communities in journals and publications and to learn about them in a classroom setting. However, it's another to be able to interact with community members and better understand their experiences from their own perspectives.*

*While there were many impactful experiences, what comes to mind immediately is all the opportunities to meet and learn directly from community members, especially the Promotoras from the southern most regions and the Community Health Representatives from the Navajo Nation.*

## Discussion

From both a medical training and public health perspective, immersing students into community settings can offer insight on the health needs of the community and the resources, or lack thereof, to handle complexities of illness.<sup>[22,23]</sup> Understanding the need to train a competent health workforce to meet the increasing needs of rural and resource-poor areas in the US, the PACR, in collaboration with community members and state health organizations, created a valuable field experience focused on educating participants about health disparities and their causes and encouraging community engagement in their future careers.

Using an experiential education framework, the HDFE provided community-based public health education by

immersing students in different community environments to better understand the key factors that impact the health and well-being of particular disparate segments of the US-Mexico border and the Navajo Nation. The students were not passive observers, but engaged in activities along with community health workers and CHRs, participated in region-specific trainings sponsored by the state health departments alongside health-care workers, assisted with care packaging (e.g., dry food items and fruits from local farmers) for families, and served as active participants during meetings and presentations at the various health-care sites. The HDFE enabled the students to experience the realities and context of resource-deprived areas of New Mexico, Texas, and Arizona, and exposed them to the richness of the cultures and traditions that can help mitigate the effects of poverty, racism, and a lack of health-care resources.

The HDFE was well received by the students: they reported that the experience was a valuable learning opportunity and that they appreciated meeting with, and learning from, community members. Results from the analysis of the pre- and post-questionnaires suggest that a community-immersion experience like the HDFE can be a valuable experience for students interested in learning about health disparities.

Although the closed-ended survey data showed only minimal change in attitudinal, knowledge, and practice responses after the HDFE, the open-ended responses showed students reflecting on the challenges faced by underrepresented individuals to engage with the health-care system and the community socio-cultural factors impacting health outcomes and disparities. Many of the health disparities the students observed were linked to socioeconomic factors such as little to no access to basic needs like potable water and electricity, unemployment, poor housing, and low-wage jobs, and these were documented by the students either in their questionnaire responses or in their presentations. Strengths of the HDFE include providing the opportunity for students to engage in discussions with community members, explore several communities (some with obvious signs of poverty and social injustices), and understand how members of the community decided to work in health care within their own communities as CHWs and CHRs implementing the latest strategies to improve health outcomes. Though other cultural immersion programs and health-related field experiences have been previously described and evaluated, the HDFE was novel given the locations that student participants visited, and the opportunities to “shadow” community health workers/representatives along the US-Mexico border and the Navajo Nation, getting them access to public health in real time and seeing the impacts of social determinants of health in some of the communities most impacted in the U.S.

This small study was not without its limitations. We had a relatively small number of participants as a result of budgetary restraints therefore future work should either have larger numbers or combine results from several field experiences. The qualitative data would have benefited from an analysis of the final presentations; unfortunately, they were not recorded making it impossible to retrospectively analyse them. Nevertheless, the pre- and post-qualitative comments were plentiful. Future studies could conduct a more systematic analysis of the end-of-study presentations.

## Conclusions

University-based health programs have a responsibility to expand their curriculum to include community-based immersion training to better equip students to understand the challenges faced by health-care workers and residents in low resource areas and to develop health promotion programs that are realistic and effective. The HDFE provided an experience that aimed to encourage students to work with communities in most need and to see the efforts already being made to mitigate the disparities. It enabled students to learn outside the classroom and to engage with communities, not particularly known to the students, in a humble and meaningful way. It is important to note that the HDFE would not have been successful without existing and new relationships between the academic institutions, the state health organizations, and the communities.

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## Conflicts of interest

There are no conflicts of interest.

## References

1. US Census Bureau. Population Estimates Show Aging Across Race Groups Differs; 2019.
2. Cushman LF, Delva M, Franks CL, Jimenez-Bautista A, Moon-Howard J, Glover J, *et al.* Cultural competency training for public

- health students: Integrating self, social, and global awareness into a master of public health curriculum. *Am J Public Health* 2015;105 Suppl 1:S132-40.
3. Mason MR, Dunens E. Service-learning as a practical introduction to undergraduate public health: Benefits for student outcomes and accreditation. *Front Public Health* 2019;7:63.
  4. Chen HC, Wamsley MA, Azzam A, Julian K, Irby DM, O'Sullivan PS. The health professions education pathway: Preparing students, residents, and fellows to become future educators. *Teach Learn Med* 2017;29:216-27.
  5. Breunig M. Turning experiential education and critical pedagogy theory into praxis. *J Experiential Educ* 2005;28:106-22.
  6. Kolb DA. *Experiential Learning: Experience as the Source of Learning and Development*. Englewood Cliffs, NJ: Prentice Hall; 1989.
  7. Stanton F, Grant J. Approaches to experiential learning, course delivery and validation in medicine. A background document. *Med Educ* 1999;33:282-97.
  8. Sheng AY, Chu A, Biancarelli D, Drainoni ML, Sullivan R, Schneider JI. A novel web-based experiential learning platform for medical students (learning moment): Qualitative study. *JMIR Med Educ* 2018;4:e10657.
  9. World Health Organization. *Working Together for Health 2006*. World Health Organization; 2006.
  10. Thompson B, O'Connell M, Loest H, Anderson J, Westcott R. Understanding and reducing obstacles in a collaboration between a minority institution and a cancer center. *J Health Care Poor Underserved* 2013;24:1648-56.
  11. Lombard KA, Beresford SA, Ornelas IJ, Topaha C, Becenti T, Thomas D. Healthy gardens/healthy lives: Navajo perceptions of growing food locally to prevent diabetes and cancer. *Health Promot Pract* 2014;15:223-31.
  12. Homedes N. Achieving health equity and social justice in the U.S.-Mexico border region. In: Lusk M, Staudt K, Moya E, editors. *Social Justice in the US-Mexico Border Region*. New York: Springer; 2012.
  13. Mexican Immigrants in the United States; 2018. Available from: <https://www.migrationpolicy.org/article/mexican-immigrants-united-states>. Retrieved 17-12-2019.
  14. Donelson AJ, Esparza AX. *The Colonias Reader: Economy, Housing and Public Health in US-Mexico Border Colonias*. Tucson, AZ. University of Arizona Press; 2016. Retrieved 17-12-2019.
  15. Navajo Nation. Available from: <https://www.ihs.gov/navajo/navajonation/>. Retrieved 22-01-2020.
  16. My Tribal Area; 2017. Available from: <https://www.census.gov/tribal/index.html?aianihh=2430>. Retrieved 22-01-2020.
  17. Navajo Housing Authority; 2011. Available from: <http://www.navajohousingauthority.org/about-us-3/>. Retrieved 25-01-2020.
  18. About DWR- Executive Summary; 2019. Available from: <https://www.nndwr.navajo-nsn.gov>. Retrieved 20-12-2020.
  19. Light Up Navajo II; 2019. Available from: <https://www.publicpower.org/LightUpNavajo>. Retrieved 22-01-2020.
  20. Chaco P. Roads and Transportation on the Navajo Nation: The White House President Barack Obama archives; 2012.
  21. Creswell JW, Poth CN. *Qualitative Inquiry & Research Design: Choosing among Five Approaches*. 4<sup>th</sup> ed. Los Angeles: SAGE; 2018.
  22. Benor D, Hobfoll S. New directions for medical education: Problem-based learning and community-oriented medical education. In: Schmidt HG, Alausa OK, editors. *New Directions in Medical Education Problem-Based Learning and Community Oriented Medical Education*. Berlin: Springer-Verlag; 1989.
  23. Chastonay P, Zesiger V, Klohn A, Soguel L, Mpinga EK, Vu N, *et al.* Development and evaluation of a community immersion program during preclinical medical studies: A 15-year experience at the University of Geneva Medical School. *Adv Med Educ Pract* 2013;4:69-76.