

2023

## Education to Increase Nurse Knowledge and Compliance with Social Determinants of Health Screening

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# Walden University

College of Nursing

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Bonnie Rieger

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Walden University

2023

Abstract

Education to Increase Nurse Knowledge and Compliance with Social Determinants of

Health Screening

by

Bonnie Rieger

MSN, Duke University, 2010

BSN, Miami University, 1992

Project Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Nursing Practice

Walden University

May 2023

## Abstract

To provide holistic care and ensure positive patient health outcomes, the social determinants of health (SDOH) must be addressed. Research demonstrates that while medical care is a contributor to wellness, the SDOH serve an influential role in patient health outcomes. There is limited literature describing how to best educate practicing nurses about SDOH concepts. The purpose of this DNP project was to provide an educational intervention to increase inpatient staff nursing knowledge of the SDOH. Sources of evidence used to create the education module included scholarly literature describing the SDOH concepts and their application to patient, community, and population health. The project framework was informed by the adult learning theory, Kirkpatrick's four levels of evaluation, and the empowered holistic nursing education midrange theory. The education intervention was designed by a clinical nurse informaticist and then presented to 11 nurses employed in the intensive care nursing care unit of a 178-bed acute care hospital in Southwest Ohio. Evidence of participant learning and satisfaction was collected using pre and posttest questionnaires and a satisfaction survey. The pretest and posttest data were analyzed using descriptive statistics. The results demonstrated a 19% increase in correct responses from the pretest questionnaire to the posttest questionnaire, supporting an increase in nurses' knowledge about the SDOH concepts and the related EMR tools. This project promotes positive social change through the enhancement of nursing knowledge about the SDOH concepts and the effective use of screening tools which can ultimately lead to the reduction of health-related inequities and improved patient outcomes.

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## Dedication

I dedicate this paper to my mother Joan Chapman, my significant other Todd Pittman, and my grandfather Clarence Etson. Mom and Todd supported me tirelessly and unconditionally throughout my advanced education, including times when I missed family events, lost sleep, and even felt like giving up. Beginning in grade school, my grandfather taught me to study hard, get good grades, and seek as much education as possible. I know you're smiling Gramp!

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## Section 1: Nature of the Project

### **Introduction**

The *social determinants of health* (SDOH) are the social, economic, and physical conditions in which people are immersed that affect their health outcomes, quality of life, and functioning (Department of Health and Human Services, 2012). These conditions are shaped by the distribution of resources and power at the community, state, national, and global levels (World Health Organization, n.d.). Many of the avoidable health inequities and adverse health outcomes experienced by minority populations are attributable to negative impact of the SDOH (James, 2017; World Health Organization, n.d.). Although screening for the SDOH is not yet a required or standardized clinical practice, the Centers for Medicare and Medicaid Services encourages screening for health-related social needs (2020) and The Joint Commission supports racial justice and health equity (2021). Hospitals and primary care providers are including SDOH screening and data collection into their patient intake and history-taking processes (Centers for Medicare and Medicaid Services, n.d.).

Assessing and documenting social needs during acute hospitalization aides in providing individual patients with personalized care and interventions while supporting aggregate data collection for the identification of population health trends, needs, and strategies (American Hospital Association, 2019). Consider the elderly female diabetic patient who presented to the hospital in diabetic ketoacidosis. After blood glucose stabilization and medication titration, the patient is sent home with prescriptions in hand, a new glucometer, and printed diabetes education. However, the system did not set her up

for success. The patient finds herself at home making the choice between purchasing glucometer strips or making a payment on the past-due electricity bill. She is unable to follow her diet without access to nutritious foods, and she does not have transportation to her scheduled follow-up visit with her primary care provider. The health care system has failed her. When struggling to meet primary needs such as food, transportation, and housing, patients often do not have the capacity to focus on staying healthy.

### **Problem Statement**

In southwestern Ohio, a multihospital health care organization incorporated the SDOH screening questions in the electronic medical record (EMR) patient history section in late 2019. Although multiple disciplines may document and contribute to the patient history component of the EMR, nursing care team members are responsible for reviewing and updating the patient medical history of all admitted hospital inpatients. In May 2020, the organization's EMR vendor generated a report demonstrating the overall completion rate of the newly incorporated SDOH screening questions was less than 1%.

Seeking possible causes for the low compliance rate, a system informatics nurse specialist discussed and introduced the SDOH documentation topic at the organization's Nursing Shared Governance Exemplary Professional Practice Committee (EPP) and requested feedback. Nurses shared the following reasons for failure to complete the screening questions: shared lack of resources to address identified needs, limited knowledge of the SDOH concepts, and time constraints (personal communication, June 2020). This Doctor of Nursing Practice (DNP) project aimed to address the practice-focused question: Will the completion of a staff education module increase nursing

knowledge of SDOH concepts and their impact on healthcare outcomes? The project holds significance for the practice of nursing because it seeks improve nurses' compliance with the SDOH screening process through an increased understanding of SDOH concepts and EMR tools. Increased completion rate of the SDOH screening supports the identification of patient needs and the related resource referrals.

### **Purpose Statement**

The gap in practice at the partner organization is nursing's lack of compliance with completing the SDOH screening on admission. The purpose of this DNP scholarly project is to provide an educational intervention about the importance and impact of the SDOH on individual patients' health, community health, and population health. I hypothesized that an increased understanding of the SDOH concepts by nurses, and the potential patient and community health benefits realized through SDOH screening subsequently results in improved screening compliance. If desired, the partner site can offer the SDOH education to all staff RNs via their electronic learning system solution. The education project has the potential to support evidence-based nursing practice and while providing a foundation for improved patient outcomes.

### **Nature of the Doctoral Project**

The DNP project was modeled according to the Walden University Doctor of Nursing Manual for Staff Education and designed to align with the partner site's organizational mission, values, and vision. The purpose of the project was to improve nurses' knowledge and awareness of the SDOH. The education intervention consisted of a pretest, a PowerPoint learning activity with text narration, a posttest, and a participant

satisfaction survey. Six months after the education intervention, EMR reporting will be performed by the partner site's EMR vendor to gather screening compliance completion data. A comparison of pre- and post-intervention screening compliance rates will be performed. Patient-identifying data and RN-identifying data will not be collected.

Although the Centers for Medicare & Medicaid Services (CMS), World Health Organization (WHO), and Healthy People 2020 advocate for SDOH screening, the practice has not yet been mandated nor standardized (Centers for Disease Control and Prevention, 2018a, 2018b, n.d.; CMS, 2018; Department of Health and Human Services, 2012, n.d.-a, n.d.-b; Koh et al., 2011; WHO, n.d.). SDOH concepts are not consistently included in all medical and nursing education programs, resulting in a knowledge gap among health care providers and clinicians (Andermann, 2016, 2018; Bower et al., 2021; Cantor & Thorpe, 2018; Garrick, 2019; Hermer et al., 2020; Hewner et al., 2017; Moen et al., 2020; National League for Nursing, 2019; O'Brien, 2019). This DNP project aimed to address this identified gap in practice by educating nurses about the SDOH and providing examples of referral and program opportunities available through the partner organization and surrounding communities.

Walden University (2020) defines positive social change as “a deliberate process of creating and applying ideas, strategies, and actions to promote the worth, dignity, and development of individuals, communities, institutions, cultures, and societies” (para. 2). This project has the potential to positively impact social change by supporting nurse screening for the SDOH (see Olshansky, 2017; Persaud & Thornton, 2017; Phan et al., 2020; Robert Wood Johnson Foundation, 2018). Studies have found that social,

environmental, and behavioral determinants of health have a larger impact on health than medical factors (Taylor et al., 2016). Performing the SDOH screening upon hospital admission facilitates connecting individual patients with appropriate resources. Additionally, the aggregate data collected through the SDOH screening informs the partner organization and government entities with information about the areas of greatest need, thus serving as a guide for the development of related healthcare policy and programs.

### **Significance**

The DNP project stakeholders include the partner organization's nurses, nursing leadership, medical staff, patients and families, and the local community. The DNP project potentially contributes to nursing practice by improving nurses' awareness and understanding of the SDOH concepts. This heightened awareness and increased knowledge may lead to an increase in SDOH screening and interventions. In turn, patients who receive appropriate referrals and assistance from supportive programs may experience improved individual healthcare outcomes. As outcomes and environments are improved for individual patients, it is anticipated that community healthcare outcomes will gradually follow suit.

Implications for positive social change include the consideration of sociodemographic conditions with the community, the facilitation of appropriate resource and referral recommendations, and ultimately a reduction in health and healthcare disparities (Taillepiere et al., 2016). Limited training and inadequate knowledge about the impact of the SDOH are barriers to improving population health and addressing



healthcare inequities (Narain et al., 2019). This DNP project aimed to directly address and decrease these barriers for nurses working at the partner organization.

Given the lack of standardization of SDOH screening questions and processes, the findings from this DNP project might not have direct transferability to other hospitals and health care organizations. However, if the participants provide positive feedback about the educational opportunity and the nursing department experiences an increase in screening compliance, the organization may wish to offer the education nurses across the organization. The project outcomes could support future SDOH education programs or prompt research exploring the relationship between increased SDOH knowledge and screening program compliance and success.

### **Summary**

Section 1 introduced SDOH concepts and their roles in individual, community, and population health. The practice problem identified was nursing's lack of compliance with completing the SDOH screening on patients admitted to the acute care environment. After examination of the problem and potential barriers, the practice-focused question was formulated: Will the completion of a staff education module increase nursing knowledge of SDOH concepts and their impact on healthcare outcomes? The identification of the practice problem and the formulation of the practice-focused question provided key background about the evolution of the DNP project. An explanation of the project outlined the project's execution steps and expected timeline. Finally, the examination of the potential benefits of screening and addressing the SDOH

combined with nursing's opportunity to positively impact the process was presented to establish the DNP project's significance to nursing practice.

Section 2 of this paper explores the concepts, models, and theory utilized in establishing the project's framework, examines the literature review process completed in preparation for the project work, and outlines the relevance and background related to the DNP education project. The role of the DNP student and project team is also explained.

## Section 2: Background and Context

### **Introduction**

The purpose of this DNP scholarly project was to design and develop a staff education program for nurses to increase their knowledge of the SDOH. The partner health care organization had SDOH screening questions in the patient EMR. The screening is designed to be reviewed and updated at each hospital admission encounter, but the task was completed for less than 1% of admitted inpatients in 2020. Section 2 discusses the concepts, models, and theories key to the DNP project design, implementation, and evaluation. A summary of the literature review findings, description of the project's background, context, and relevance to nursing practice is also presented. Last, my role in conducting the project, and the roles of the supporting project team, are explored.

### **Concepts, Models, and Theories**

Learning is the change expected to occur in behavior, attitude, skills, and knowledge and the result of learning allows for individuals to make personal, professional, and social adjustments (Haggard, 1955; Knowles et al., 2005). The selected theoretical framework for DNP scholarly project was Knowles' adult learning theory. Andragogy, the art, and science of adult learning, is based on five assumptions:

- Self-concept - As learners mature, they move toward self-directed behavior and are receptive to the planning and evaluation of their learning experience.

- Experience – Mistakes and successes in life provide a basis and increasing resource for learning capacity.
- Readiness to learn – Adults are most interested in education that has relevance and impact to their professional and personal lives.
- Orientation to learning – Adult learning is problem-centered and immediately applicable.
- Motivation to learn – Adults are driven by an internal motivation to learn (Knowles et al., 2005).

Kirkpatrick's four levels of evaluation guided the project evaluation. Pre- and post-evaluations were completed by the RN participants to gauge perceived level of learning, the second level of evaluation. According to Kirkpatrick, learning aims to measure the change in knowledge or attitudes associated with the intervention (Brigham and Women's Hospital Center for Nursing Excellence, n.d.; Jeffery et al., 2015; Kirkpatrick & Kirkpatrick, 2006; Kirkpatrick, 2006; Kirkpatrick & Kirkpatrick, 2013). The post-evaluation also collected learner reaction, a subjective measure of the participants' satisfaction with the content and delivery method (Jeffery et al., 2015). The practicum site used the relationship-based care model as a framework for their shared governance nursing professional practice model. Integrating the model's framework of caring and human interconnectedness aligns with organizational practice while leveraging a fundamental aspect of nursing practice (Koloroutis, 2004). Finally, the project also utilized concepts from Love's midlevel nursing theory, empower holistic nursing education (EHNE), and Koloroutis's relationship-based care model.

EHNE provides nurse educators with a theoretical groundwork applicable to nursing practice while integrating a holistic and multicultural approach to learning with attention to social justice and ethical education (Love, 2014). The principles of EHNE include:

- acknowledging and incorporating learners' prior knowledge,
- addressing the contextual teaching-learning environment,
- recognizing the interconnectedness principle of holism,
- incorporating aspects of self-care, nurturing, and real-life examples, and
- engaging the learners by relating educational content to current events and social justice (Love, 2014).

### **Literature Review**

A review of scholarly, peer-reviewed scholarly journal and research literature was conducted using the PubMed, CINAHL Plus, ERIC, and ProQuest Health & Medical Collection databases. To locate the latest evidence on the primary SDOH topic and related topics such as supporting theory, models, staff nurse education projects, and evaluation methods, I utilized a variety of search phrases including the terms including, but not limited to: *social determinants of health, SDOH, determinants of health, nurse, nursing, registered nurse, staff nurse, adult learning, evaluation, hospital, acute care setting, attitudes, perceptions, knowledge, and education*. Limiters such as year of publication, peer-reviewed scholarly journals, academic journals, and English language aided in narrowing the number of items returned.

For example, entering the terms “*social determinants of health or determinants of health or sdoh*” in the CINAHL Plus with Full Text database, returned 13,210 full text

results. By further limiting the search to publication years 2015-2021, peer reviewed scholarly journals, and English language, 5,665 results were returned. Adding the “and” phrase of “*acute care setting or hospital*” returned 369 results. Including the term *nursing* further limited the search to 39 items. The article titles, subjects, and abstract were then reviewed toward identifying literature to review and summarize. Research articles with weak or unclear methodology were excluded. Furthermore, I reviewed the references utilized in particularly helpful and detailed articles, from which I located additional subject matter and internet sites. After conducting similar searches using varying terms and databases, the resulting personal database of literature included a total of 214 articles and books. The most pertinent articles and books were used to inform this DNP education project and create the SDOH education module.

Fink-Samnack illustrated the importance of case manager and social worker knowledge of SDOH concepts (2018) and Kiles et al. (2020) outlined a review of SDOH learning strategies for Doctor of Pharmacy degree programs. Numerous authors and organizations highlighted the importance of educating nurses and healthcare professions about SDOH concepts and reducing health inequities and disparities (Andermann, 2016; Davis & Chapa, 2015; Department of Health and Human Services, n.d.-a; Gallagher-Ford & Connor, 2020; Garrick, 2019; Hermer et al., 2020; Houlihan & Leffler, 2019; Murray, 2019; National League for Nursing, 2019; Ogbolu et al., 2019; Phan et al., 2020; Porter et al., 2020; Thornton & Persaud, 2018a; WHO, n.d.; Younas & Shahzad, 2021), while others explored how nurses are uniquely positioned to effect change in SDOH processes due to their holistic approach to care and patient-facing roles (Darcy-Mahoney et al.,

2020; Hermer et al., 2020; National League for Nursing, 2019; Olshansky, 2017; Robert Wood Johnson Foundation, 2018; Wetta, 2017).

However, there is limited literature describing the implementation and evaluation of nurse-performed SDOH screening programs in acute care settings or how to best educate practicing nurses about SDOH concepts. Anderman outlined a SDOH framework for healthcare professionals (2016) and completed a scoping review of SDOH screening tools, the impact of their use, and factors that promote screening in clinical care (2018). The author noted tools and interventions are not standardized and that SDOH screening is an “emerging area of clinical practice” which continues to evolve (2018, p. 14).

### **Relevance to Nursing Practice**

Despite federal and state social programs designed to ensure basic needs such as housing, food, and health care are met, significant differences exist in health care quality, access, and outcomes (American Hospital Association, n.d.; USAGov, 2021). A wealth of literature exists surrounding the SDOH concepts and their interconnectedness to health outcomes (American Hospital Association, n.d.; Artiga & Hinton, 2019; Centers for Disease Control and Prevention, 2018b; Centers for Medicare and Medicaid Services, n.d.; World Health Organization, n.d.), programmatic recommendations to address SDOH and healthcare-related inequities (Artiga & Hinton, 2019), and explanations about the population health benefits that can be realized health equity is enhanced (Agency for Healthcare Research and Quality, 2020; American Hospital Association, n.d.; Artiga & Hinton, 2019; Artiga et al., 2020; World Health Organization, n.d.). Scholars recommend teaching about the SDOH in nursing, medical, and ancillary healthcare programs

(Thornton & Persaud, 2018b; Younas & Shahzad, 2021), and research supports the statement that social, environmental, and behavioral determinants of health have a greater impact on health than medical factors and interventions (Taylor et al., 2016). However, minimal sources offered concrete examples of how to translate the research and evidence into acute care hospital nursing practice.

The DNP staff education project seeks to fill this gap in practice by informing practicing nurses about SDOH concepts and their impact on individual and community health outcomes. The staff education project will also provide insight about how to leverage tools within the partner organization's electronic medical record (EMR) to screen patients for SDOH risks, evaluate status using the SDOH interactive graphic, how to facilitate appropriate referrals, and how to add resource information to the after-visit summary discharge paperwork.

### **Local Background and Context**

The setting for the DNP project is a 178-bed acute care hospital in southwestern Ohio. The hospital is Magnet®-program recognized for excellence by the American Nurses Credentialing Center (ANCC) and has an active nursing shared governance structure in place which consistently demonstrates qualitative and quantitative evidence of rigorous patient care processes and outcomes (American Nurses Credentialing Center, 2021). The hospital provides acute care services to a population of approximately 26,300 residents in the local area.

The need for the education project emerged after the addition of SDOH screening questions to the EMR patient history section in late 2019. Mid-year 2020 reporting



completed by the EMR vendor demonstrated the nursing staff were completing the SDOH screening questions on less than 1% of the inpatient population. When the topic was discussed at nursing's Exemplary Professional Practice Council, nurses shared the following reasons as contributing to the low screening compliance: (a) discomfort with asking the questions, (b) lack of time, (c) lack of resources to address identified needs and issues, (d) limited staff knowledge of the SDOH concepts, (e) patient unable to respond due to clinical condition, (f) limited knowledge of how screening data are leveraged to identify and address community needs (g) screening recommended but not mandated by organizational policy (personal communication, June 2020).

The SDOH education module was available to nurses working on the inpatient critical care department of the hospital over a two-week period determined by the department manager in partnership with the organization's Learning Institute and the system nursing professional practice director. Participation in the education program was voluntary, and the completion of an anonymous pretest, posttest, and participant satisfaction survey was encouraged. The EMR vendor will provide the partner organization with a post-education report of the critical care department's SDOH screening compliance. The vendor reports the data sorted hospital site and inpatient departments. The pre- and post-intervention compliance reporting data will be summarized by the partner organization's nursing informatics team and then provided to the critical care department manager, the Learning Institute, and the system nursing director. Program evaluation was conducted and will assist the partner organization with determining whether the educational intervention requires modification and if it the

module will be shared with the entirety of the hospital nursing staff. Although the module can be distributed via the organization's electronic learning system application, the nursing department must consider the education cost for each nurse to complete the education. If the program is expanded, the organization will also determine if the education will remain voluntary or be added to the mandatory annual competency program.

Although SDOH screening is not yet mandated by the state and federal government, robust screening and referral processes benefit individual patients. The aggregate data collected provide insight to local and regional needs while serving to inform future funding and policy decisions (Artiga & Hinton, 2019; Centers for Disease Control and Prevention - Division of Community Health, 2013; Centers for Medicare and Medicaid Services, 2018, 2020; Chisolm et al., 2019).

### **Role of the DNP Student**

My role was to serve as the project leader and primary project team member. As a nurse informaticist at the partner organization I have a passion for enhancing EMR usability and decision support tools, effectively leveraging EMR data analytics, and improving outcomes through the delivery of cost-effective, compassionate, and evidence-based patient care. As part of my DNP project work, I designed the SDOH education module, developed the pre-and post-education RN surveys to evaluate learning, and synthesized the findings. Utilizing EMR reporting, the partner organization will measure the post-education SDOH documentation completion rate on the inpatient nursing unit. The future reporting will include aggregate SDOH screening completion data collected

by the EMR vendor. The reporting will not include individual patient or nurse identifiers. I will present summarized project results to the partner site's organizational leadership, including the system nursing director of professional practice, the system education director, and the system inpatient education manager.

My familiarity with the SDOH screening questions and referral process could have resulted in potential bias or assumptions related to EMR navigation, ordering and referral processes, or the completion of SDOH screening questions. Although I had knowledge of the organization's accepted EMR workflows, I recognized there could be real-life workarounds or barriers impacting EMR processes on the planned project implementation department. I mitigated these challenges by involving the department's nursing manager and nursing educators in the planning and review of the education module content to ensure realistic expectations.

I also anticipated the COVID-19 environment could negatively impact nursing participants' availability and willingness to voluntarily complete the SDOH education module and related survey and pre- and posttests. Although the overall volume of COVID admissions decreased during the first half of 2022, the patient census and acuity at the partner organization remained high. Nursing vacancy rates within the organization remained high while per-diem and agency nurse availability was limited, resulting in nurses often working longer hours with heavier patient-to-nurse ratios. While I remained optimistic that staffing challenges would ease enough to facilitate nurse participation in the education module program, that significant barrier was outside my control.

### **Role of the Project Team**

Aligning the DNP staff education project with organizational values and principles aids in stakeholder engagement (Boaz et al., 2018). The project aligned with furthering nursing knowledge, improving patient and community health outcomes, and supported social justice through the equitable distribution of the critical resources needed for psychological and physical wellbeing (American Association of Colleges of Nursing, 2006; Kapila et al., 2016). As a Nursing Magnet organization, the partner site supported nursing research, nursing education, and the translation of research into practice or evidence-based nursing practice. My Walden University DNP project chair, the organization's system nurse researcher, the system nursing professional practice director, the system technical education manager, and the critical care department educator served in supportive and consultative roles throughout the project. The organization's system nurse researcher facilitated the partner organization's IRB application and approval process for the DNP project. The system inpatient education manager and critical care department educator reviewed the education module and served as a content subject matter experts. The system inpatient education manager and nursing department educator received one to two weeks to review the module for ease of use and the applicability to inpatient nursing department EMR workflows. The review session began after IRB approvals from Walden University and the partner organization are obtained and upon completion upon completion of the first iteration of the education module. Revision of the module continued until satisfactory content and presentation style were achieved. A

final review and evaluation of the education module, pre- and post-tests, and participant satisfaction survey were conducted by the partner organization's system nursing director.

### **Summary**

Section 2 of this paper explored the concepts, models, and theory utilized in establishing the project's framework. The literature review process was reviewed, including identification of the current gaps related to educating and preparing nurses for their role in ensuring positive healthcare outcomes through screening for and addressing SDOH concerns and needs. The relevance and background related to the DNP education project and the roles of the DNP student and project team were also explained.

The practice problem identified was nursing's lack of compliance with completing the SDOH screening on patients admitted to the acute care environment, which framed the practice-focused question: Will the completion of a staff education module increase nursing knowledge of SDOH concepts and their impact on healthcare outcomes? The review of relevant literature and local, state, and federal statistics assisted in outlining the content and necessity of the educational intervention. The potential benefits of screening and addressing the SDOH combined with nursing's opportunity to positively impact the process was presented to establish the DNP project's significance to nursing practice.

Section 3 further addresses the practice-focused question, discusses the sources of evidence informing the DNP education project, and presents the methods of analyzing and synthesizing the collected data.

### Section 3: Collection and Analysis of Evidence

#### **Introduction**

The DNP education project aimed to improve nurses' knowledge and awareness of the SDOH through a text-narrated PowerPoint learning module. Data was collected via a pretest, posttest, and participant satisfaction survey and analyzed using descriptive statistics. Six months after the education project was first presented, EMR reporting will be performed by the partner site's EMR vendor to gather post-education screening compliance data, and a comparison of pre- and post-intervention screening compliance rates will be performed by the partner organization's nursing informatics team. Section 3 of this paper explores the practice-focused question, sources of evidence informing the DNP project, and the analysis and synthesis processes.

#### **Practice-Focused Question(s)**

This DNP project aimed to address the practice-focused question: Will the completion of an education module improve nursing knowledge of SDOH concepts and their impact on healthcare outcomes? The education module was designed to:

1. inform nurses about the SDOH concepts and their impact on healthcare outcomes,
2. provide real-life examples of available organizational and community resources and referral opportunities, and
3. outline and demonstrate the use of EMR tools designed to collect SDOH data for individual patients, summarize findings, and highlight potential risk areas.

Authors and scholars maintain the importance of including SDOH concepts in nursing and medical school curriculums, but there are scant resources or recommendations about how to educate and prepare nurses working in acute care hospitals. The DNP staff education project sought to address this identified gap in practice by providing nurses with education about the SDOH concepts, the benefits patients can realize through appropriate referrals and resources, and the tools available in the partner organization's EMR.

### **Sources of Evidence**

Sources of evidence used to address the practice-focused question and design the educational PowerPoint included scholarly peer-reviewed literature, textbooks, and the following U.S. Government websites and university-based websites:

- Center for Community Health and Development (n.d.)
- Centers for Disease Control and Prevention (Centers for Disease Control and Prevention - Division of Community Health, 2013; Centers for Disease Control and Prevention, 2018a, 2018b, 2021, n.d.; Healthy People 2030, 2021)
- Healthy People 2030 (2021)
- Healthy People 2020 (Office of Disease Prevention and Health Promotion [ODPHP], 2021)
- National Academy of Medicine (2021)
- Centers for Medicare and Medicaid Services (2020)

Additionally, the Community Health Assessment 2019 was used to inform nurses about local SDOH risks (Dayton & Montgomery County Public Health, 2019). The report is available to the general public and presents a summarization of data from sources such as the Centers for Disease Control and Prevention's (CDC) Behavioral Risk Factor Surveillance System (BRFSS), Ohio Department of Health Vital Statistics, Greater Dayton Area Hospital Association (GDAHA) data, Dayton Children's Community Health Needs Assessment, U.S. Census Bureau, Ohio Cancer Incidence Surveillance System (OCISS), and the Ohio Disease Reporting System (ODRS). Utilization of this information provided insight about local population characteristics and risks. Structuring the module with examples applicable to nursing practice at the partner organization personalized the education and aided in capturing the learners' interest and attention (see Bray & McClaskey, 2013; Reber et al., 2018).

Collection, analysis, and synthesis of data from these resources provided current, evidence-based data and visuals for inclusion in the education module. One assumption of the project is that nursing knowledge of SDOH concepts coupled with increased understanding of the potential patient and community health benefits realized through SDOH screening and interventions will subsequently result in improved SDOH screening compliance.

### **Evidence Generated for the Doctoral Project**

Evidence generated by the DNP project included data from a pretest, a posttest, and the learner satisfaction survey. Participants were nurses from an inpatient critical care department at one of the partner organization's acute care hospitals. Selection of the



participatory department was based upon convenience and the guidance of the system nursing director, with preference given to units with 30 or more full-time nurses serving a critical care patient population. Participation in the education program was voluntary, and the completion of anonymous pretest, posttest, and satisfaction survey was encouraged. The education module was available for a period of 2 weeks and accessed through a web link distributed via email by the nursing unit's manager. The link provided access to the PowerPoint staff education module and imbedded pretest, posttest, and satisfaction survey, all of which were housed on the partner organization's SharePoint site.

The analysis and summarization of pre- and post-intervention compliance reporting data was outside the scope of this DNP project. However, the partner organization intends to work with the EMR vendor to obtain a report of the SDOH screening compliance 6 months after the education intervention. When the data are available, system nursing informatics team will perform the analysis and summary and then provide results to the critical care department manager and system nursing director.

### **Protections**

Procedures ensuring ethical protection of the participants and resulting data include IRB approval (# 01-25-22-0971098), guidance from Walden University, and permission from the partner organization prior to implementing the education intervention and collecting data. Per the DNP Manual for Staff Education, nurse participants were provided with Walden University's Consent Form for Anonymous Questionnaires prior to the educational intervention. The pretest, posttest, and satisfaction survey were conducted anonymously using Microsoft Forms® questionnaires. Neither

patient-identifying data nor nurse-identifying data were collected via the EMR vendor-generated report of SDOH screening compliance.

### **Analysis and Synthesis**

After selecting current and relevant literature for the framework and content of the education module, measurable project outcomes were identified and then guided the educational PowerPoint design. During the design and implementation of the project, I communicated with the project stakeholders to ensure their involvement and buy-in. According to Kirkpatrick and Kirkpatrick (2013), the first level of evaluation explores the degree to which participants react favorably to the learning event. This reaction feedback was collected via a brief satisfaction survey completed by participants after viewing the education module. The survey questions utilized A Likert scale of 1-5, from strongly disagree to strongly agree, to collect feedback on educational content, ease of activity completion, and the method of content-delivery. Participants had the opportunity to provide free-text, open-ended feedback about how the education module might be improved. This method of evaluation aided in gauging learner satisfaction based on the premise that a happy and satisfied learner is a better learner (Kirkpatrick, 2006; Kirkpatrick & Kirkpatrick, 2013). Data from the post-module survey of nursing participant's reaction evaluations was synthesized using descriptive statistics to determine the perceived impact of the education module.

Although the reaction evaluation format is convenient and easy to measure, one disadvantage is it does not provide an objective measure of knowledge transfer (Jeffery et al., 2015). To evaluate learning and knowledge transfer, a brief pre- and post-test was

designed using the learning objectives established for the education module. The pre-test measured participants' knowledge before the education module and the post-test measured participants' ability to apply newly gained knowledge upon module completion (Brigham and Women's Hospital Center for Nursing Excellence, n.d.). Although Brigham and Women's Hospital Center for Nursing Excellence (n.d.) suggested designing variations of the pre- and post-test questions to prevent participants from memorizing answers, Kirkpatrick (2006) recommended using the same test question content for pre- and post-testing to avoid challenges with test question consistency. To remain consistent with Kirkpatrick's evaluation methodology, the same pre- and post-test questions were used to evaluate learning.

Although it is outside the scope of the DNP project, the partner organization will compare pre- and post-education module SDOH screening completion compliance for the nursing department. Due to the voluntary nature of the education module and demanding nurse work schedules it was not expected that all nurses from the department would complete the training. The education module was not designed or administered using research methodologies, and it is not appropriate to suggest a correlation between the education module intervention and a change in the screening completion rate. However, the project data will be provided to the nursing department manager and shared with the partner organization leadership for quality improvement knowledge and to aid in decision-making about later project expansion.

The DNP project has limited generalizability due to the organization-centric specificity of the education module and the convenience-driven selection of a nursing

department. The voluntary recruitment approach might have also led to biased participation of high-performing nurses.

### **Summary**

In summary, Section 3 examined the practice-focused question and the sources of evidence informing the DNP education project. The plan for data collection, analysis, and synthesis was explained. Section 4 discusses the project findings, recommendations, the contribution of the doctoral project team, and the project's strengths and limitations.

## Section 4: Findings and Recommendations

### **Introduction**

The practice problem addressed by the DNP education module was the lack of nursing knowledge of SDOH concepts and the related low completion rate of the SDOH screening questions for admitted patients. Review of the literature indicated nurses are well-positioned to screen acute care inpatients for SDOH needs but did not describe the implementation and evaluation of screening programs or best practices for educating nurses about SDOH concepts. Section 4 examines the DNP project findings, implications, and recommendations, the contribution of the Doctoral project team, and the project's strengths and limitations.

### **Findings and Implications**

#### **Findings**

##### ***SDOH Education Module Evaluation by Content Experts***

The education module content was evaluated by the partner organization's system education manager and the critical care department educator who completed the Education Content Expert Questionnaire (Appendix B). The questionnaire consisted of four questions with a five-point Likert scale and one free text question. The responses were positive, as demonstrated in Table 1.

**Table 1***Education Content Expert Questionnaire (N = 2)*

Questions	1 = <i>Strongly Disagree</i>	2 = <i>Disagree</i>	3 = <i>Neutral</i>	4 = <i>Agree</i>	5 = <i>Strongly Agree</i>
1. The content aligns with the learning objectives.	0	0	0	0	2 (100%)
2. The content has the potential to increase nursing staff knowledge and awareness of SDOH concepts.	0	0	0	0	2 (100%)
3. The content is presented at an appropriate level for clinical nurses.	0	0	0	0	2 (100%)
4. The style and content of the PowerPoint educational program supports clinical nurses' learning needs	0	0	0	0	2 (100%)
5. Please share additional comments below as needed.	<p>“Followed a clear and logical presentation format offering regionally significant and interesting data. Visually pleasing with clear and informative graphics.”</p> <p>“Great power point. Informative and concise.”</p>				

Upon the receipt of positive feedback from the content experts, the educational presentation was finalized, and I coordinated with the partner organization's department manager and system nursing director to schedule and administer the education module. The education availability date range was communicated to the critical care nurses through signage in the staff lounge, verbal announcement by the manager during the department team meeting, and electronically via email. Access to the PowerPoint was provided by a link in the email communications. Access to the Forms pretest, posttest,

and satisfaction survey was provided by links embedded in the PowerPoint presentation. The Forms were configured to collect data anonymously while only allowing the submission of one set of responses, per form, per participant.

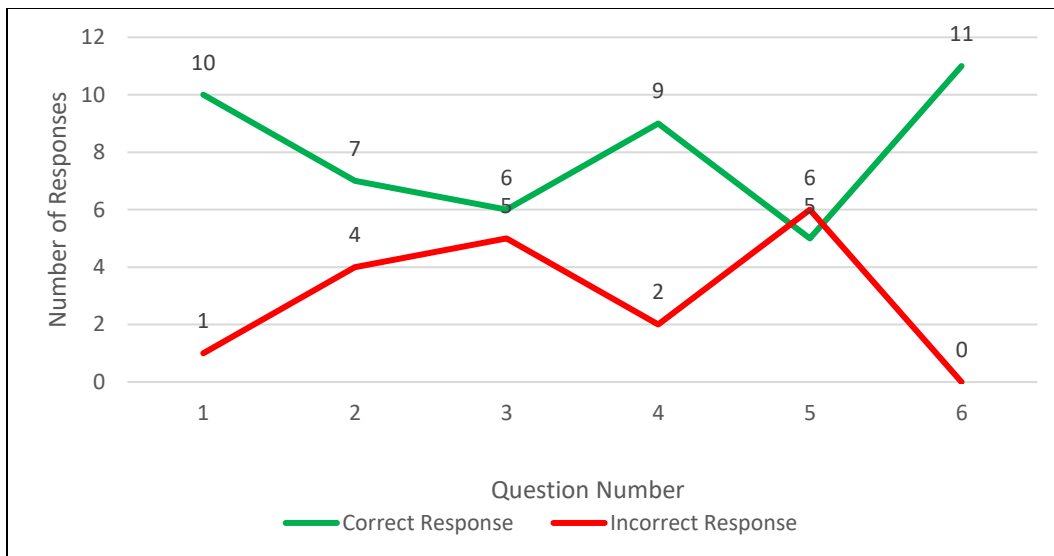
An unanticipated limitation of the DNP project was the limited number of participants in the educational intervention. Despite communicating the education availability through staff email, team meetings, and departmental signage, only 11 nurses participated in the pretest, education, and posttest. Nine nurses completed the participant satisfaction survey. The partner organization might wish to complete additional pilots of the educational intervention at other hospitals within the healthcare system and additional nursing care units such as advanced care, medical-surgical, obstetric, and behavioral health.

### ***Pretest and Posttest Scores***

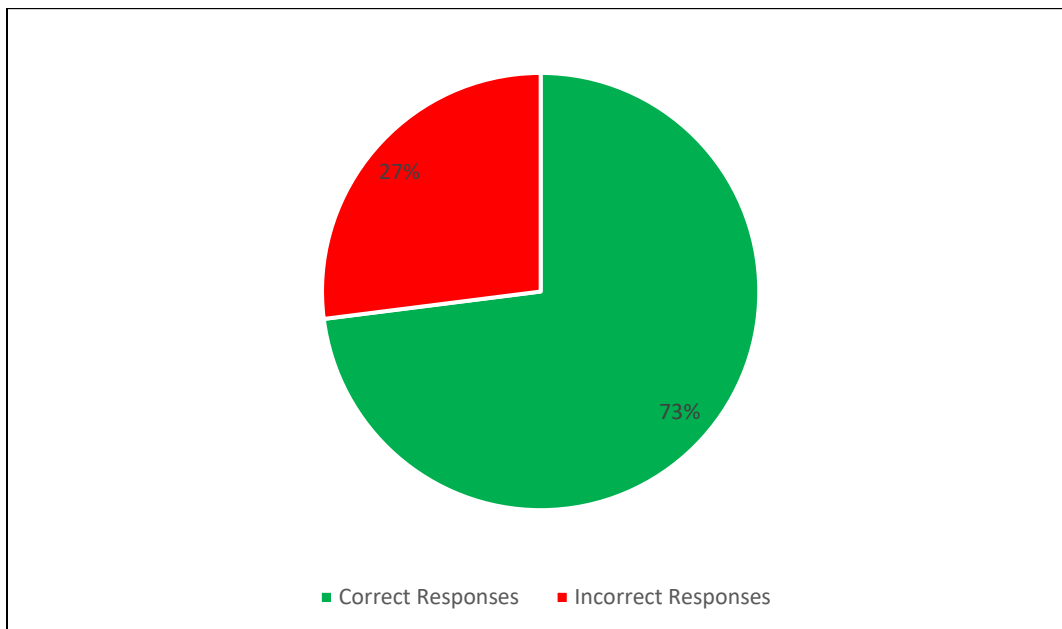
Evidence of nurse participant learning was collected using a pretest and a posttest with identical questions (Appendix C). The students' pretest and posttest scores were examined first in aggregate for each question, see Figures 1 and 3, and then by the overall percentage of correct versus incorrect responses for the pretest and posttest, see Figures 2 and 4.

**Figure 1**

*Pretest: Number of Correct and Incorrect Responses by Question*

**Figure 2**

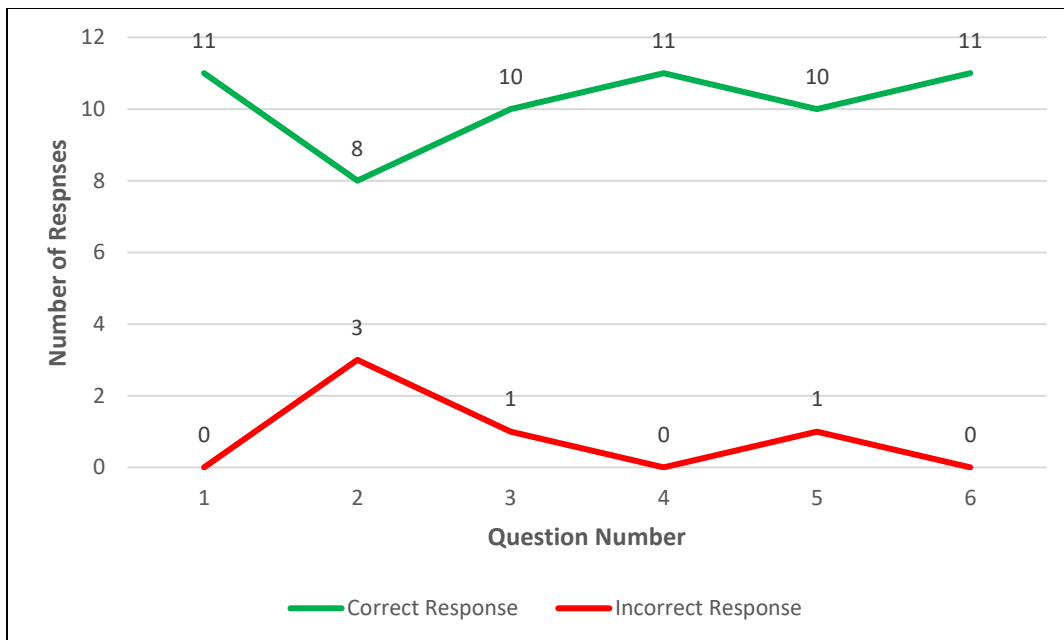
*Pretest: Total Percentage of Correct and Incorrect Responses*



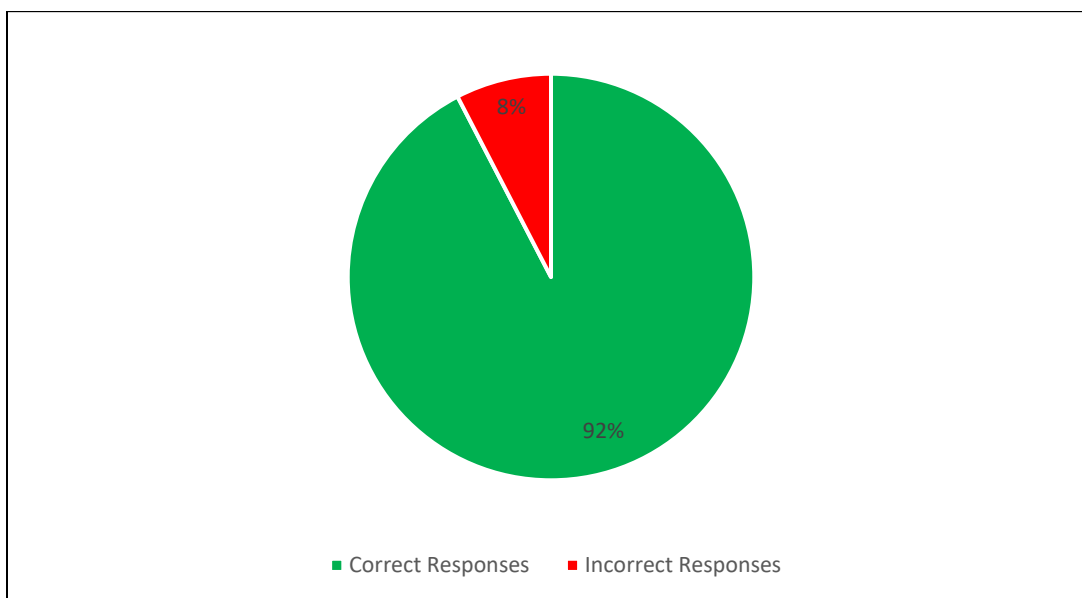


**Figure 3**

*Posttest: Number of Correct and Incorrect Responses by Question*

**Figure 4**

*Posttest: Total Percentage of Correct and Incorrect Responses*



The pretest and posttest data comparison demonstrated improved scores on the posttest for each question except for Question 6, which was answered correctly by all students on both the pretest and posttest. The total percentage of correct answers on the pretest for all students was 73% compared to 92% on the posttest. These data support a net increase in nurses' knowledge about the SDOH concepts and the related EMR tools.

### *Participant Satisfaction Survey*

Nine of 11 nurses completed the participant satisfaction survey questionnaire (Appendix D). Answers to the questionnaire are displayed in Table 2.

**Table 2**

#### *Participant Satisfaction Survey Questionnaire (N = 9)*

Questions	1 = <i>Strongly Agree</i>	2 = <i>Agree</i>	3 = <i>Neither agree nor disagree</i>	4 = <i>Disagree</i>	5 = <i>Strongly Disagree</i>
1. The educational program changed my attitude on the importance of SDOH screening.	2 (22%)	6 (67%)	1 (11%)	0	0
2. The educational program supported my learning needs as a clinical nurse.	1 (11%)	7 (78%)	1 (11%)	0	0
3. The educational program content was presented at an appropriate level for clinical nurses.	2 (22%)	7 (78%)	0	0	0
4. The style and content of the PowerPoint educational program supported my personal learning needs.	1 (11%)	7 (78%)	1 (11%)	0	0
5. Please share additional comments below as desired.	"I appreciated the inclusion of the top 10 reasons individuals visit the hospital in this county."				

The first question on the survey addressed whether participants' attitude about the importance of SDOH screening was changed by the educational program. Eight of nine participants either strongly agreed or agreed the educational program changed their attitude and one participant indicated they neither agreed nor disagreed their attitude was changed. Understanding the importance and impact of SDOH screening and the resulting patient referrals to resources is particularly significant, as nurses who understand the rationale and benefits of the screening are more likely to take time to complete it.

The second question on the survey explored whether the educational program supported the learning needs of the clinical nurses. Eight of nine participants either strongly agreed or agreed the program supported their learning needs. One of the participants neither agreed nor disagreed their learning needs were supported. The third question addressed whether participants felt the educational program content was presented at an appropriate level for clinical nurses. All nine of the participants either strongly agreed or agreed the content was presented at an appropriate level. Finally, the fourth question investigated whether the participants felt the style and content of the PowerPoint presentation supported their personal learning needs. Eight of the participants indicated that the style and content supported their personal learning needs while one participant neither agreed nor disagreed with the statement.

In summary, the survey results demonstrated the educational program influenced participant attitudes about the importance of SDOH screening while the PowerPoint presentation supported their learning needs. The partner organization might wish to

explore presenting the content in other formats such as printed handouts, live lecture, or a group learning activity to accommodate a variety of learning styles.

### **Recommendations**

The recommendations resulting from this project are based on its strengths, limitations, and positive outcomes. Due to the limited amount of time available for nursing education and competing organizational priorities, the partner organization might wish to offer the education program to a sampling of nursing departments from other hospital sites and specialty areas for validation of educational value and participant satisfaction. Upon such validation, it is recommended that the partner organization further expand the SDOH education program to inpatient bedside nurses throughout the organization. Providing nurses with a more robust understanding of the SDOH concepts and the available EMR tools will assist with aid in closing the identified gap in practice. Moving forward, the partner organization's technical and clinical education team can continue to modify the SDOH education program to include new EMR features and updated learnings based on continued SDOH research and findings. Based on continued positive evaluation findings, the partner organization might also consider expanding the education program to include outpatient and ambulatory practice settings.

Standardized education for nurses in the system will assist with consistent messaging about the SDOH, evaluation of patient needs, and the referral of appropriate organizational and community services. The distribution of resources and services has the potential to foster positive social change and support individual and collective wellness goals for patients and the community.

### **Contribution of the Doctoral Project Team**

As anticipated, the members of the doctoral project team served in supportive and consultative roles throughout the DNP project. The partner organization's team members included the system nurse researcher, the system nursing professional practice director, and the system technical education manager. The system nurse researcher facilitated the partner organization's (Institutional Review Board) IRB application and approval process for the DNP project. The system inpatient education manager and critical care department nurse educator reviewed the education module, pretest, posttest, and satisfaction survey and completed the Education Content Expert Questionnaire.

The Walden University team members supporting the project were the committee chair, the 2<sup>nd</sup> committee member, and the URR. These team members supported the development of the doctoral project final products which will be disseminated at the partner organization and at the EMR vendor's annual conference in Madison, Wisconsin.

### **Strengths and Limitations of the Project**

Reflecting on the strengths and weaknesses of the project are an important component of learning and process improvement while also beneficial to the ongoing development of the nursing profession and practice. Strengths of the project include the process-improvement nature of the educational intervention and the exploration of inpatient nurses' knowledge of the SDOH concepts and related tools within the partner organization's EMR.

Limitations of the project include the limited scope of implementation, the small number of participants who completed the education module ( $N = 11$ ), and the lack of

coded pre- and posttests that would have supported an opportunity to perform a statistical analysis of the data. The post-Covid environment limited nurse participant engagement as the nurses continue to work long hours with fewer supportive resources while the partner organization manages staffing shortages, restrictive regulatory measures, and decreased reimbursement for care.

Finally, the organization-specific nature of PowerPoint education presentation and related pretest and posttests can be viewed as both a strength and a limitation. They referenced and displayed specific EMR features that were customized by the partner organization. This design supported the application of the nurses' newly acquired knowledge into practice through providing visual cues of where the SDOH screening questions and supporting tools reside in the EMR. However, should other healthcare organizations wish to replicate the education intervention, components of the PowerPoint, pre-, and post-test will require modification.

### **Summary**

In review, Section 4 examined the DNP project findings, implications, recommendations, the contribution of the doctoral project team, and the project's strengths and limitations. Section 5 describes the dissemination plan and an analysis of self.

## Section 5: Dissemination Plan

The plan for dissemination of this work within the partner organization includes a presentation to the System Nursing Informatics Committee, the System Nursing Director of Nursing Excellence, Research, and Informatics, Technical and Clinical Education Departmental leadership, and the nurse manager and director of the department who participated in the initial educational program. The live presentation will include a PowerPoint overview of the DNP project, the educational program, measurement tools, summarized findings, and recommendations. Time for questions and feedback will be scheduled at the presentation conclusion.

This work will also be disseminated, pending acceptance, at a live presentation at the Epic User Group Meeting (UGM) in the fall of 2023. UGM conference provides a forum for Epic customers from across the nation and world to share experiences and lessons learned related to the effective utilization of the application toward improved patient outcomes increased clinical user satisfaction and regulatory compliance. Presenters will include myself and an Epic analyst and system nursing director from the partner organization.

### **Analysis of Self**

As a registered nurse of over 30 years and nurse informatics specialist of 12 years, I have gained real-world experience throughout my practice and continued education. The completion of Walden University's DNP program and this DNP project provided me with the knowledge and skills needed to identify practice issues and systematically create evidence-based plans and solutions that can contribute to positive change at the

organizational, professional, and societal level. With more time to focus on the application of my skills, I plan to continue practicing as a leader within my organization by advocating for evidence-based nursing practice and the implementation of nursing-centric organizational projects. Perhaps most importantly, I will strive to incorporate measures and evaluation in my work as these components serve to demonstrate success, identify lessons learned, and improve future programs. I will also expand upon my nursing informatics specialist role by serving at the state and national levels of professional organizations such as the American Nurse Informatics Association (ANIA) and the Healthcare Information and Management Systems Society (HIMSS). In the future, I aspire to teach college-level nursing informatics courses.

### **Summary**

This DNP staff education project was designed to increase nurses' knowledge about the SDOH concepts, provide real-life examples of available referral opportunities and community resources that can positively impact healthcare outcomes, and outline the EMR tools designed to collect SDOH data for individual patients, summarize findings, and highlight potential risk areas. Through performing all steps of the project, I gained knowledge and an enhanced appreciation of the critical appraisal of evidence, application of evidence to practice, and the value of contributing to nursing knowledge and nursing practice.



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### Appendix A: Learning Objectives

1. Describe SDOH concepts.
2. Explain the importance of SDOH screening.
3. Highlight the Epic electronic medical record (EMR) tools designed to help clinicians evaluate patients' SDOH needs.

### Appendix B: Content Expert Questionnaire

Please read the statements below and select the appropriate options to evaluate the program content that will be used to educate the clinical nurses about social determinants of health (SDOH) concepts and the SDOH tools located within the Epic electronic medical record.

1	Strongly Disagree
2	Disagree
3	Neutral
4	Agree
5	Strongly Agree

Use the Likert Scale above when responding to the following statements:

Content Details	Score #
The content aligns with the learning objectives.	
The content has the potential to increase nursing staff knowledge and awareness of SDOH concepts.	
The content is presented at an appropriate level for clinical nurses.	
The style and content of the PowerPoint educational program supports clinical nurses' learning needs.	

Please share additional comments below as desired:

## Appendix C: Pretest and Posttest

Reach each question and choose the ONE best answer. Submitted answers will be recorded anonymously using the SharePoint Forms application.

1. The social determinants of health (SDOH) can be broadly defined as:
  - a. The cumulative effects of medical treatment on a patient's health status
  - b. The social and environmental factors that affect a patient's health status
  - c. The biochemical impact of pharmaceuticals within a population
  - d. The ethical and legal considerations associated with healthcare autonomy
2. Research studies have shown that social determinants of health (SDOH) have a negligible impact on health outcomes.
  - a. True
  - b. False
3. Healthy People 2020 organizes the social determinants of health (SDOH) into the following 5 domains:
  - a. Housing, Healthy Lifestyle, Education, Genetic Predisposition, and Treatment Plan Compliance
  - b. Acceptance, Exploration, Education, Remediation, and Societal Outcomes
  - c. Economic Stability, Education, Health and Health Care, Neighborhood and Built Environment, and Social and Community Context
  - d. Income Potential, Health Care Affordability, Geopolitical Climate, Social Stability, and Cultural Influences
4. Providing the contact information for a local food bank resource is an example of a possible intervention for a patient with an identified food insecurity concern.
  - a. True
  - b. False
5. At this organization, social determinant of health screening is a component of the nursing discharge navigator.
  - a. True
  - b. False
6. At this organization, concerns identified through social determinant of health (SDOH) screening are highlighted in the patients' Epic Storyboard.
  - a. True
  - b. False

## Appendix D: SDOH Participant Satisfaction Survey

Please read the following statements and select the appropriate options to evaluate the education program content and PowerPoint presentation. Your responses will be recorded anonymously using the SharePoint Forms application.

1	Strongly Disagree
2	Disagree
3	Neutral
4	Agree
5	Strongly Agree

Use the Likert Scale above when responding to the following statements:

	1	2	3	4	5
The educational program changed my attitude on the importance of SDOH screening.					
The educational program supported my learning needs as a clinical nurse.					
The program content was presented at an appropriate level for clinical nurses.					
The style and content of the PowerPoint presentation supported my personal learning needs.					

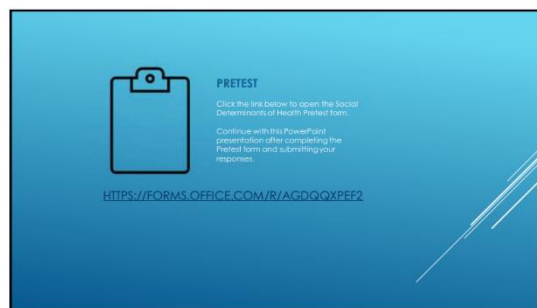
Please share additional comments below as desired:



## Appendix E: Social Determinants of Health Education Project



1



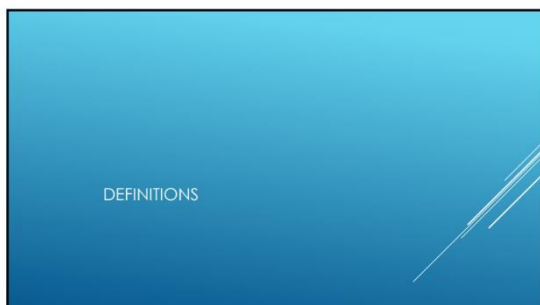
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6

### SOCIAL DETERMINANTS OF HEALTH (SDOH) DEFINITIONS

- ★ Social determinants of health (SDOH) are broadly defined as social and environmental factors that affect patients' health status. By tracking patients' SDOH, healthcare organizations can provide clinicians with a more complete patient story to help them intervene with patients who are at risk of negative health outcomes. (Epic Clinical System)
- Social determinants of health (SDOH) are the conditions in the environments where people are born, live, learn, work, play, worship, and age that affect a wide range of health functioning, and social inequalities and risks. (U.S. Department of Health and Human Services, Healthy People 2030)
- The social determinants of health (SDH) are the non-medical factors that influence health outcomes. They are the conditions in which people are born, grow, live, and age, and the universal and systemic forces that shape the conditions of daily life. These factors and systems include economic, policies and systems, development, education, social norms, social policies and political systems. (World Health Organization)

7

### IMPORTANCE OF SCREENING

8

GOOD HEALTH BEGINS WHERE WE LIVE, WORK, AND PLAY (ROBERT WOOD JOHNSON FOUNDATION)

9

### WHY COMPLETE THE EPIC SCREENING?

- Determine patients' individual risks
  - Provide resources, education, and assistance
  - PREMIER HEALTH has resources to aid patients with food insecurity/hunger and transportation needs.
- Build healthier communities
- Inform and guide population health programs

10

### OHIO PUBLIC HEALTH IS AT RISK

Ohio's public health outcomes generally lag those of the United States, and it has not taken several steps that would strengthen its preparedness for public health emergencies. Deaths owed to drug misuse, alcohol, or suicide outpace the country as a whole. Its rates of obesity and related conditions indicate an area of concern, with the percentage of adults with obesity higher than the U.S. median, as rates of diabetes and hypertension are high. Finally, the state achieved a score of three out of six possible in measures of public health preparedness for diseases, disasters, and bioterrorism. (Built for America's Health, 2022)

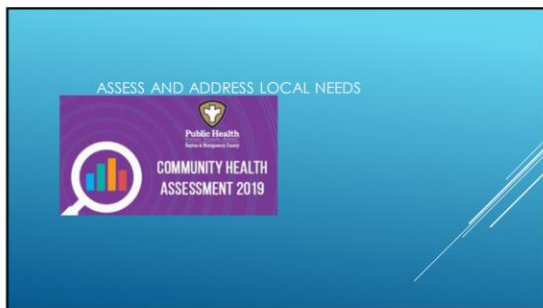
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### Ohio at a glance

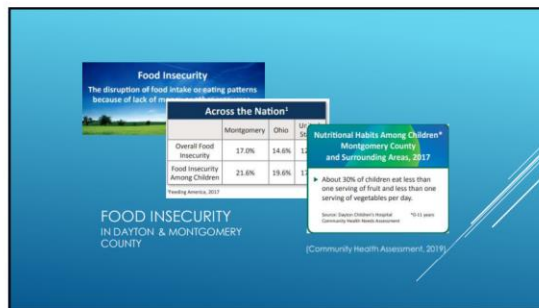
52.4 Percent of population aged 18 and over who are obese (2017-21)	High Tier Public health emergency preparedness score (2012)	34.5 Percent of adults who have hypertension (2017)	12.5 Percent of adults who have diabetes (2017)	15.7 Percent of children age 0-17 who are overweight (2017)
35.5 Percent of population that smoke (2019)	72.9 Hypertension prevalence (2019)	13.8 Hypertension prevalence (2019)	48.6 Hypertension prevalence (2019)	11.6 Hypertension prevalence (2019)

(Built for America's Health, 2022)

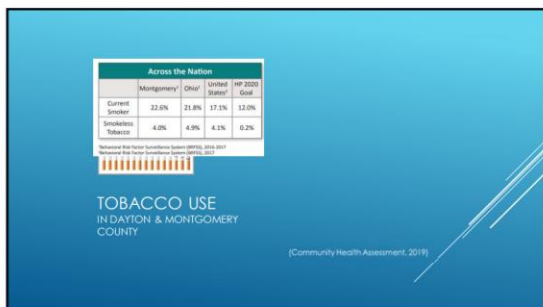
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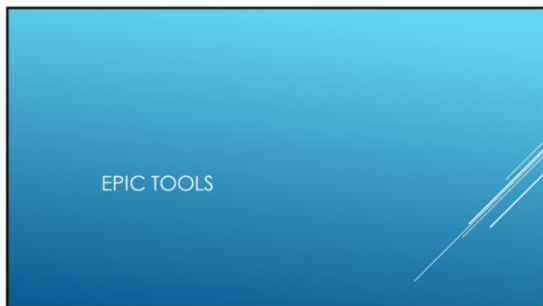
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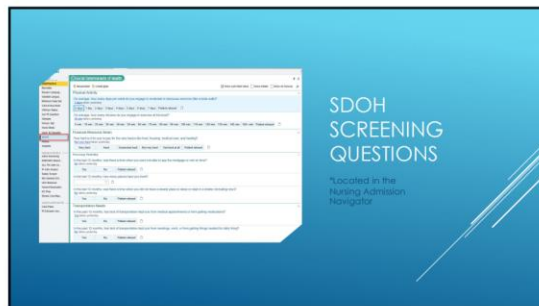
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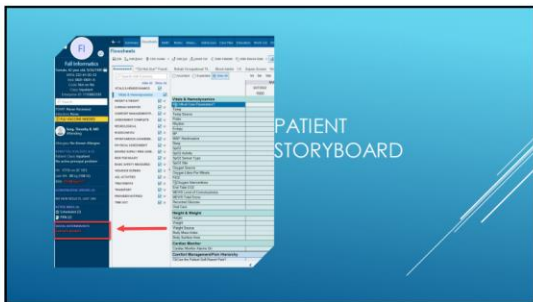
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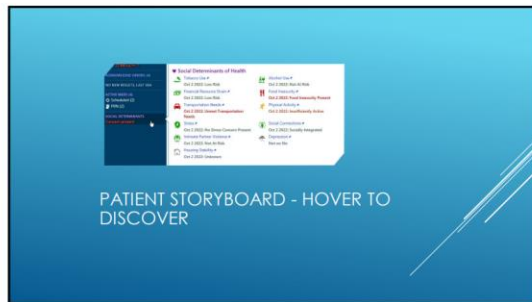
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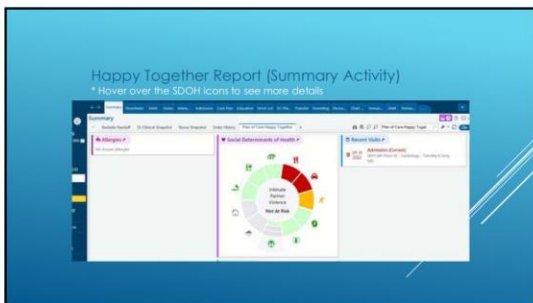
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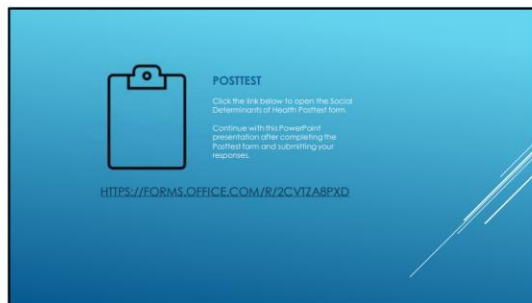
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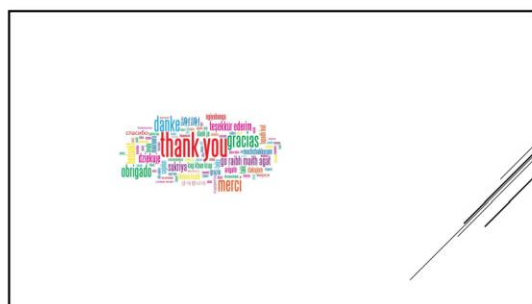
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