HHS Public Access

Author manuscript

Int J Nurs Health Care Res (Lisle). Author manuscript; available in PMC 2023 October 12.

Published in final edited form as:

Int J Nurs Health Care Res (Lisle). 2023 ; 6(1): . doi:10.29011/2688-9501.101388.

Addressing health inequities through simulation training and education in rural and tribal communities

Regina S Eddie,
School of Nursing, Northern Arizona University, Flagstaff, AZ

Laura Karntisching,
School of Nursing, Northern Arizona University, Flagstaff, AZ

Bobby Eccleston,
School of Nursing, Northern Arizona University, Flagstaff, AZ

Anna S Schwartz
College of Nursing, University of Nebraska Medical Center, Omaha, NE

Abstract

Background: The nursing shortage is serious and getting worse in medically underserved areas. Nursing education needs to include faculty education in simulation-based education that focuses on public health and cultural education. New nurse graduates are inadequately prepared and need additional training to provide culturally appropriate care to varied and rural populations.

Method: This project used simulation-based education and rural clinical placements to enhance the training and education needs of faculty, students and community partners to better address the health care needs of people living in rural and medically underserved areas of the Navajo Nation and northern Arizona.

Results: The project increased knowledge and interest among faculty and community partners on simulation-based education as well as positive student learning experiences.

Conclusion: Public health and culture can be integrated into simulation-based education. Partnerships with tribal communities can play a valuable role in nursing education.

Keywords

Rural; American Indian; Simulation training; Cultural competency; Public health; Partnerships

Background

Maintaining a strong nursing workforce is challenging in a variety of settings across the U.S., but no more so than in rural, medically underserved areas, including American Indian (AI) communities [1,2]. Such rural areas are situated in Northern Arizona and home to the Navajo Nation, the most populous and largest reservation land area in the U.S., which spans across northeastern Arizona, southwestern Utah, and northwestern New Mexico [3]. Within these lands, rural and AI people experience exceptional health challenges that include a disproportionate higher burden of preventable and chronic diseases (e.g., obesity, diabetes and cardiovascular disease) and disabilities, and lower life expectancy compared to

urban areas [2,4]. Further, access to quality care is limited by residents' lower education levels, lower socioeconomic status (69% poverty rate), lack of reliable transportation, long distance to reach health care facilities, poorly maintained unpaved roads, cultural insensitive encounters when receiving care, difficulty securing appointments, long waiting times when receiving care, and limited or no access to specialty care services [1]. The ongoing COVID-19 pandemic further contributed to these underlying health conditions, particularly at the height of the pandemic in spring 2020 when the Navajo Nation had one of the highest per capita COVID-19 infection rates in the nation [5].

Nursing education programs located in or near rural and American Indian communities have a unique opportunity to improve health disparities and nursing shortages. However, such programs must account for challenges around distance between faculty, students, clinical sites, resources, preceptors, and community partners. Rural clinical sites and partners are often difficult to find and are separated by many miles, requiring faculty to oversee students, manage clinical sites and partners at great distances [6]. Additionally, distant clinical sites often have limited or no lodging accommodations for students and faculty, adding to costs for transportation and lodging; and lack of internet infrastructure make it difficult to incorporate virtual methods of teaching and communicating.

Other important challenges center on training and education needs for faculty and nursing students. At the faculty level, there is some evidence that suggests many faculty are not well trained in how to use and integrate simulation technology in teaching [7,8]. Additionally, faculty may lack cultural knowledge and awareness of other cultures than their own, impacting nursing students' preparedness to provide culturally appropriate care to diverse patients and families [9].

Preparing nursing students for rural and culturally diverse settings calls for innovative approaches using simulation-based education. Simulation-based education is an effective method for teaching and learning for nursing students in a safe, controlled environment, where students are provided a simulated experience of an actual clinical situation to increase students' hands-on practice and knowledge not only of clinical skills but also cultural care and communication without the risk of harming a real patient [10,11]. Further, clinical opportunities in rural and culturally diverse settings such as American Indian communities can support and enhance learning opportunities for nursing students [12] and perhaps even for faculty.

This paper describes a two-year HRSA-funded Nursing, Simulation Education Practice, Quality and Retention (NEPQR) Simulation Education Training (SET) project. The project focused on 1) enhancing simulation-based technology education and training of faculty and community partners; and 2) increasing nursing students' awareness and understanding of culturally diverse groups in rural and AI community settings. Our overarching goal was to improve outcomes with adult and childhood obesity, diabetes, hypertension, coronary heart disease, and behavioral/mental health care, for people living on the Navajo Nation and in rural northern Arizona; rural and medically underserved areas with high poverty rates and disproportionately high burdens of these diseases by increasing the nursing workforce and

incorporating cultural awareness about care for American Indians and people living in rural and underserved areas.

Method

The project training sites were our main School of Nursing campus and one of our extended campuses-the American Indian Nursing Program (AIP) located on the Navajo Nation, the first and only tribal reservation-based baccalaureate-nursing program. These site locations allowed us to do this work throughout the Navajo Nation and rural northern Arizona during the COVID-19 pandemic (2020–2022). Our project did not require ethical board approval because project was not conducted for research purposes.

Simulation-Based Training

For faculty, to increase their basic understanding of simulation technology and explore ways to expand and integrate simulation into day-to-day teaching, we made online courses available through the National League of Nursing Simulation Innovation Resource Center (NLN SIRC). The project team, led by School of Nursing's simulation coordinator, followed up with faculty at monthly Zoom meetings to address questions related to on online courses. Faculty were provided with a list of recommended simulation courses. The simulation coordinator was available for faculty interested in using simulation as a teaching tool in their course.

Along with faculty, we educated rural community health partners and preceptors about simulation technology and its uses in nursing education. For example, community partners associated with a local hospital and community college had onsite simulation equipment at their facilities but did not know how to use it for simulation-based education. To address these learning needs, we provided onsite consulting and training on simulation hardware and software equipment along with practice patient simulation scenarios and telehealth training.

To expand simulation-based education for the reservation-based American Indian Nursing Program (AIP) nursing students, we upgraded and installed a new video capture system-VALT (Video, Audio, Learning, Tool) at the initiation of the project. For the first time, students could participate remotely in a simulation scenario via observation and debriefing by reviewing their recorded simulations. For example, students participated in a simulated clinical experience of a mother in labor where students were expected are to recognize and treat signs of foetal distress.

The use of simulation-based education became even more important when COVID-19 pandemic forced closure of clinical practicum sites, making simulation the only clinical experience for many of our undergraduate nursing students. These students were provided simulation-learning experiences in areas such as patient communication, sterile technique practice, interprofessional communication, teamwork and delegation.

Culturally Competent Nursing Education

To optimize student readiness for culturally competent public health care in rural and medically underserved settings, our team is exploring ways to integrate public health nursing

concepts, cultural and communication skills, and social determinants of health in simulation learning experiences. One example is through our partnership with tribal health and school partners to develop simulation scenarios that mimic real world experiences with AI patients in rural settings. The severe impact of COVID-19 on the Navajo Nation spurred ideas for simulation scenarios in response to some of the language and cultural conflicts/issues many Navajo families experienced. One example was the hospital restrictions that cut off family visits from loved ones in the hospital fighting for their lives where in some cases loved ones did not survive. Simulation is one way to provide students with the experience to practice difficult situations in a culturally sensitive manner.

With the impact of COVID-19 on student clinical experiences, we adapted our public health nursing clinical practicums to meet the learning needs of our students, support community, and tribal partners who faced many challenges in serving high-risk populations. One group of students learned social determinants of health and its devastating impact on rural and tribal communities because of no running water, inadequate housing, and limited access to health care services. Students developed a primary intervention project that focused on preventing the spread of COVID-19. One group project created a 4-minute YouTube video on how to wear facemask properly that was delivered to tribal and school partners.

Results

Nursing faculty across all campuses, 100%, received simulation training. This exceeded our projected goal and led to a campus-wide increased interest in simulation-based learning. COVID-19 made the simulation training provided to preceptors and community health challenging, but we succeeded by collaborating with the largest healthcare system in northern Arizona and a tribal partner. Both organizations were eager to share their approaches to virtual care, telehealth, remote patient monitoring, and virtual hospital and to provide opportunities for students when appropriate.

One hundred percent of undergraduate nursing students (N=462) on main campuses in Flagstaff and the American Indian Nursing Program were involved in simulation education. With the availability of vaccines and the easing of COVID-19 restrictions in fall 2021, most students resumed practicums in rural and medically underserved areas, including the Navajo reservation. Qualitative survey was sent to 320 students. 98 students described their experiences using simulation-based education and the positive impact of the program. The following are quotes from different students: the “scenarios helped me feel prepared to work in medically-underserved areas” and to “become more aware of different cultures or even economic status. ‘Each scenario exposed us to come cultural barrier that we had to overcome and find ways to adjust to so that all patients felt respected.” The training was described as “beneficial” in the clinical decision-making process by “making decisions under pressure”, working as a team”, “learning to delegate and ask questions”, “apply concepts from lecture that didn’t make sense that suddenly came alive and became real”. One student felt simulations “were not beneficial to my clinical experiences.”

Discussion

To improve the delivery of culturally appropriate care and address health equities in diverse populations, nursing programs can use innovative methods, such as simulation-based nursing, to incorporate cultural competency into the curriculum. Exposure to simulation-based nursing, along with traditional clinical experiences, can improve student clinical performance and expand clinical competence [13]. Additionally, simulation-based education can help student's bridge significant educational and clinical gaps to meet required program standards. Simulation-based education is an approved accreditation expectation by State Boards of Nursing, and there is strong reason to expect that it will be sustained in the nursing curriculum. Our faculty embraced the simulation education and it was important to ensure that they were prepared with the appropriate skills and knowledge for enduring success.

Information regarding public health and culture can be integrated into simulation-based education. Content should include the principles of public health, epidemiology, and social determinants of health, policy, interprofessional team building and skills, and management of the spread of disease with real-world examples, such as the COVID-19 pandemic. This approach reduces the number of clinical sites.

Despite our successes, we encountered and continue to encounter challenges and limitations when working in rural and remote areas. These challenges, primarily distance and lack of reliable internet connectivity, are ongoing and inherent characteristics of working in remote areas. Forming strong partnerships with community health care facilities is one way to make an educational impact in a community where resources in funding, infrastructure (limited broadband internet connectivity) and health care personnel are limited [14]. Having a network of clinical partners provides a support system for communication, team building and interprofessional development for students to see how teams can collaboratively work together to overcome challenges.

Funding

All authors received funding to support this work from HRSA U4EHP394575. Schwartz and Eddie also received funding from NIH/NIMHD U54MD012388.

References

1. Cromer K, Wofford L, Wyant D (2019) Barriers to healthcare access facing American Indian and Alaska Native in rural America. J Community Health Nurs 36: 165–187. [PubMed: 31621433]
2. National Rural Health Association (2012) Health care workforce distribution and shortage issues in rural America.
3. Romero S (2021) Navajo Nation Becomes Largest Tribe in U.S. After Pandemic Enrollment Surge. New York Times.
4. Arizona Department of Health Services (2021) Leading causes of death and health disparities among the American Indian and Alaska Native population in Arizona.
5. Wang H (2021) Why the Navajo Nation was hit so hard by coronavirus: Understanding the disproportionate impact of the COVID-19 impact. Appl Geogr 134: 1–10.
6. Wines M (2016) Nursing education in rural environments. Comprehensive Psychology 5. 216522281663332.

7. Beroz S (2017) A Statewide Survey of Simulation Practices Using NCSBN Simulation Guidelines. Clinical Simulation in Nursing. 13: 270–277.
8. Fey MK, Jenkins LS (2015) Debriefing practices in nursing education programs: Results from a national study: Nursing Education Perspectives. 36: 361–366. [PubMed: 26753294]
9. Baghdadi N, Ismaile S (2018) Cultural competency of nursing faculty teaching in baccalaureate nursing programs in the United States. Australasian Medical Journal 11: 126–134.
10. Aebersold M (2018) Simulation-based learning: No longer a novelty in undergraduate education. The Online Journal of Issues in Nursing. 23.
11. Nimmo C, Behnke L, Creech C, Schellenberg K, Turkelson C, et al. (2021) Using simulation to educate rural NP students about cultural congruence. Journal for Nurse Practitioners.17: 476–480.
12. Alexander-Ruff JH, Kinion ES (2019) Developing a cultural immersion service-learning experience for undergraduate nursing students. J Nurs Educ 58: 117–120. [PubMed: 30721314]
13. Guerro JG, Hafiz AH, Eltohamy N, Gomma N, Jarrah I (2021) Repeated exposure to high-fidelity simulation and nursing interns' clinical performance: Impact on practice readiness. Clinical Simulation in Nursing. 60: 18–24.
14. DellAntonio J, Ardary D, DuGan J, McKee S, Conklin B, et al. (2018) Simulation center partnership: A university and community hospital collaboration for healthcare education. JOJ Nursing & Health Care. 9: 001–003.