

## Increasing Rural Nursing Students' Awareness of the Social Determinants of Health

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## Abstract

**Purpose:** The social determinants of health (SDOH) include factors such as poverty, lack of access to health care, educational barriers, stigma, and racism which can contribute to health disparities and inequities. Minorities, rural communities, and underserved populations are disproportionately affected by SDOH. Nursing students must become aware of the SDOH in order to provide high-quality, holistic, patient-centered care to patients and their families. The purpose of this study was to determine the impact of a case-based workshop on undergraduate and graduate nursing students' knowledge and attitudes about the social determinants of health.

**Sample:** Bachelor of Science in Nursing (BSN), Family Nurse Practitioner (FNP), and Psychiatric Mental Health Nurse Practitioner (PMHNP) students from a public, liberal arts university in the rural, southeastern United States participated in the project.

**Method:** Demographic information and survey data were obtained from participating undergraduate and graduate nursing students to assess the impact of a case-based SDOH workshop on their knowledge and attitudes about the SDOH.

**Findings:** Five of the nine scored survey items had statistically significant differences in pre- and post-survey ranked scores. Increased student response scores were noted on items about SDOH knowledge and attitudes, including awareness of SDOH and vulnerable populations, knowledge of how social determinants and economic factors influence health, and confidence with working with vulnerable populations in the future. Four themes were apparent from analysis of the three open-ended questions: Awareness of Resources, Social Worker Perspective, Awareness of Social Determinants of Health, and Importance of Empathy.

**Conclusions:** It is important for nurses in rural areas to understand the influence of social determinants on population and individual health when caring for and treating vulnerable patients so that they can provide more holistic care to patients and can address health disparities.

*Keywords:* Rural nursing students, social determinants of health, health disparities

### **Increasing Rural Nursing Students' Awareness of the Social Determinants of Health**

The social determinants of health (SDOH) include non-medical factors such as poverty, lack of access to health care, educational barriers, stigma, and racism which can contribute to health disparities (Centers for Disease Control and Prevention [CDC], n.d.; World Health Organization [WHO], n.d.). Almost 80% of health outcomes are related to social, behavioral, and economic issues, so it is imperative to consider SDOH when caring for patients (Wise et al., 2023). In Healthy People 2030, the SDOH are a national priority due to the impact on people's health, welfare, and quality of life (U. S. Department of Health and Human Services, n.d.). Minorities, rural communities, and underserved populations are disproportionately affected by SDOH, with life expectancy and infant mortality adversely impacted in these groups (Singh, 2017). The SDOH are barriers to the attainment of health equity in the United States (Lathrop, 2020).

Rural residents are at risk for experiencing health disparities related to the effects of SDOH. Research has found that the majority of health disparities are related to social, behavioral, and economic factors (Wise et al., 2023). The United States Census Bureau (n.d.-a) defines rural as any population, housing, or territory that is not located in an urban location. Urbanized areas have 50,000 or more people living there. The city in which the university is located had a population of 40,072 in 2022 (United States Census Bureau, n.d.-b). There are several parts of this county designated as rural by the Federal Office of Rural Health Policy (Health Resources and Services Administration [HRSA], n.d.-a). Additionally, many commuting students live in outlying counties

that are designated as rural by the Federal Office of Rural Health Policy (HRSA, n.d.-b). In the rural area where this university is located, there are many issues that contribute to SDOH. The population that is below the federal poverty level is 17.44%, and 18.2% receive Supplemental Nutrition Assistance Program (SNAP) benefits, figures which are higher than the state and national percentages (McLeod Health, 2022). Additionally, 31.3% of the population in this area reports no physical activity, and 32.6% are obese, which are above the state and national averages (McLeod Health 2022). Through the Robert Wood Johnson Foundation and the American Association of Retired People (AARP) Campaign for Action, one of the priorities in South Carolina is to decrease the maternal and infant death rates. South Carolina (SC) currently ranks eighth in the nation, according to a March of Dimes report (n.d.). In South Carolina, 12.1% of births were preterm births, which is higher than the national preterm birth rate of 10.5% (March of Dimes, n.d.). In South Carolina, there are many rural areas that are designated as maternity deserts, which impacts patients negatively (Neuner & Hopla, 2019).

Nursing students must become aware of the SDOH in order to provide high-quality, holistic, patient-centered care to patients and their families (Lathrop, 2020; Lee & Wilson, 2020). By integrating the SDOH into nursing education curricula, nurses will be better able to address health inequalities and health disparities (Muirhead et al., 2022). The National League for Nursing, the World Health Organization, and the Robert Wood Johnson Foundation recognize the importance of including the social determinants of health (SDOH) in the nursing curricula (National Advisory Council on Nurse Education and Practice, 2016; National League for Nursing, 2019; Robert Wood Johnson Foundation, 2017; WHO, 2019). In the American Association of Colleges of Nursing Essentials (AACN, 2021), SDOH are included as one of the eight concepts; therefore, curricular integration of the SDOH is important for undergraduate and graduate nursing programs.

The National Academies of Sciences, Engineering, and Medicine (2019) proposed a framework for the integration of SDOH into health care delivery, which includes five domains: awareness, adjustment, assistance, alignment, and advocacy. There is a need for nursing programs to purposely thread the SDOH throughout undergraduate and graduate nursing curriculum so that nurses are better prepared to meet the needs of patients (Robertson et al., 2022). Experiential learning, including unfolding case studies, simulations, and tabletop discussion (Davis et al., 2021), has been used to introduce SDOH in undergraduate and graduate nursing programs.

The purpose of this study was to determine the impact of a case-based workshop on undergraduate and graduate nursing students' knowledge, attitudes, and comfort in considering social determinants of health when providing patient care. Study objectives were to:

- 1) discuss the influence of social determinants on individual and population health in an open-forum setting,
- 2) provide students with opportunities to share experiences and knowledge to collaboratively solve case-based problems, and
- 3) measure students' knowledge and attitudes of SDOH pre- and post-workshop.

The study purpose and objectives were derived from the research question, "Does implementation of a collaborative case-based workshop improve undergraduate and graduate students' self-reported scores of knowledge and attitudes about the social determinants of health?"

## **Methods**

### **Design and Sample**

Bachelor of Science in Nursing (BSN), Family Nurse Practitioner (FNP), and Psychiatric Mental Health Nurse Practitioner (PMHNP) students from a public, liberal arts university in the rural, southeastern United States participated in the project. The BSN program is an in-person

prelicensure program, wherein students complete nursing course work in their final two years of the program. The nurse practitioner programs are hybrid graduate degree programs in which students choose either a two-year plan of study for the master's degree or a three-year plan of study for the BSN to Doctor of Nursing Practice (DNP) option.

Demographic information and survey data were obtained from participating undergraduate and graduate nursing students to assess the impact of a case-based workshop on their knowledge and attitudes about the social determinants of health. All participants were enrolled in either a graduate or undergraduate nursing course. An anonymous online survey was administered before and after the completion of the case-based workshop. Completion of the survey was not a required component of the course. The FNP and PMHNP students participated in the workshop together during an on-campus immersion day. All FNP and PMHNP students were enrolled in an online Population Health and Epidemiology course and completed the surveys before and after the workshop. Due to scheduling logistics, the undergraduate nursing students participated in the workshop on a separate day, approximately one week after the graduate workshop. For BSN students, the workshop was held during class in the Population-focusing Nursing and Health Care Policy course which occurs in the final semester of the program. All students in the course attended the workshop. Institutional Review Board approval was obtained from the university.

### **Social Determinants of Health Workshop**

Four case studies were developed by FMU faculty members with expertise in a particular population of interest: pediatrics, women's health, geriatric, and psychiatric patients and their families. Each case was different in content but involved an aspect of social, financial, cultural, family, and health care access issues to resolve unmet medical needs. Content for the case studies was drawn from faculty experiences in their own clinical practice and knowledge of the needs in

the local community. The populations of interest were chosen based on several factors. First, the FNP and PMHNP students were enrolled in clinical courses focusing on pediatrics, women's health, and psychiatric patients. The geriatric population was chosen because of the unique issues that can arise in that population including safety concerns with living alone and driving, budgetary constraints for those living on a fixed income, and the medical complexity associated with aging. BSN students, because they were in their final semester, had already been exposed to all of these different populations both in the classroom and in clinical. This provided them with a foundation of knowledge and experience on which to approach the complex case studies. The cases were peer-reviewed by each of the four faculty members for appropriateness and content validity. Revisions were made based on peer evaluations.

Each two-hour workshop session, graduate and undergraduate, was conducted utilizing the same schedule and format. The workshop began with a short video about the impact of social determinants on population and individual's health (Boston Medical Center, 2019). After viewing the introductory video, students were divided into four small groups. Students in each group worked together for approximately one hour to address the issues presented in their assigned case. Faculty provided students with access to a national website to locate resources within their local communities (FindHelp, n.d.). During the hour, students discussed the case and collaborated in their small groups using their own personal, professional, and clinical knowledge and expertise. At the end of the hour, the small groups presented their case study and recommendations to the entire group and faculty team. A social worker was present at each session to provide additional resources and guidance during the case study presentations.

## **Evaluation Methods**

Demographic information and student knowledge and attitudes about SDOH were captured using an anonymous online survey that was administered both before and after the SDOH workshop experience. The SDOH knowledge and attitudes survey was adapted from an instrument utilized in a prior study with permission from the authors (Phan et al., 2020). The survey questions were adapted by removing all references to a health equity simulation experience since this study did not involve a simulation. The original survey's content validity was established by subject matter experts, and the internal reliability was assessed using a Cronbach's alpha, which was 0.82 for the student attitude items and 0.96 for the knowledge items. The authors/faculty team did not further evaluate the adapted survey instrument for measures of validity or reliability. The survey contained nine items to determine students' knowledge and attitudes about considering SDOH when caring for or treating patients. Survey items were scored using a 5-point Likert scale from 1 (strongly disagree) to 5 (strongly agree). Three open-ended questions were also administered to allow students an opportunity to further express their perceptions of the collaborative SDOH workshop experience. Completion of the survey was voluntary and was not a required component of the workshop or a course.

## **Data Analysis**

Participant survey responses from the pre- and post- workshop experience were compared using Wilcoxon signed rank testing with an  $\alpha$  set at .05. The post-implementation responses included three open-ended reflective questions. Chi-square analyses were performed to determine differences between student groups by four demographic characteristics of age, race/ethnicity, clinical work experience, and level of student (undergraduate vs. graduate). Mann-Whitney *U* tests

were performed to determine if there were differences in pre- and post-implementation survey scores in terms of the four demographic variables.

Open-ended responses were examined and evaluated for content categorization and determination of emerging themes. Two authors/faculty coded text responses, labeled high-frequency words as nodes and determined categories based on those nodes. Constant comparative techniques and re-examination of the nodes and categories allowed for emergence of themes about the SDOH workshop experience. A third investigator reviewed and separately coded the text, and a final team session was held to reach agreement on differences.

## **Results**

### **Student Characteristics**

Sixty-two students completed the pre-workshop survey, and 55 of the 62 (88.7%) students completed the post-survey (Table 1). Postimplementation survey participants included 28 (50.9%) graduate nursing students and 27 (49.1%) undergraduate nursing students, with 45 (81.8%) female and 10 (18.2%) male respondents. The majority of students 39 (70.9%) were White or Caucasian, with Black or African American 11 (20%), Black Hispanic 1 (1.8%), Non-Black Hispanic 3 (5.5%) and Other Race 1 (1.8%) comprising the remainder of the race category. Twenty-one (38.2%) of the participants were between the ages of 18 – 25 years, and 22 (40%) were between the ages of 26 – 35 years. The remaining 12 (21.8%) participants were between with ages of 36 – 55 years. Approximately half of participants [25 (45.5%)] reported having between 0 – 3 years of clinical experience, and 15 (27.3%) reporting between 4 – 10 years of clinical experience. The remaining 15 (27.3%) participants reported having greater than 10 years of experience.

**Table 1***Student Demographics*

Variable	Pre-survey (n = 62) n (%)	Post-Survey (n=55) n (%)
<b>Student Level</b>		
Undergraduate (BSN)	32 (51.6)	27 (49.1)
Graduate (MSN or DNP)	30 (48.4)	28 (50.9)
<b>Gender</b>		
Female	50 (80.6)	45 (81.8)
Male	12 (19.4)	10 (18.2)
<b>Race/Ethnicity</b>		
White/Caucasian	45 (72.6)	39 (70.9)
Black/African American	11 (17.7)	11 (20.0)
Black Hispanic	1 (1.6)	1 (1.8)
Non-Black Hispanic	3 (4.8)	3 (5.5)
Other	2 (3.2)	1 (1.8)
<b>Age</b>		
18 – 25 years	26 (41.9)	21 (38.2)
26 – 35 years	24 (38.7)	22 (40.0)
36 – 45 years	6 (9.7)	6 (10.9)
46 – 55 years	6 (9.7)	6 (10.9)
<b>Clinical Work Experience</b>		
None	5 (8.1)	4 (7.3)
< 1 year	11 (17.7)	8 (14.5)
1 – 3 years	14 (22.6)	13 (23.6)
4 – 6 years	9 (14.5)	9 (16.4)
7 – 10 years	8 (12.9)	6 (10.9)
> 10 years	15 (24.2)	15 (27.3)

**SDOH Knowledge and Attitudes**

Five of the nine scored survey items had statistically significant differences in pre- and post-survey ranked scores, using Bonferroni correction for multiple tests (Table 2). Increased student response scores were noted on items about SDOH knowledge and attitudes, including awareness of SDOH and vulnerable populations, knowledge of how social determinants and economic factors influence health, and confidence with working with vulnerable populations in the future (pre-survey *Mdns* range = 4.0-5.0, post-survey *Mdns* = 5.0, *z-score* range -4.48 - -3.13, *p-value* range <.001 – .002).

**Table 2***Pre- and Post-SDOH Workshop Survey Responses Analyzed using Wilcoxon Signed-Rank Testing*

<b>Item</b>	<b>Pre- median</b>	<b>Post- median</b>	<b>Z - score</b>	<b>p-value</b>	<b>Effect Size</b>
I feel positive about working with vulnerable populations in the future	4.5	5.0	-3.84	<.001*	-.52
I believe nurses should have a role in providing resources to vulnerable populations	5.0	5.0	-2.69	.007	-.36
I believe nurses can play important roles in creating health equity	5.0	5.0	-1.90	.057	-.26
I have awareness of vulnerable populations	4.0	5.0	-4.30	<.001*	-.58
I have awareness of social determinants of health	4.0	5.0	-4.48	<.001*	-.60
I understand that health is influenced by more than health care	5.0	5.0	-2.56	.011	-.35
I understand that health is affected by more than personal behaviors	5.0	5.0	-2.08	.037	-.28
I have knowledge of how social factors influence health	5.0	5.0	-3.13	.002*	-.42
I understand how economic factors influence health	5.0	5.0	-3.95	<.001*	-.53

\*Significance with Bonferroni Correction,  $p < .005$ 

Chi square analyses revealed no significant differences between groups by age, race/ethnicity, and clinical work experience, and level of student (all  $p > .05$ ). Mann Whitney *U* tests determined that all groups benefitted from the workshop with no statistical differences between groups after the workshop experience.

### **Open-Ended Responses**

Three open-ended questions allowed students to provide additional insight into their thoughts and feelings about the SDOH workshop. Four themes were apparent: Awareness of Resources, Social Worker Perspective, Awareness of Social Determinants of Health, and Importance of Empathy. Increased awareness of resources was evident in the responses from several students.

One student stated, “I will now be able to take the knowledge I learned today and be able to educate my patients on various resources.” Another student revealed that the workshop “will make me more cognizant of knowing the resources in my area.” Several responses supported the presence of a social worker during the workshops as an added benefit. Students felt that “having somebody that actually works in the field and getting their perspective was very beneficial.” Awareness of the SDOH was another theme revealed in the students’ responses. One student expressed, “I will be more aware of the impact of social determinants when providing care to patients” while another stated, “It will help me think more critically and incorporate social determinants of health when helping develop a care plan.” Finally, students revealed a greater awareness of the importance of empathy. One student recounted, “I live in a very rural community where I have saw some of the experiences that were mentioned in the scenarios. One of my personal beliefs in life is you NEVER know what someone is going through. Everything was important and impactful to me.” Another revealed, “This workshop was a great reminder to be kind, compassionate, and empathetic to the needs and situations of the patients we serve.”

### **Discussion**

After this SDOH workshop, nursing students gained an increased awareness of SDOH and vulnerable populations, improved knowledge of how social determinants and economic factors influence health, and more confidence in working with vulnerable populations. The SDOH workshop improved the knowledge and attitudes about the SDOH, which answers the research question for the study.

Five of the nine scored survey items had statistically significant differences in pre- and post-survey ranked scores. Students reported pre-workshop median scores of five on the other four items, indicating prior experience, knowledge, and comfort with social determinants of health. The

faculty team expected students to have some familiarity with social determinants because the content is covered in both the undergraduate and graduate curriculums. Additionally, the students are in clinical with underserved rural patients and have seen some similar scenarios in their work environments or in clinical. Despite their general familiarity with social determinants, the workshop was particularly beneficial in that students were able to share experiences with each other while problem-solving their assigned scenario. The collaborative nature of the workshop allowed students to inform each other of local resources to help underserved patients. The open-ended responses supported the benefit of the collaborative nature of the workshop and the value of having a social worker present to provide insight and expertise about each scenario and local resources available pertaining to each particular case.

The qualitative responses disclosed that students had a greater awareness of resources for the SDOH, the social worker perspective was important, and the need for empathy was vital. As these results suggest, it is important that nursing students become more aware of the impact of SDOH so that they can provide more holistic care to patients and address health disparities (Muirhead et al., 2022). This is true not only in rural areas, such as this university, but in all areas of the United States. This awareness of SDOH may remain with students beyond their time in the nursing program and impact their nursing practice after graduation.

Limitations of this study include the small sample size and the inclusion of nursing students at a single university. The completion of the surveys was anonymous and voluntary, so that may have affected the post-survey response rates. Additionally, the graduate and undergraduate students completed the SDOH workshop on separate days due to scheduling conflicts.

It is important for students at the undergraduate and graduate levels to be more aware of the SDOH and how they impact health. The need to incorporate holistic plans of care that consider

SDOH is necessary at both levels of nursing education. Future plans include integrating the BSN and graduate nursing students into the same groups for the case-based workshop and studying the impact of intraprofessional learning about the SDOH.

### **Conclusion**

It is important for providers to understand the influence of social determinants on population and individual health when caring for and treating vulnerable patients. Case-based workshops may be incorporated into graduate and undergraduate nursing curriculums to meet the new 2021 AACN Essentials, and to better prepare students to serve and treat patients with complex social issues and unmet medical needs.

### **Conflicts of Interest**

These authors declare no conflicts of interest.

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