

Infusing Health Disparities Awareness Into Public Health Curricula at a Rural Midwestern University

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Abstract

Preventable differences in health outcomes between U.S. population subgroups, related to factors such as race or ethnicity, income, and geographic location, are troubling. Geographically, rural American communities experience higher rates of adverse health conditions when compared with urban areas, further widening disparities in health outcomes. Such disparities necessitate the creation of effective curricula to enable students to address the health needs of underserved populations. By intentionally incorporating health disparities awareness content into the curricula, undergraduate and graduate public health programs can play an integral role in developing conscious health practitioners to help close gaps in health outcomes. Moreover, rural health courses may increase students' interest in rural health careers. This article presents the process and results of faculty efforts to design and deliver health disparities-related education in undergraduate and graduate public health courses at a rural Midwestern U.S. university. Various teaching development programs inspired faculty to use intentional instructional approaches to teach students about health disparities. Consequently, faculty incorporated a variety of assessment methods and teaching styles to infuse health disparities awareness content into public health courses. Results from students' course evaluations and reflections are discussed along with lessons learned and implications for future pedagogical directions.

Keywords

health disparities curriculum, undergraduate public health, curriculum development, public health

Introduction

Health disparities are differences in health outcomes between distinct segments of the population, related to factors such as race/ethnicity, socioeconomic status, geographic location, or other factors historically linked to discrimination or exclusion (U.S. Department of Health and Human Services, 2008). Differences in rates of illness, death, chronic conditions, risky behaviors, and quality of life in the United States have been associated with various sociodemographic factors (Centers for Disease Control and Prevention [CDC], 2013). For example, there are persistent disparities in mortality between African Americans and Whites in the United States, evidenced by estimated life expectancy rates of 75.5 and 79.1 years, respectively (Arias, Heron, & Xu, 2016). Fair or poor self-rated health is reported by greater proportions of racial/ethnic minority groups (except Asian/Pacific Islanders), those with lower levels of education, persons with lower annual income, and those who are unemployed, when compared with non-Hispanic Whites, those with higher levels of education, individuals with higher income, and those who are employed (CDC,

2000). Geographically, rural American communities have higher rates of morbidity and mortality, poorer health outcomes such as low birthweight, teen pregnancy, childhood obesity, preventable hospital stays, cancer, and diabetes incidence (Meit et al., 2014), and greater rates of risky health behaviors such as poor diet, physical inactivity, and smoking, when compared with urban areas (Eberhardt & Pamuk, 2004; Hartley, 2004).

As eliminating health disparities is a leading public health (PH) priority in the United States (U.S. Department of Health and Human Services, n.d.), it is imperative that both undergraduate and graduate PH programs intentionally incorporate health disparities content. Moreover, there are reported benefits to introducing health disparities courses earlier in the educational pipeline to engage, prepare, and motivate a future health care workforce

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(Benabentos, Ray, & Kumar, 2014). While undergraduate PH programs in the United States are increasing (Association of Schools and Programs of Public Health, 2015), there is a suboptimal amount of PH courses that contain substantial health disparities content (Benabentos et al., 2014). However, other health professions have designed curriculum to stimulate student interest in rural health practice (Critchley, DeWitt, Khan, & Liaw, 2007; Lilley, Clay, Greer, Harris, & Cummings, 1998; Stratton, Geller, Ludtke, & Fickenscher, 1991; Worley, Silagy, Prideaux, Newble, & Jones, 2000). Moreover, there have been calls for more research into the undergraduate experience of rural health education (Orpin & Gabriel, 2005).

The purpose of this article is to describe faculty efforts to develop and deliver health disparities-related education in undergraduate and graduate PH courses at a rural, Midwestern American, 4-year public university. This university's College of Health Professions launched the Bachelor of Science in Public Health (BSPH) and Master of Public Health (MPH) degree programs in 2014. Part of the PH programs' vision statement is that faculty, graduates, and students will be the preferred providers and partners in interprofessional education, evidence-based practice, and transdisciplinary research that advance population health, particularly in rural areas. Various faculty, staff, and administrator efforts culminated in the design, delivery, and evaluation of the PH courses described in this article.

Method

Curriculum Design and Professional Development

Five faculty were assigned to develop BSPH and MPH courses for the new PH programs in 2014. Health disparities awareness content was integrated into BSPH and MPH courses that began in spring 2015. Teaching activities were implemented in undergraduate and graduate courses delivered either asynchronously online or face-to-face. Courses described are five required courses and one elective for PH majors.

Teaching development programs can enrich faculty members' teaching, stimulate their enthusiasm, and increase their knowledge, attitudes, and skills (Steinert et al., 2006). Various internal and external professional development opportunities motivated some PH faculty to employ instructional approaches to enhance student learning about health disparities. Some faculty participated in a Junior Faculty Fellows Program (JFFP), which inspired efforts to integrate and evaluate the effect of health disparities awareness in their PH courses. The JFFP initiative helps second- and third-year faculty develop a project relevant to their teaching, scholarship, or service within a supportive and accountable learning community and earn professional development incentives on project completion. Some faculty also attended an interactive university workshop in 2015 designed to motivate

faculty to examine privilege, power, and identity in teaching and student learning and to enhance inclusive teaching practices. Consequently, insights gained from this workshop motivated faculty to create reflective assignments for students to address health disparities-related course learning outcomes. In a 2016 workshop, faculty explored inclusion- and diversity-related topics affecting educators and students; they conceptualized how social identity, intersectionality, power, and privilege create overlapping systems of disadvantage that contribute to health disparities. Some faculty presented their health disparities research at the university's annual Best Practices Day in 2015 and Conference on Aging in 2016. Faculty also served as guest speakers in a global PH course and presented on health care in Nigeria, Sri Lanka, and South Africa. Some faculty also secured sponsored, external training at an intensive summer workshop intended to provide further professional development and to "support and advance the career development of underrepresented minority investigators committed to the elimination of health disparities" (HELI, n.d., para. 1). These workshops and experiences propelled faculty to use intentional instructional approaches to raise health disparities awareness among students.

Course Elements and Instructional Delivery

Incorporating a variety of assessment methods and teaching styles, faculty made focused attempts to infuse health disparities awareness content into various undergraduate and graduate PH courses (Table 1). Course learning outcomes, lecture topics, and objectives were designed to build global awareness of existence of, contributors to, and consequences of health disparities.

Various teaching modalities and learning activities were used to engage students and educate them about contemporary health disparities issues. After completing a university training, one faculty member used Clickers technology to administer a "Health Equity Quiz" to gauge students' understanding of course material. Clickers technology allows instructors to interactively pose verbal questions to students and receive immediate, anonymous responses (Bruff, 2009). Clickers have been valued for engaging students during lectures and improving students' problem-solving and critical thinking skills (Russell, McWilliams, Chasen, & Farley, 2011). Before clickers were used, students were instructed to view a documentary about racial and socioeconomic inequalities in health (Adelman, Herbes-Sommers, Smith, & Crawford, 2008) and write a reflective paper. Administration of the "Health Equity Quiz" followed the general clicker procedure for conceptual understanding (Crouch, Watkins, Fagen, & Mazur, 2007). Therefore, the instructor identified any misconceptions about health equity, had students engage each other to discuss differences in thinking, and helped everyone in the class

Table 1. Health Disparities Curriculum Components.

Course	Sample course learning outcome	Assessment method/ learning activity	Lecture topic	Sample lecture objective	Course delivery format
Health Promotion & Education (Undergraduate)	Integrate multilevel points of intervention in addressing public health issues, particularly those related to health disparities	Social environmental assessment paper; Article critique; Quiz; PowerPoint presentation	Physical activity behaviors	Identify social influences that contribute to ethnic health disparities in physical activity behavior among Latinas	Face-to-face (F2F) and online
Public Health Services in Rural Populations (Undergraduate)	Discuss the sociobehavioral determinants of health and health care disparities in rural populations	Discussion board posting; Article critique; Quiz; PowerPoint presentation	Determinants of health among African Americans in the rural Deep South	Reflect on the social and physical determinants of rural health disparities	F2F and online
Cultural Diversity & Competence in Public Health Practice (Graduate)	Analyze the factors that prevent adherence to health care treatments among different cultures	Documentary about racial and socioeconomic inequalities in health; Reflective paper; Discussion board posting; Quiz; PowerPoint presentation	Health disparities and social determinants of health	Define health disparities and explain the social determinants of health that lead to health disparities	Online
Introduction to Public Health (Undergraduate)	Describe the basic concepts of <i>at least two</i> of these public health (PH) areas: (a) PH law, policy, and ethics; (b) PH data and communication; and (c) Health disparities	Article critique; Video about racial/ethnic disparities in adverse birth outcomes; Video about disparities in socioeconomic status (SES); Visualization activity	Introduction to health disparities; Focus on disabled populations; Focus on racial/ethnic minorities; Focus on low SES groups	Identify some determinants of health disparities	F2F and online
Maternal and Child Health (Undergraduate)	Apply the basic concepts relating to various cross-cutting topics in maternal and child health, including health disparities, women's health, children with special health care needs, environmental health, nutrition, oral health, and global health	Short essay questions regarding maternal and child health disparities; Videos about disparities in preterm birth prevalence among African American and White infants	Health disparities and global maternal and child health	Discuss health disparities related to pregnancy, reproductive cancers, HIV, and lesbian, gay, bisexual, transgender, and queer health	Online
Public Health Concepts (Graduate)	Describe the basic concepts of <i>at least two</i> of these PH areas: (a) population dynamics and control; (b) program planning, implementation, and evaluation; (c) systems thinking and leadership; and (d) health disparities	Article critique	Health disparities	Discuss health disparities that are based on race/ethnicity, low SES, and disability status	Online

clarify misconceptions and reach a consensus on course material.

In another instance for the health promotion class, there was small and large group discussion about the Flint Water Crisis, an incident in which more than 100,000 residents were potentially exposed to high levels of lead in the drinking water (Kennedy, 2016). The instructor provided reflective questions on strategies to address root causes of health disparities, brief videos that discussed implications of the water crisis, a brainstorming activity to consider strategies to address the issue, and an opportunity for students to reflect on lessons learned from the lecture.

In the rural PH course, guest lecturers were invited to illustrate the cultural diversity of PH practice and to teach students about issues related to rural health disparities. Guest lecture topics included maternal and child health and mental health in rural areas, influence of rural location on individuals living with disabilities, and leadership challenges in delivery of rural health care services. Rural health issues explored through lecture and use of multimedia included rural–urban differences in cancer screening (Cole, Jackson, & Doescher, 2012), use of telehealth to treat mental health in rural areas (Mehrotra et al., 2017), oral health barriers in underserved populations (Rosenbaum, 2012), and effect of superstore closures on rural food insecurity. Students were also offered extra credit opportunities to attend diversity-related lectures and exhibits at the university. Overall, these intentional instructional strategies aimed to teach and reinforce concepts about presence and impact of health disparities within rural American society.

Furthermore, in a PH introduction course, health disparities was introduced as a special topic later in the semester, after students had already explored the course's foundational content. During "Health Disparities Week," students were exposed to an introduction to health disparities as well as focused content on racial/ethnic disparities, disparities related to intellectual disabilities, and disparities based on socioeconomic status (SES). Learning activities that supplemented lecture included videos highlighting racial/ethnic disparities in adverse birth outcomes as well as SES disparities, an article critique in which students were asked to evaluate an article that examined a health disparity, and a visualization activity. The faculty teaching this course had attended a professional development seminar regarding benefits of using visualization to promote deeper student learning and retention and subsequently applied this innovative strategy to help students better understand the complex concept of health disparities. During this activity, which occurred in the second class session of the week, students were provided crayons and sketch paper and were instructed to illustrate how they envision the notion of "health disparity" through their own lenses. Students

were then asked to pair up and share their pictures with each other. After the activity, students were also invited to share their picture with the class, if they felt comfortable doing so. Additionally, the same faculty member taught an online graduate PH concepts course that provided similar health disparities content as the undergraduate PH course. Students were also expected to critique a peer-reviewed journal article that explored a health disparity of interest.

Teaching online can be transformative when instructors encourage students to think about their own experiences and biases and expand student awareness about inequalities and oppression (Meyers, 2008). Several PH courses are offered online, including a graduate multicultural and diversity competence class. In this class, students completed a self-exploration assignment in which they specified the cultural groups with which they identified, selected a cultural group that is salient to them, named a culture they wanted to know more about, and proposed steps they would take to learn more about another culture. In another assignment, students had to write a reflective paper in response to a documentary on how social conditions affect population health (Adelman et al., 2008) and discuss contributing factors to disparities in health status and health care utilization. Discussion board assignments required students to view documentaries that explored factors affecting the health of immigrants that come to and stay in the United States (Rios, Rodriguez, & U.S. Public Broadcasting Service, 2008), and the relationship between disempowerment, the uprooting of Native Americans' cultural traditions, and health (Fortier, January, & U.S. Public Broadcasting Service, 2008). After reviewing the documentaries, students answered reflective questions and responded to discussions of at least two classmates. In an online case study activity, students described cultural and religious factors to consider when developing breast cancer prevention programs among immigrant women (Perez & Luquis, 2014).

Furthermore, maternal and child health is an online elective course for undergraduate students. After students learned foundational concepts of maternal and child health, including the Life Course Perspective, they were exposed to maternal and child health disparities as a cross-cutting topic. Learning activities in this module included narrated lecture, a video discussing persisting disparities in preterm birth among African American and White infants, and short essays questions regarding maternal and child health disparities. Students in this course had the unique opportunity to better understand health disparities within the context of the Life Course Perspective, in that disparities that exist even before the birth of a child and during early childhood can continue and even widen over the life span, affecting the individual's long-term health and the health of subsequent generations (Lu & Halfon, 2003).

Table 2. Students' Qualitative Responses to Course Evaluations.

"Learning about theories and models is not always very exciting; however, [professor] does a great job in helping us understand the material. [Professor's] use of YouTube videos, projects, assignments, etc., make the class more interesting. I especially enjoyed discussing the Flint water crisis and would like to have more discussions about current events in Public Health."

"I really enjoyed this class and thought that it really made me more aware of the disparities in rural areas. I thought [professor] did a great job teaching it, I love that [professor] incorporate(d) so many different things and not just lectures, it really makes the class a lot better."

"I found it an excellent course in preparing for situations in rural Public Health."

Course Evaluation

In some courses, students completed institutional review board–approved pre- and postsurveys to assess effect of intentional instructional approaches on their knowledge and attitudes about health disparities. The research project was supported by the JFFP initiative. Data collection for this research is ongoing.

To assess instructor performance for all courses, students were asked to complete online IDEA evaluations, which are student ratings of various instructor and course elements (IDEA, 2017). Typically, faculty collect IDEA evaluations at the end of each semester. A department head or tenure committee member was also present during face-to-face class sessions or was granted access to an online course module and completed a tailored observation instrument that assessed the instructor in areas such as teaching style, student engagement, organization, and preparation.

Results

Course Evaluations and Teaching Observations

Faculty observed that instructional approaches to raise awareness about health disparities promoted student learning and increased student engagement. Overall completion rate for online IDEA evaluations in applicable courses averaged 92% and showed student progress on relevant outcomes and positive student experience. The average course rating for teaching effectiveness for the courses that integrated health disparities content was 4.4 (out of a 5.0 scale), as compared with the average rating of 3.8 for all courses in the program. Students also provided qualitative responses to the IDEA evaluations as it related to learning about health disparities in their courses. A sample of students' qualitative responses are provided (Table 2). Additionally, feedback from teaching observations were positive and provided faculty an opportunity to discuss feedback with the department head and tenure committees.

Observed Outcomes for Students

Initially, the faculty who taught the PH introduction course realized that students were not showing much

interest in health disparities content. It was then acknowledged that as health disparities was covered later in the semester, most students were likely feeling "burned out" and were not as receptive to new information at this stage. Therefore, the visualization activity served as a refreshing change from the traditional lecture format, and it was observed that students genuinely enjoyed the activity. Interestingly, some students who were typically less engaged took the initiative to share truly creative and thought-provoking illustrations with the class. By providing an opportunity to help students emotionally connect with health disparities concepts as well as create a sense of community with the shared reflections of their illustrations, the visualization activity will help students better retain and apply this information in the future. Similarly, in other PH courses that addressed health disparities, students' reflective assignments illustrated profound introspection on health disparities-related content (Table 3).

Professional Development

Faculty were able to apply professional development incentives earned from professional development workshops to further their research and attend conferences to broaden their teaching knowledge and improve student learning. Additionally, peer-reviewed conference proceedings were submitted to disseminate efforts to teach health disparities subject matter in PH courses.

Discussion

The integration of health disparities into PH curricula in the United States has not been well documented. This article contributes to the literature by describing a faculty-led effort at a rural PH program to intentionally incorporate this content into the curriculum. Based on student feedback and reflections, as well as instructor observation, this experience for the students and faculty has been positive and enlightening. The predominantly young, Caucasian population of students was, perhaps for the first time, exposed to the concept of health disparities and was able to better appreciate the wide range of national and global health disparities. Innovative learning activities, such as Clickers, videos,

Table 3. Excerpts From Students' Reflective Assignments.

Course	Selected student reflections
Cultural Diversity & Competence in Public Health Practice (Graduate)	<ul style="list-style-type: none"> • “A moment in the film that affected me was learning that the health status gradient in America is the most unequal of all the democratic countries in the world. It made an impact, as it was shocking to realize how we utilize our resources compared to other nations.” • “Another factor mentioned in the film that leads to health disparities is race. Surprisingly, even wealthy African Americans will have worse outcomes than Whites. I would have expected this to be due to genetics, which was disproven by the fact that this is not the case in countries where discrimination is less prevalent. According to the film, the burden of discrimination toward African Americans over time can change biological markers causing an increase in susceptibility to illness.” • “One thing that I did not know was that some people live longer, healthier lives than others because of their income, education, and location. . . . This issue challenges me to think differently and to not think that everyone in America lives the same lifestyle as I do.”
Health Promotion & Education (Undergraduate)	<ul style="list-style-type: none"> • “Something that was extremely surprising to me in the film was that even though we spend half of all the health dollars in the world, more babies die in their first year of life in the United States compared to many other different countries. I did not know this and I was shocked it was true.” • “There were many surprising facts and research that was represented in the film that was shocking and surprising, though if I had to name the most influential to me was that college graduates live two and a half years longer [than] non-graduates. That really surprised me because I always correlated college graduates with higher income and social status but never put two and two together with the fact that it can also affect health.” • “Something that surprised me and also disturbed me was how African Americans tend to live shorter lives even if they are very well off. The moment in the film that relayed this message was when the African American doctor who is of the upper class said that his life expectancy is still shorter than the average White person. I found it interesting that this is in part due to racism. For instance, he told a story of when he walked into an elevator and a woman grabbed her purse and held it close to her as if he would steal it. If I understood correctly, an act such as this can inflict a moment of stress on an African American. When someone is under stress they release cortisol, which over time can do a great deal of bodily harm.”
Public Health Services in Rural Populations (Undergraduate)	<ul style="list-style-type: none"> • “It was very eye opening to know that only 10% of dentists in Florida participate in Medicaid care for the underserved population. Most importantly, it was very interesting and surprising to know that some kids that were at least 12 years of age have never seen a dentist before or some of the kids might only see a dentist once a year causing kids at like age 5-6 to have crowns, [fillings], and other major dental procedures . . .” • “So much about this film affected me. . . . I am very sensitive to the plight of others and these films we are watching and things we are learning in this class are very sad. I knew of some things coming into this class, like the food disparities and dental issues. I think it's great that we are learning these things because we all seem to be living in our own “bubble” and aren't nearly as grateful as we should be for what we have available to us. We take for granted our access to good food, medical centers, doctors, specialists, good jobs, good schools, many dentists, etc.” • “It is very hard for these people in rural areas to get decent paying jobs, pay their regular bills, and then pay for their dental bills. Life is hard and it's even harder for people who don't have money. Teeth are so important for the rest of your health, most people don't realize it until it's too late . . . and then the pain never ends. I wish I could help these people.”

and visualization art, were received favorably by students, and likely enabled them to better connect with the material, each other, and the discipline.

Despite the positive impact of infusing health disparities into the PH curriculum, some limitations must be considered when interpreting our findings. First, this PH program is fairly new. Also, only two faculty members within the program intentionally included health disparities in their curricula, thereby biasing findings by their course content and teaching styles. Furthermore, the maternal and child health course was an elective course, and students who did not enroll in this course were unable to learn about health disparities in this context. Additionally, faculty were unable to evaluate if

students experienced a statistically significant change in their knowledge of health disparities in some of the courses, as they did not collect baseline and post-course survey data.

Nevertheless, these findings have important implications for future pedagogical directions. First, as health disparities knowledge will play an increasingly integral role in preparing students to successfully interact with vulnerable populations and address challenges related to health disparities as PH practitioners, this content should ideally be highlighted in every PH course, both at the undergraduate and graduate levels. Second, this effort can be extended to create a dedicated Health Disparities course within the program, therefore underscoring the

significance of this content and providing deeper insight into health disparities issues and potential approaches across various PH domains and populations. Third, PH faculty could collaborate with other health profession disciplines (e.g., School of Nursing) and nonhealth disciplines (e.g., Education) to share resources and create health disparities–related course content, joint projects, and university events; these interdisciplinary ventures would be instrumental in garnering a wider set of future stakeholders to invest in eliminating health disparities (Benabentos et al., 2014). Fourth, the use of academic service learning and community-based participatory research have been shown to promote student engagement within the community, facilitate application of course concepts to real-world situations, and increase cultural competence among students (McElfish et al., 2015; Metcalfe & Sexton, 2014). Fifth, we should consider strategies to incorporate curriculum on lesbian, gay, bisexual, and transgender (LGBT) health disparities (Lim, Brown, & Jones, 2013), as LGBT disparities may be exacerbated and stigmatized in rural populations (Whitehead, Shaver, & Stephenson, 2016). Finally, we need to more extensively integrate global health disparities and challenges as well as current global (i.e., World Health Organization) resolutions to promote health equity (United Nations Committee on Economic, Social, and Cultural Rights, 2000).

After reflecting on preliminary findings, PH faculty at this rural Midwestern university strive to further engage fellow faculty, university colleagues, and community members to more comprehensively integrate health disparities content into course curricula across the program and university through the utilization of innovative learning activities, including academic service learning. These efforts will produce future PH professionals who are better prepared to address rural health disparities in their surrounding community and broader health disparities at the national and global levels.

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