

**Experiential Learning and Research for Undergraduates in Public Health: Transferring
Focus Group Research to Peer Reviewed Journal Publication and Public Health Practice**

by

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Abstract

University collaboration with public health agencies is a proven effective way to connect students and faculty to real world local public health problems (Neri et al., 2014; Greece et al., 2018). An undergraduate capstone Senior Seminar course worked with a Minnesota state agency and community initiative, the Mercury in Skin Lightening Products Workgroup to address the use of toxic skin lightening products in Minnesota. Students conducted focus group research with Hmong college students in St. Paul, MN on the topic of skin lightening products. Since the end of the course, six students wrote a research paper that was accepted for publication in a peer reviewed journal and applied their knowledge into public health practice (Keefe et al., 2018). This article explores the high impact of courses with community and agency collaborations with emphasis on the potential to publish findings from research with undergraduates.

Keywords: Undergraduate, Public Health Major, Hmong community, Mercury, Skin lightening products, Focus groups, Experiential learning and research, State/University Partnerships/Collaborations

Introduction

Undergraduate public health education has experienced growth, attention and recommendations for best practices in recent years (Garnett, 2017; Gardner, Ronzion, & Snelling, 2018; Greece et al., 2018). In an effort to increase student exposure to, and experience with, applied public health concerns, a liberal arts undergraduate Public Health Sciences program

sought to adapt the previous Senior Seminar with an emphasis on professional development. Recent work demonstrates the effectiveness of engaged experiential learning and research opportunities (Gardner, Ronzion, & Snelling, 2018; Greece et al., 2018). Collaboration with public health agencies is a proven effective way to connect students and faculty to real-world local public health problems (Neri et al., 2014; Greece et al., 2018). In meetings with agencies that serve the community, namely the Minnesota Department of Health (MDH) and Minnesota Pollution Control Agency (MPCA), the authors discovered an opportunity to further the work of an under-resourced interagency and community initiative to address the use of toxic skin lightening products in Minnesota, the Mercury in Skin Lightening Products Workgroup. Initial discussions indicated a need for targeted research to serve as a foundation for a public health educational outreach campaign. The Hmong community was of particular interest to MDH and MPCA because of previous actions taken to collect mercury-based products at a market predominantly serving the Hmong community in St. Paul, Minnesota (Norfleet, 2014; Minnesota Pollution Control Agency, 2017). Further, preliminary results from MN FEET, an MDH biomonitoring study measuring mercury, lead, and cadmium in Minnesota women and their babies, identified Hmong women as having elevated mercury levels as a result of skin lightening products (MDH, 2016; MDH, 2018). Additionally, some educational outreach work had been done in the Somali community (Adawe & Oberg, 2013). The authors connected a capstone Senior Seminar course with MDH and MPCA staff from the Mercury in Skin Lightening Products Workgroup to conduct focus group research with Hmong college students in St. Paul on the topic of skin lightening products. Since the end of the course, six students in the class volunteered to extend their course experience to write a research paper, recently accepted for publication in a peer reviewed journal (Keefe et al., 2018); three applied for grants to conduct

their own research; and one has been contracted for their services by MDH doing community outreach. These additional actions demonstrate the high impact of courses with community and agency collaborations.

The course was designed four weeks before the start of the semester when the professor and Workgroup were first introduced to one another. The idea for a course where students would conduct background research, learn focus group methodology, conduct focus groups, code and analyze focus group data, and finally develop evidence-based public health outreach materials was quickly developed. Students would have the opportunity to apply their undergraduate Public Health Sciences education to a public health concern impacting their local community, and the Mercury in Skin Lightening Products Workgroup would gain focus group data, analysis and a foundation of materials to begin a targeted public health outreach campaign. Neither the professor nor Workgroup had ever participated in a state/university collaboration of this type. This article explores that collaborative process, its outcomes, and suggestions for future collaborations.

Public Health Need

Mercury is an ingredient found in skin-lightening products used by the Hmong community in St. Paul, Minnesota (Norfleet, 2014; MPCA, 2017). Globally, mercury is considered one of the top ten chemicals of public health concern (World Health Organization, 2018) and is commonly found in imported skin-lightening products (McKelvey et al., 2011; CDC, 2012; Adawe & Oberg, 2013; Copan et al., 2015). Exposure to mercury can cause headaches, irritability, hypertension, neurological and renal damage (CDC, 2012; Copan et al., 2015). The Food and Drug Administration (FDA) considers cosmetics adulterated if they contain at least 1 part per million (ppm) mercury (Requirements for specific cosmetic products, 2017).

Minnesota also prohibits the sale of cosmetics containing mercury (Mercury emissions reduction, 2016). Skin lightening products are sometimes used multiple times per day and may be used by women throughout pregnancy and breastfeeding (CDC, 2012; Adawe & Oberg, 2013; Copan et al., 2015). They can cause elevated mercury levels through inhalation as the mercury evaporates from the product, even in household members who do not use the products (CDC, 2012; Copan et al., 2015). Men are also users of skin lightening products (Li et al., 2008; NPR, 2009).

Skin lightening is a ten-billion-dollar industry (Lopaciuk & Loboda, 2013) and is forecasted to become a twenty-three-billion-dollar industry by 2020 (Global Industry Analysts, 2009). Many users of skin lightening products are people of color because of the high demand for whitening products, especially Asian consumers (Lopaciuk & Loboda, 2013). People of color worldwide are negatively impacted by racism and colorism. Colorism is defined as discrimination that privileges light-skinned people over people with darker skin (Hunter, 2005; Hunter, 2007). The shade of a person's skin can affect people in jobs and earning potential, education opportunities, social status, perception of beauty, and marriage potential (Hunter, 2007; Hochschild & Weaver, 2007; Li et al., 2008).

The Mercury in Skin Lightening Products Workgroup was formed at the request of community partners to increase awareness of the hazards of skin lightening products. MDH led the group, which consisted of staff from MDH, MPCA, local public health and environmental agencies, and community partners. Each agency volunteered staff time; however, no full-time staff or financial resources were available for this effort. Minnesota does not have mandatory reporting or state-specific guidelines for mercury testing. Therefore, progress was and is slow, despite many agencies and individuals allocating whatever resources possible. The Workgroup's

stated purpose is “To reduce exposures to mercury-containing skin-lightening products through community education and the development of outreach materials.”

Academic/Curriculum Need

Students in the undergraduate Public Health Sciences program do not have clear pathways to research opportunities, although an independent research project is one way to fulfill the Liberal Education as Practice requirement for the major. A major challenge is it is a large major (50+ students) with only 1.5 faculty appointed to the program. The most direct way of accomplishing the goal of providing equitable access to research opportunities is to incorporate it into a course.

This course was explicitly designed to transform the existing capstone experience for Public Health Science majors moving from a model of professional development towards creating applied experiential learning and research to address a public health problem in the local community (Garnett, 2017; Gardner, Ronzion, & Snelling, 2018; Greece et al., 2018). Students were expected to synthesize their previous coursework, execute a public health methodology, and learn the process of translating public health research into outreach deliverables.

Course Description

This public health capstone Senior Seminar was designed as an experiential learning and research experience course to address the need for targeted educational outreach among the Hmong community about mercury in skin lightening products. Twenty students registered and completed the course. Thirty percent (n=6) of students identified as being part of a community impacted by the use of skin lightening products. All students conducted background research, learned focus group methodology, conducted four focus groups with Hmong college students in St. Paul, Minnesota, coded and analyzed focus group data, and developed evidence-based public

health outreach materials. Students were expected by the Mercury in Skin Lightening Products Workgroup to develop a variety of creative outreach materials that could be further refined for statewide use. The Mercury in Skin Lightening Products Workgroup interacted with the students five times to present the issue, provide feedback throughout the process, and engage in the presentation of final outreach materials developed by the students.

Outcomes

Students reported learning skills with this research project they never anticipated. Students said they hardly thought about their grade because they were more focused on producing usable results and products for the Mercury in Skin Lightening Products Workgroup and the Hmong community.

Outcomes beyond the timeline of the course surfaced the following year in four ways:

Evaluations: Upon completion of the course, MDH provided an evaluation tool to measure students' interest in community health and the viability of similar, future collaborations. Sixty percent (n=12) of students completed the optional evaluation. All students who completed the evaluation stated that they gained more knowledge about the Hmong community and experience in focus group evaluation. Ninety-two percent (n=11) of students stated after the course experience, they would consider working for the government, as well as for community organizations. An internal MDH goal is to grow and support the future generation of public health professionals who should reflect the diverse communities within the State of Minnesota.

Additionally, 68% (n=13) of students completed the optional course evaluation provided by the University. One hundred percent of those students stated the course provided a valuable learning experience. Students shared, "I have never experienced a class that demonstrated such a strong aspect of active learning," and "I was challenged in so many aspects such as working in

teams, collaborating with MDH and MPCA and creating useful and meaningful materials that address real problems in the community.” All students have articulated how much they appreciated the opportunity to conduct engaged and active learning and research.

Research Article: Opportunities to publish research articles are limited for undergraduate students, particularly in peer reviewed journals (Griffiths, 2011; Hartley 2014). Soon after the course began several students asked if there would be a chance to publish the findings from the course. Six students and the professor co-authored a research article which was accepted for publication in the December 2018 Hmong Studies Journal (HSJ) (Keefe et al., 2018). The success of this course, beyond the class, is a testament to the potential experiential learning and research opportunities present for students, instructors and public health agencies, particularly for publication. Student interest in publishing the focus group findings served as the impetus for an informal “how to write a research article” seminar during the January following the Fall 2017 course, when the University offers an optional four-week January Term. Research centered on examining the behaviors, experiences, and attitudes towards skin lightening products of Hmong college students in St. Paul, Minnesota. Findings revealed familial and community relationships, generational differences, and American and contemporary Korean (K-pop) cultures influence Hmong American beauty ideals. This research contributes significant knowledge to our understanding of how and why skin lightening products are used in the Hmong American community and is vital for developing educational outreach within the Hmong community.

The professor taught the students about the article writing process during the January term. The professor and students began with an agreement about authorship and expectations. Because students would have little time or capacity once the Spring semester began and after graduation, the professor agreed to take on the long-term responsibility for publication

(communications with journal, revisions, resubmission, etc.). Students agreed to write, edit, and meet twice per week for four weeks. The professor and students identified an appropriate journal and how to structure the article to fit the journal's format and approach. Students worked independently and collaboratively to identify appropriate journals. As a group, they discussed student suggestions and agreed that their first choice of publication venue was HSJ. Next, students read articles previously published in the journal to establish a format for their own article.

The next step was to convert the deliverables students produced for the course, specifically the reports for the Mercury in Skin Lightening Products Workgroup, into a research article. Together students and professor outlined the proposed article in a format that reflected HSJ guidelines and each student volunteered to work with the course materials to write the first draft for a section(s) of the article. Students began the writing process by referencing their previous work. Once the draft was complete, each student and the professor began the editing process, including feedback and critique. Each meeting, the professor and students addressed topics to move the article forward, such as items that were missing in the article or the need for particular sources. Each student claimed tasks to complete before the next meeting. In week three, the meetings shifted from writing on their own to writing together with the professor because of the increased number of questions and need for more consistent guidance as the manuscript took shape. Writing sessions lasted three to four hours in a shared Google document. Some students focused on the writing and editing process, while others took on tasks such as compiling the bibliography, checking journal requirements, and fact checking. All students contributed substantially to the writing and development of the article. By the end of week four of writing, the article was 85% complete and was submitted four months later. The professor and

students received “revise and resubmit” communications from the editor in September 2018. The professor took responsibility for the few minor revisions needed and submitted the final manuscript in November 2018.

Grants and Further Research: Inspired by their course experience, two student teams applied for and were awarded a Truth, Racial Healing & Transformation mini grant to conduct their own research. One team proposed to look at skin lightening in their own community—the Somali community. The two students examined the behaviors, experiences, and attitudes towards skin lightening creams among members of the Somali community in the Twin Cities. Specifically, they investigated the impact of colonialism and the role of generational trauma as both youth and older Somali immigrants take part in the use of skin lightening creams. Another student in the class partnered with a student external to the class for a Truth, Racial Healing & Transformation mini grant to conduct research on the “myth of the model minority” among Asian Americans by interviewing Asian American graduate students at a local university. These three students of refugee and immigrant families who previously did not articulate an interest in research, or identify themselves as researchers, applied for a grant and conducted their own research. Taking ownership of their own project empowered these students with skills and experience, making them more likely to pursue research, a field in need of more diverse practitioners.

Community Outreach: The Mercury in Skin Lightening Products Workgroup has limited resources for community education and outreach. By collaborating with the course, the Workgroup expected a variety of draft community outreach materials to be developed by the students that the Workgroup would select from and refine for statewide use. The students’ brand ‘Love Your Skin’ was selected by the Workgroup to be used in statewide educational materials.

Within a year after the course, the Workgroup focused its education efforts to be present at a large, cultural festival attended by approximately 15,000 people, predominantly of the Hmong community. Students associated with the course were invited to engage with the community, side-by-side with state health educators. The Workgroup intends to refine and utilize some of the educational products developed by the class as community outreach efforts continue. Radio is a popular form of communication in the Hmong community. The next educational product the Workgroup plans to develop further based on the students' work will be a series of audio public service announcements.

Job Opportunities. One of the students who volunteered their time during the cultural festival excelled at community outreach and impressed staff from another health program within MDH. The student was contracted for their consulting services which allowed the student to gain unique work experience while continuing to search for a full-time position.

Upon graduation, most students pursued full-time public health positions, including positions within MDH. To elevate future public health practitioners, MDH provided several interested students one-on-one career coaching to improve their resume and cover letter skills. Other students went on to pursue a Master of Public Health degree.

Suggestions for Future Collaboration

- Instructors should present to students at the start of the course the potential outcomes (publication, continuing collaboration, job opportunities) that may arise as an additional motivator
- Consider costs of the research methodology. For example, focus group best practices to include incentives, food, transportation, and childcare, if needed (the cost of this course was approximately \$800 for gift cards for incentives, food and beverages)

- Seek funding in advance of the course from the academic institution or collaborative partner(s)
- Apply for small grants in the community up to large grants such as the NIH Research Enhancement Award (R15)
- At some universities it might be possible to add a materials or lab fee to supplement costs while considering the equity of the fee and students financial access
- Frequent contact between collaborative partner(s) and students will increase engagement and trust throughout the course
- Remain engaged with collaborative partner(s) to continue growing the work beyond the single course, but over the years of partnership

Conclusion

A project that reflects current societal needs allows students to gain insight into real world issues with the opportunity to continue the work beyond the course. Instructors should consider experiential learning as an option that helps students better understand if a particular field of work is best for their interest and strengths. Organizations should consider collaborating with instructors pursuing experiential learning to introduce the next workforce generation to real world issues. Publication, future research, and job opportunities are all examples of positive, unintended outcomes from the original course collaboration.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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