National Advisory Council on Nurse Education and Practice (NACNEP)

Integration of Social Determinants of Health in Nursing Education, Practice, and Research

16th Report to the Secretary of Health and Human Services and the U.S. Congress

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The National Advisory Council on Nurse Education and Practice

The Secretary of Health and Human Services (HHS) and, by delegation, the Administrator of the Health Resources and Services Administration (HRSA), are charged under Title VIII of the Public Health Service Act, as amended, with responsibility for a wide range of activities in support of nursing education and practice including: enhancement of the composition of the nursing workforce; improvement of the distribution and utilization of nurses to meet the health needs of the nation; expansion of the knowledge, skills, and capabilities of nurses to enhance the quality of nursing practice; development and dissemination of improved models of organization, financing, and delivery of nursing services; and promotion of interdisciplinary approaches to the delivery of health services, particularly in the context of public health and primary care.

Authority

Authority is granted though section 851 of the Public Health Service Act, as amended (42 U.S.C. 297t). The Council is governed by provisions of the Federal Advisory Committee Act, as amended (5 U.S.C. Appendix 1-16), which sets forth standards for the formation and use of advisory committees.

Function

The National Advisory Council on Nurse Education and Practice (NACNEP, or the Council) advises and makes recommendations to the Secretary and Congress on policy matters arising in the administration of Title VIII, including the range of issues relating to the nurse workforce, nursing education, and nursing practice improvement. The Council may make specific recommendations to the Secretary and Congress regarding programs administered by the Division of Nursing and Public Health, particularly within the context of the enabling legislation and the Division's mission and strategic directions, as a means of enhancing the health of the public through the development of the nursing workforce.

Additionally, the Council provides advice to the Secretary and Congress in preparation of general regulations and with respect to policy matters arising in the administration of this title including the range of issues relating to nurse supply, education, and practice improvement.

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Executive Summary

Healthcare services, the care provided by nurses, physicians, and other health professionals, account for only a small fraction of the modifiable factors that contribute to health outcomes. The rest depends on a combination of health behaviors, social/economic conditions, and the physical environment, which together are so central to health that they have been called the social determinants of health (SDOH). The World Health Organization has defined SDOH as "the conditions in which people are born, grow, live, play, work and age, as well as the systems in place to deal with illness." Differences in health outcomes between different populations can be attributed to the different impacts of the SDOH.

Nursing is the largest health profession in the U.S. Nurses are well suited to address the SDOH because they practice in a wide variety of acute care, primary care, and community settings, and can help address concerns about their patients' lives that can impact their health. To be truly effective, though, nurses need to be appropriately educated about SDOH and have adequate knowledge and tools to reduce the impact of SDOH on health outcomes.

This report of the National Advisory Council on Nurse Education and Practice discusses the need for programs to support education and research in the SDOH within nursing curricula, to ensure that graduating nurses understand and incorporate the concepts of SDOH and that nursing faculty are prepared to teach them.

Nursing Education

Nursing education programs have been slow to integrate concepts of the SDOH into new curricula. Furthermore, teaching the SDOH to students only as academic content, rather than through clinical experiences, does not equip them to conduct the necessary assessments and take actions to help society achieve health equity and eliminate disparities. While nurses need to learn about acute care, they also need to develop skill in engaging the community in improving health, which may be a more challenging task. There are several examples of nursing programs using experiential learning to expose students to the needs of underserved populations, to help better understand the impact of the SDOH on patients, families, and communities.

Also, a diverse nurse workforce is essential for providing culturally competent care to minority communities. However, ethnic minorities remain underrepresented in nursing schools. There are many social and structural barriers that impede diversity in nursing education, and therefore entry into the nursing profession. One remedy is the holistic admissions process, whereby applicants are evaluated on a range of attributes. Another is to focus on student retention by offering tutoring and academic enrichment programs, as well as financial support. Improving nurse education in the SDOH will also require a diverse faculty with the resources needed to develop evidence-based innovative educational models.

Nursing Practice

Improving nursing practice will require more training in addressing the SDOH. Nurses work within the confines of the healthcare system, and may miss the opportunity to improve health more substantially by considering interventions that address the larger social, political,

economic, and physical environment. The lack of formal training in the SDOH may hinder nurses from helping patients, their families, and communities to meet basic needs and benefit from effective care. However, there are many examples of nurses leading programs that address needs in the surrounding community by identifying and addressing SDOH needs.

Nursing and Telehealth

Limited access to healthcare facilities and an unequal distribution of healthcare professionals in certain areas are important factors in the SDOH that can exacerbate health inequities. Telehealth, the use of electronic and related technologies to provide health education, monitoring, and care over a distance, can enhance the accessibility of nursing services and provide the opportunity to reach otherwise underserved areas in mitigating the impact of the SDOH. The rapid development, adoption, and sophistication of communication technologies can help position nurses to broaden healthcare access through the use of telehealth services. The modalities and uses of telehealth in the United States will continue to evolve with the changing healthcare needs of the country, and nurses will need education and ongoing training to adapt.

Nursing Research

The science that informs nursing care and nursing practice is developed through *nursing research*, which can be defined as the process of evaluating the influence of behavioral, environmental, and social factors on health conditions and health outcomes. Nursing research provides a valuable perspective on the delivery of and changes in healthcare. Through nursing and other forms of healthcare research, there is an ever-growing body of evidence that demonstrates how non-clinical determinants can influence health and health equity for individuals, families, and communities. Nurse educators need to identify the necessary competencies to foster a new generation of scholars, practitioners, and researchers. New research promises to inform policy through economic impact studies that will help eradicate the adverse effects of SDOH on health outcomes. There are several knowledge gaps, and targeted funding and support for nursing research can help close those gaps.

Conclusion

The SDOH may be identified as social and environmental factors, such as access to healthcare, food, quality education, and adequate housing, that have a direct impact on the health of individuals, families, communities, and whole populations. Investment in SDOH education, training, and research for nurses can strengthen the nursing workforce and help nurses provide more effective care for all patients and design, implement, and assess new care models.

Recommendations

Recommendation 1: The Secretary and Congress should fund/support academic-community organization partnerships to establish clinical placements and service learning opportunities for nursing students that provide a range of practice experiences with an emphasis on addressing the social determinants of health with nurse-led interprofessional teams. These experiences should include: care coordination, telehealth (or utilizing the underpinnings of telehealth), and health promotion/health opportunities for individuals, families, and the community.

Recommendation 2: The Secretary and Congress should fund demonstration projects related to residency programs for advanced practice registered nurses that emphasize strategies to address the social determinants of health among vulnerable populations in rural and underserved communities.

Recommendation 3: The Secretary and Congress should provide funding for research/demonstration projects that implement innovative strategies for the integration of the social determinants of health in curricula for nursing students that include faculty development, effective care delivery models, and identification of best practices.

Recommendation 4: The Secretary and Congress should expand investment in the social determinants of health science through the National Institute of Nursing Research, the National Center for Advancing Translational Science, and other relevant federal research agencies, including infrastructure and training, support research studies on best practices relative to the right competencies, assessment, and evaluation of strategies to address the social determinants of health.

Introduction

Healthcare services, the care provided by nurses, physicians, and other health professionals, account for only about 10 to 20 percent of the modifiable factors that contribute to health outcomes. The remaining 80 to 90 percent depend on health behaviors (e.g., tobacco use, diet/exercise, and alcohol intake), social/economic factors (e.g., education level, income, and employment status), and the physical environment (e.g., air quality, housing, and access to transportation) (Magnan, 2017). Together, these various factors are so central to health that they have been called the social determinants of health (SDOH).

The World Health Organization (WHO) has defined SDOH as "the conditions in which people are born, grow, live, play, work and age, as well as the systems in place to deal with illness" (WHO, n.d.). Differences in health outcomes between different populations can be attributed to such individual and community conditions as residential or work location, availability of recreational space, distance to grocery stores, public safety, transportation options, and access to community health clinics (Department of Health and Human Services [HHS], 2010; HHS, 2014; Solar & Irwin, 2010). The SDOH "are influenced by economic, political, and social factors linked to health inequities (avoidable inequalities in health between groups of people within populations and between countries) … [that] are caused by economic, political, and social conditions" (Trent, Dooley, & Douge, 2019).

This report of the National Advisory Council on Nurse Education and Practice (NACNEP) discusses the need for programs to support education in the SDOH within both undergraduate and graduate nursing curricula. The goal is to ensure that graduating nurses are well-equipped to care for underserved populations through community engagement and by incorporating the concepts of SDOH, and that nursing faculty are prepared to teach them.

Social Determinants of Health and Outcomes

The SDOH have a broad influence on population health, primary health care, health policy, and public health. Failure to account for the SDOH as a link to the underlying causes of disease risks perpetuating a cycle of health disparities and inequality for generations to come (Lipman, 2019). For example, in 2017, nearly 28 million people in the U.S. (about 8% of the population) lacked health insurance, a significant economic factor in the SDOH (Berchick, Hood, & Barnett, 2018). Without insurance, individuals have limited access to affordable preventive healthcare services or may choose to wait until they become sick to visit a physician. Even some individuals with insurance may not feel comfortable visiting providers because of language/communication barriers or because they lack transportation to reach a provider. Factors such as these contribute to why some Americans are healthier than others and why the SDOH are tied to health disparities in certain populations (Centers for Disease Control and Prevention [CDC], 2013).

Many studies focusing on health outcomes show that the SDOH do matter and can have a significant impact on a population's health. A study across 14 states found an association between higher levels of poverty and increasing hospitalization rates for influenza (Hadler et al., 2016). Another study found that individuals living in neighborhoods with opportunities for physical activity, lower crime rates, and availability of healthy food had a lower prevalence of hypertension and obesity (Diez Roux, Mujahid, Hirsch, Moore, and Moore, 2016).

Banerjee et al. (2017) examined individuals with chronic kidney disease (CKD) living both with and without food insecurity. Food insecurity, another major SDOH factor, indicated residences in which individuals experienced hunger or inadequate intake, such as nutrient-poor foods and fewer servings of fruits, vegetables, and dairy products. Those with CKD who experienced food insecurity were more likely to have diabetes and hypertension, and were more likely to develop end-stage renal disease, compared with those with CKD and no food insecurity.

Nurses and Social Determinants of Health

There are around four million registered nurses (RNs) in the U.S., making nursing the largest of the health professions (Smiley, et al, 2018). RNs are well suited to address the SDOH because they practice in a wide variety of settings including schools, businesses, homes, communities, rural/urban areas, ambulatory clinics, and, of course, hospitals. Additionally, for the 17th year in a row, nursing has been ranked as the most trusted profession (Robert Wood Johnson Foundation [RWJF], 2017). Because they tend to spend more time with patients, nurses can help make patients more comfortable answering questions and addressing concerns about their lives outside of the clinic or hospital that can impact their health (Williams, Phillips, & Koyama, 2018).

Nurses alone are not sufficient to tackle SDOHs. Addressing SDOH requires the collaboration of many health professionals as well as multiple sectors of society (e.g., education, justice, and business and employment), as well as local and federal governments (Andermann, 2016). Still, nurses are at the front lines of clinical care and are uniquely positioned to serve as catalysts for change. To be truly effective, though, nurses need to be appropriately educated about SDOH and have adequate knowledge and tools to reduce the impact of SDOH on health outcomes.

Historical Efforts by Wald and Brewster

Nursing has a strong history of working at the intersection of health and social services to address the needs of the population (Tilden, Cox, Moore, & Naylor, 2018). In the late 19th century, pioneering nurses Lillian Wald and Mary Brewster recognized that sicknesses common among certain families and communities had to be viewed as part of a larger set of social problems that nurses could address (Buhler-Wilkerson, 1993; Fee & Bu, 2010). Using a multisectoral approach that engaged community members such as entrepreneurs, lawyers, and others, they established the Henry Street Settlement to provide care for resident living in New York City's Lower East Side (Buhler-Wilkerson, 1993; Fee & Bu, 2010). The Henry Street Settlement still exists today and continues to support various healthcare and social initiatives.

Educating Students to Address the Social Determinants of Health

Despite many efforts over the years by nurses like Wald and Brewster, nursing education programs have been slow to develop comprehensive community-based immersive experiences that integrate the SDOH into the curriculum at the undergraduate or graduate levels (Thornton & Persaud, 2018). Much nursing education still centers on acute care in the hospital setting. While nurses need to learn about acute and chronic health conditions to work with patients in all settings, they also need to develop skill in engaging the community in improving health, which may be a more complex and challenging skill than starting an IV.

The United States spends more on healthcare per capita than any other nation, yet it ranks 34th globally in health outcomes (Reimers-Hild, 2018). Despite expensive care and the continuation of less than optimal outcomes, little has changed in how the healthcare workforce is educated based on research-informed practices and knowledge (Reimers-Hild, 2018).

Most undergraduate nursing education curricula focus on experiential learning opportunities within acute care settings. Meanwhile, graduate education for advanced practice registered nurses (APRNs) concentrates on specialized care to individuals in primary care and community-based settings. In both cases, little attention is given to the environmental context in which people live, despite a growing base of evidence that environments impact health and that health disparities are often rooted in one's social and economic circumstances (Artiga & Hinton, 2018).

Current calls for more training in SDOH for nurses include the 14th report of NACNEP, which issued a call to redesign nursing curricula to include educating the students on population health, which was defined as "an approach that treats population as a whole (including the environmental and community contexts) as the patient" (HRSA, 2016). Calls to promote interprofessional, team-based collaborative practice experiences within communities in addressing SDOH have come from the Josiah Macy Jr. Foundation (2016) and the Advisory Committee on Interprofessional, Community Based Linkages (HRSA, 2014), among others.

Looking to the Future of Nursing Education

The future nursing workforce needs appropriate training to implement and evaluate interventions aimed at addressing the SDOH to achieve health equity (National League for Nursing (NLN), 2019). Thus there is a strong need for academic partnerships with communities that incorporate clinical placements and service learning opportunities for nursing students to emphasize addressing SDOH, including the use of nurse-led interprofessional teams for care coordination, telehealth (or utilizing the underpinnings of telehealth), and health promotion/health opportunities for individuals, families, and the community.

The 2017 report *Vital Directions for Health and Health Care*, published by the National Academy of Sciences, Engineering, and Medicine (NASEM), stated that the future workforce will need skills in assessing and addressing the SDOH and knowledge of effective prevention strategies. Health professional must also be comfortable working in cooperative interprofessional teams at the interface of healthcare and the social environment.

Sharma and colleagues (2018) stated that teaching the SDOH to students only as academic content – rather than through clinical experiences – does not provide them with adequate knowledge, skills, or abilities, or equip them to take the necessary social and/or political actions required to help society achieve health equity and eliminate disparities (Buhler-Wilkerson, 1993; Fee & Bu, 2010). SDOH education should be universalized and integrated into a broader educational program designed to provide students with a comprehensive understanding of the causes that contribute to health, how those causes vary by social circumstances, and how health equity can be achieved (NLN, 2019; Siegel, Coleman & James, 2018).

One way to accomplish this goal is through demonstration projects such as clinical immersion programs or residency programs, which can provide students with first-hand knowledge of the lived experience of underserved populations and enable them to design and evaluate targeted strategies aimed at improving the living conditions of these populations. These types of programs aim to support nurses in expanding practice skills and workflow processes needed for independent practice as primary care practitioners serving in rural and underserved areas.

Academic institutions receiving federal education or research grants can help advance the specificity of the role of the nurse practitioner (NP) in rural and underserved areas. These academic sites need funding to align support for NPs as they roll out to underserved areas and rural healthcare sites supported by communities.

There are several ways to integrate education on SDOH into the nursing curricula:

- Nursing schools need to create sustained program partnerships with communities that advance the health of the community while expanding opportunities for engaging students.
- Nurse faculty must be prepared to help students navigate through the complex relationships among the individual, the social environment, the healthcare system, and health goals and outcomes.
- Nurse faculty must design immersive, community-based, community-engaged, and collaborative learning student experiences at both the undergraduate and graduate levels.

Examples of Programs that Incorporate Social Determinants of Health

Below are some examples of programs developed for students in nursing and other health professions that incorporate training in the SDOH.

Florida International University

The *Neighborhood Health Education Learning Program (NeighborhoodHELP)* is an interprofessional service-learning program implemented by Florida International University that targets underserved households in Miami Dade County (Greer et al., 2018). The program includes students from nursing, medicine, and social work, and may also involve law students to address a client's legal issues, education students to provide tutoring, and behavioral staff to provide counseling. Through the program, a specialist conducts an assessment of each household's needs and strengths in several SDOH categories (e.g., food availability, income, transportation, literacy). The care team then creates a holistic care plan to address both health and social needs. Students then provide direct services (e.g. health screening and education, medication management) through home visits and a mobile health center. Over the past six years, nearly 1,500 students have conducted close to 7,500 home visits and identified nearly 1,400 remediable SDOHs related to healthcare access, immigration, family stability, financial stability, and housing (Greer et al., 2018).

University of Arkansas

In 2014, the college of nursing at the University of Arkansas for Medical Sciences initiated the *Growing Our Own in the Delta* (GOOD) program to increase the understanding of SDOH among

master-level nursing students (Bryant-Moore et al., 2018). The one-semester program includes classroom training and a semester-long service learning project. Each semester begins with an all-day orientation led by program staff and community leaders. Staff provide interactive sessions that provide an introduction to community engagement, SDOH, and health disparities. Academic readings for preparation and reflection are combined with service learning activities. The readings focus on defining and conceptualizing SDOH and on how providers can acknowledge them in a healthcare setting. Although a formal evaluation of the impact of the program has not yet been conducted, a total of 18 students have completed the program.

University of Alabama at Birmingham

The University of Alabama at Birmingham has developed *The Social Determinants of Health Project* to increase knowledge and acceptance of SDOH among nurse practitioner (NP) students (Buys & Somerall, 2018). The program focuses on increasing competency to integrate SDOH in screening and referrals to clinical care. In the first phase, students are provided with an overview on the SDOH and complete a literature review on SDOH topics. They receive an SDOH screening tool for use in the clinical setting that includes items on food insecurity, housing, transportation, education, income, safety, and others. In the second phase, students develop referral toolkits and identify resources close to their clinical sites. In the third phase, students implement SDOH screening and provide referrals for patients who screen positive for an SDOH concern. A total of 169 students have completed the program, and preliminary findings suggest that students have increased knowledge of SDOH and the importance of screening and referrals.

The University of Pennsylvania

The University of Pennsylvania School of Nursing has developed a strategic plan to identify and integrate concepts and competencies of global community engagement across the undergraduate and graduate curriculum (Lipman, 2019). The school developed a new course, *Case Study - Addressing the Social Determinants of Health: Community Engagement Immersion*. The course offers experiential learning that enables students to develop an in-depth understanding of SDOH in vulnerable, underserved populations. It also helps students to design health promotion programs based on the community's strengths and needs. In addition, the School of Nursing recognized the need for faculty education and developed a three-part seminar series to educate health professionals about SDOH. More than 600 participants have attended the seminars, indicating a clear need and demand for this training.

Diversity in the Workforce to Address Social Determinants of Health

A diverse healthcare workforce is essential for providing culturally competent care to minority communities (Cohen, Gabriel, & Terrell, 2002). Healthcare providers who are members of the population they serve often improve communication and trust among ethnic minority populations through language and cultural concordance. They are also more likely to work in resource-poor rural and urban communities where health professions shortages exist thereby increasing provider services in underserved areas (LaVeist & Pierre, 2014; Williams et al., 2014). Additionally, health professionals from minority or disadvantaged populations are more likely to advocate for services and programs for their community because they are often keenly aware of the need for services in disadvantaged and underserved areas (LaVeist & Pierre, 2014; Williams et al., 2014).

However, ethnic minorities remain underrepresented in the nursing profession. According to the *2017 National Council of State Boards of Nursing Workforce Study Survey*, of the four million registered nurses (RNs) in the United States, minority groups accounted for 19.2 percent (Smiley, et al, 2018), which is significantly lower than the 42 percent estimate of ethnic minorities in the U.S. population (U.S. Census, 2018). The stagnant growth of ethnic minorities in the profession is significant and highlights the need to work toward increasing diversity in nursing if the goal is for the workforce to mirror the U.S. population.

Lack of diversity in the RN workforce is directly related to the lack of diversity in nursing education programs. The landmark document *Assessing Progress on the Institute of Medicine Report the Future of Nursing* (NASEM, 2016a) makes clear that the most effective way to increase the numbers of racial and ethnic minorities in the RN workforce is to increase the numbers of ethnic minority students who enter and graduate from nursing schools.

Education, one component of the SDOH, is the single most modifiable SDOH factor (McGill, 2016). However, many social and structural barriers impede diversity in nursing education, and therefore entry into the nursing profession. For example, stringent admission requirements, especially those that rely on traditional metrics, have created challenges for some ethnic minority students. Many may not meet the prerequisite grade point average or the required standardized test score needed for admission based on some aspect of disadvantage, whether educational, environmental, economic, or social (Murray, 2017).

One remedy for this is the *holistic admissions* process whereby applicants are evaluated based not only on academic achievement, but also on the institutional mission, the applicant's experience, personal attributes, potential contributions, and other diverse attributes (DeWitty, 2018; Urban Universities for Health, 2014).

For those admitted, the focus should be on retention through program completion. This means having the necessary supports in place for students to achieve academic success, such as pre-entry immersion experiences that prepare incoming students for the rigors of the nursing program (Murray, 2017). Retention strategies often include programs of academic enrichment such as study and test taking strategies, tutoring/remediation, academic guidance and mentoring, along with financial support to offset the need to work (Murray, 2017).

Strategies for Implementation and Integration of Social Determinants of Health

Faculty Development

Improving the focus on SDOH in nursing curricula would be best accomplished by having a diverse group of faculty who represent various racial/ethnic minority groups. Having all faculty appropriately trained in SDOH is critical so that they may, in turn, impart SDOH concepts and tools to their students (Thornton & Persaud, 2018). Providing a diverse faculty with the educational, technological, and community-based resources needed to develop evidence-based innovative educational models focused on the SDOH that can be easily translated from classroom to community will be essential if we are to have faculty that can serve as role models for undergraduate and graduate nursing students.

To prepare students to address the SDOH, faculty need to obtain specific competencies that they can in turn teach to students, such as leadership development, working effectively in teams, social justice, systems thinking, advocacy, and how to co-create sustainable academic and community partnerships (Tilden et al., 2018). Thus, there is a need for faculty to learn about innovative strategies that integrate SDOH concepts into curricula at all educational levels, as well as to develop model curricula that highlight best practices for the integration of this content into all curricular levels of nursing education. At the very least, nursing programs should develop and test competencies related to SDOH that students must achieve prior to graduation (NLN, 2019).

The Path Forward

The report *A Framework for Educating Health Professionals to Address the Social Determinants of Health* determined that three curricular elements are needed to address SDOH: 1) transformative learning that transcends the biomedical model of educating students, 2) dynamic partnerships that engage a variety of constituents and stakeholders, and 3) a commitment to learning throughout the life course (NASEM, 2016b). Additionally, professional development through lifelong learning opportunities are required for faculty, staff, and preceptors to support students in interprofessional, community-engaged learning opportunities (NASEM, 2016b).

In addition, providing a diverse faculty with the educational, technological, and community-based resources needed to develop evidence-based innovative educational models focused on SDOH that can be easily translated from classroom to community will be essential for faculty to serve as role models for undergraduate and graduate nursing students.

Improving Nursing Practice

By the nature of their practice, nurses spend more time with patients than nearly any other health professional, which can allow for a deeper assessment of a patient's life. However, healthcare providers are now seeing more patients in less time while hospitals and clinics strive to improve efficiency, so challenges within systems of care can leave few resources for identifying SDOH concerns (Litvak & Bisognano, 2011). As a result, healthcare providers often prioritize medical treatment within the confines of the healthcare system, missing the opportunity to improve health more substantially by considering interventions that address the larger social, political, economic, and physical environment. The lack of formal training in the SDOH impedes nurses from helping patients, their families, and communities to meet basic needs and benefit from effective care.

Being able to incorporate the SDOH into practice starts with clear expectations. Nurses need to have the knowledge, understanding, and tools to screen patients for SDOH factors, and engage in patient education at all levels of healthcare, such as an RN reviewing discharge instructions with a hospitalized patient, or an NP providing self-care education to a patient newly diagnosed with diabetes. If nurses are to help remedy the negative impacts of SDOH, they need training outside of the hospital and in the community.

Morone (2017) identified several barriers to screening for SDOH in practice. Some clinicians believe that SDOH fall outside of medical care and could be better addressed by other professionals, such as trained social workers who may be better suited to address a patient's concerns. There is also the perception by some clinicians that the SDOHs cannot be changed, thus making their assessment irrelevant.

Even clinicians who understand the importance of the SDOH may not screen for them because they lack adequate training or may not have sufficient knowledge of resources where they could refer patients (Morone, 2017). Still others may feel uncomfortable asking their patients about sensitive topics such as income level or exposure to domestic violence. Some clinicians might also believe there is not enough time in a short visit to address both clinical and SDOH concerns.

A solid grasp of SDOH can be critical in the area of clinical practice. Without assessing for SDOH issues, clinicians may develop care plans that are clinically appropriate but not practical or feasible for individuals to follow, despite the patient's willingness to follow a care regimen (Morone, 2017). For instance, a treatment plan may not be fully effective if a patient has difficulty paying for medications or travelling to healthcare appointments.

Training also plays a role in incorporating SDOH into practice. The lack or inadequacy of formal experiential training in this area may hinder healthcare providers from helping individuals, and their families and communities, to meet basic needs and benefit from effective care (Litvak & Bisognano, 2011). Greater emphasis on effective immersion experiences is therefore needed to provide students with opportunities to gain insight into the health needs of communities and to challenge their own attitudes, assumptions, and thought processes.

Also important is that nurses have interprofessional, team-based collaborative practice experiences within communities. The Institute of Medicine (IOM) [Note: Now the National Academy of Medicine (NAM)] describes interdisciplinary collaboration as multiple disciplines working together for the good of the patient utilizing cooperation, communication, and care integration. The IOM has charged nurses to practice as full partners along with other health professionals in the context of collaboration and mutual respect (IOM, 2011).). For example, understanding how the roles of the physician, social worker, and other health professionals complement the knowledge and training of nurses can further the delivery of safe and effective care at the lowest possible cost.

Nursing Practice and Social Determinants of Health

In its report, *Registered Nurses: Partners in Transforming Primary Care*, the Josiah Macy Jr. Foundation examined how nurses can transform the practice environment, recommending that "nursing, primary care, and health services researchers … should develop the business case for enhanced registered nurse roles in primary care, with an emphasis on their impact on quality; costs; patient, family, and team member and staff satisfaction; and their contributions to addressing social determinants of health in primary care settings" (Bodenheimer & Mason, 2017, p. 35). NAM is currently carrying out a consensus study titled *The Future of Nursing 2020-2030,* commissioned by RWJF, to determine how nurses can be catalysts for change to achieve healthier communities (Hassmiller, 2019; NAM, 2019). The study's results are expected to be released by the end of 2020 and will examine how nurses can improve health by addressing

SDOH to provide "effective, efficient, equitable, and accessible care for all across the care continuum" (NAM, 2019).

Nurses and all healthcare providers need to understand and effectively apply insight about the SDOH to improve patient outcomes. For example, knowing that a patient lives alone and in an area that lacks adequate healthcare resources, and has no access to reliable transportation, may require preparation for patient discharge to include referrals to community services that can support that patient to reduce the risk for post-discharge readmission. Nurses can help lower health inequities by examining how the SDOH impact their patients' lives (Andermann, 2016).

Examples of Incorporating Social Determinants of Health into Practice

Screening for Food and Housing Insecurity

Poverty can restrict the ability of families to meet basic needs such as food and housing, which in turn may impact the physical, cognitive, and behavioral development in children. A study examined the feasibility of screening patients for food and housing insecurity at a rural health clinic that primarily serves white, English-speaking, and low socioeconomic status families. Led by a pediatric NP working with an interprofessional team that included an RN, a medical assistant, and two pediatricians, the project used a five-question screening tool derived from the U.S. Department of Agriculture Household Food Security Survey, along with a definition of housing insecurity from the U.S. Department of Housing and Urban Development, during well-child appointments. Of 53 patients and families in the study, 17 percent screened positive for food insecurity and nearly 19 percent for housing insecurity. The families that screened positive were provided with a resource guide. This project demonstrates the feasibility of incorporating a simplified SDOH screening tool and referral resources into clinical appointments (Higginbotham, Crutcher, & Karp, 2019).

The Community Aging in Place – Advancing Better Living for Elders

The *Community Aging in Place – Advancing Better Living for Elders (CAPABLE)* project, initially funded by the Innovation Center at the Centers for Medicare and Medicaid Services (CMS), used a team-based intervention to help low-income older adults with functional challenges (Smith et al., 2016). Studies have found that older adults who have difficulties with daily activities such as eating, bathing, and grooming use a higher percentage of healthcare resources (Szanton, Wolff, Leff, et al, 2015). Over a course of ten in-home visits over a period of four months, nurses worked with the elderly participants to improve functional ability and self-efficacy and help manage problems with pain, strength, balance, depression, and medication management; an occupational therapist identified and prioritized functional areas that might be problematic; and a handymen carried out common repairs such as installing railings and grab bars, safety treads in tubs/showers, and raised toilet seats, and repairing broken flooring. Results showed that *CAPABLE* tripled the number of individuals who reported not having difficulties in walking and decreased by half the functional limitations experience. In addition, *CAPABLE* costs were $2,825 per participant and resulted in more than $10,000 in Medicare savings for each participant per year (Szanton et al., 2015).

Protocol for Responding to and Assessing Patient Assets, Risks, and Experiences

The Protocol for Responding to and Assessing Patient Assets, Risks, and Experiences program was a pilot study to help community health centers document SDOH-related risks, better integrate social service interventions, and identify gaps in community resources (LaForge et al., 2018). The study's first step was to review 50 existing SDOH screening tools, national SDOH initiatives, IOM recommendations, and other relevant information. The tools developed were pilot tested in seven community health centers. In 2016, a toolkit was released for implementation that included four Electronic Health Record (EHR) SDOH tools, technical resources, best practices, and other resources. Following this pilot, a more robust version of the EHR tools began to be developed for use in 30 community health clinics (Gold et al., 2019). This project is an ongoing effort.

Health Information Technologies and Social Determinants of Health

Limited access to healthcare facilities and an unequal distribution of healthcare professionals in certain areas is an important factor in the SDOH that can exacerbate health inequities. However, the rapid development, adoption, and sophistication of communication technologies can help position nurses to broaden healthcare access through the use of telehealth services (Fathi, Modin, & Scott, 2017). Telehealth is defined by HRSA as "the use of electronic information and telecommunication technologies to support long-distance clinical health care, patient and professional health-related education, public health, and health administration" (HRSA, 2019b). Telehealth technologies include teleconferencing, streaming media, land-based and wireless communications, and other forms of monitoring and communication over the internet.

Telehealth provides the opportunity to deliver care to underserved populations, ranging from sparsely-populated rural areas to dense inner-city communities. Telehealth services take place in many ways, depending on the patient's location, access to broadband or internet connections, the intended delivery of services, and the available means for the patient and the healthcare provider(s) to interact. The modalities and uses of telehealth in the United States will continue to adapt with the changing healthcare needs of the country, and nurses will need education and ongoing training to remain current in their practice (Fathi, Modin, & Scott, 2017).

Uses of Health Information Technologies

Health information technologies, including modalities such as EHRs and integrated databases, have the potential to facilitate healthcare providers knowledge about SDOH and enable potential strategies to mediate their impact. EHRs are digital versions of a patient's chart that can contain their medical history, diagnosis, medications, treatment plans, laboratory test results, and other information. EHRs need to incorporate SDOH items as a core component of the assessment of the individual patient and as a major component of discharge plans.

In one study, information captured in EHRs was combined with other medical and non-medical information to better address and mitigate the effects of SDOH on individuals and populations. (LaForge et al., 2018). Several organizations, including the Institute of Medicine (IOM), the National Coordinator on Health Information Technology, and CMS, recommend that SDOH assessment and screening be incorporated into EHRs.

Over 75 million Americans live in locations defined as Health Professional Shortage Areas, which have shortages of primary care providers (HRSA, 2019). Telehealth can be of help in these areas where access to certain specialists, such as oncologists, can be limited (HHS, 2016). Telehealth also holds promise for chronic disease management. Almost half of all U.S. adults have at least one chronic illness, which accounts for 75 percent of all healthcare expenditures and 70 percent of all deaths (HHS, 2016). Telehealth is therefore well poised to address SDOH by improving access, decreasing the need for transportation to providers, and reducing costs.

Technology is also changing the way the healthcare system delivers. For example, the Mercy Health System – which employs 45,000 individuals and serves millions of patients each year – has launched a "virtual" hospital which has nurses and doctors but no beds (Allen, 2017; Mercy, n.d.). At Mercy Virtual, nurses monitor patients remotely and can see the patient, vital signs, and medical history. This virtual technology can help keep chronically ill patients at home as long as possible and avoid expensive hospitalizations that may expose them to infections (Allen, 2017).

Intermountain Healthcare has also launched a virtual hospital, which combines 35 telehealth programs and 500 caregivers to provide patients care wherever they are (Intermountain Healthcare, 2018). Their services also provide specialized services to rural communities. Both of these hospitals can address SDOH by decreasing the need for transportation to see a provider and, for those living in rural areas, increasing access to specialists.

Telehealth can be used to expand the impact and value of nursing (HRSA, 2019; Rambur, Palumbo, & Nurkanovic, 2019). A review of telehealth used for patients with heart failure, stroke, and chronic obstructive pulmonary disease found reductions in hospital admissions/readmissions, length of stay, and emergency department visits (Dinesen et al., 2016). Telehealth can help rural patients to access specialty care without having to travel long distances (RHIhub, 2019). For example, a telehealth program in at a rural Veterans Affairs hospital resulted in a reduction of more than 820,000 travel miles by patients over a period of nine years, thus decreasing the burden on patients to arrange transportation (Waseh & Dicker, 2019).

Faculty Training to Incorporate Telehealth in the Classroom

Most individuals applying for nursing programs today are part of a generation of *digital natives* (Van Houwelingen, Ettema, Kort, & Cate, 2017). Born between 1992 and 2000, and known as *Generation Z*, this group does not know a world without the Internet. They have been immersed in a world of technology by using smartphones, tablets, and social media platforms both privately and at school and thus may feel that the use of healthcare technology is normal (Van Houwelingen et al., 2017). In spite of its positive impact, teaching the newest generation of students the use of telehealth may be a challenge for some faculty. Therefore, training faculty to educate these students is a necessary part of the process.

An example of faculty training can be seen at the University of Wisconsin System. Five nursing schools within the system have developed a model to educate nursing faculty on how to infuse telehealth content into the curriculum (Gallagher-Lepak, Scheibel, & Gibson, 2009). Each of the nursing schools developed a faculty training topic related to informatics during a five-year grant. Participating faculty were informed about new trends in informatics, given articles related to

telehealth, and participated in brown-bag conferences. A faculty web site provided content, discussion threads, articles, and meeting minutes. Conferences were held on specific topics including how nursing informatics supports telehealth, telehealth in nursing practice, secondary use of data, privacy, commercial and experimental telehealth applications, and ethical, legal, and social concerns. A *telehealth room* was developed by faculty to demonstrate telehealth monitoring. The study found an increase in informatics skills in students, emphasizing the need for nursing faculty to "be on the cutting edge of this technology in order to educate the next generation of nurses" (Gallagher-Lepak, Scheibel, & Gibson, 2009).

Nursing Research on SDOH

The science that informs nurses, nursing practice, and care teams is developed through *nursing research*, which can be defined as the process of evaluating the influence of "behavioral, environmental, and social factors in the manifestation of symptoms and their resolution" (Grady, 2017). Nursing research provides a valuable perspective on the delivery of and changes in healthcare. Clinical symptoms seen in practice are often a manifestation of a complex web of social, economic, and environmental conditions and experiences, the SDOH, which extend far beyond nursing or medical care (RWJF, 2019). A large and growing body of evidence demonstrates how these non-clinical determinants can influence health and health equity for individuals, families, and communities (RWJF, 2019; Tebb, Pica, Twietmeyer, Diaz, and Brindis, 2018).

Nurse educators should work with accrediting bodies such as the Commission on Collegiate Nursing Education and the Accreditation Commission for Education in Nursing to identify the necessary competencies needed to foster a new generation of scholars and practitioners who are prepared to utilize innovative methodological research strategies. This new research promises to inform policy through economic impact studies that will help eradicate the ill effects of SDOH on health outcomes, thereby giving more individuals the opportunity to live a healthy and prosperous life regardless of race, socioeconomic status, or geographic location (Shi & Zhong, 2014).

Community-Based Participatory Research and SDOH

Community-based participatory research (CBPR) is one approach to investigating measures related to SDOH, health disparities, health equity, and health outcomes. CBPR aims to decrease health disparities by recognizing the social and ecological paradigms of healthcare and by creating partnerships between community members and academic researchers in all phases of the research process. Community partners are uniquely poised to offer insight into the local culture, circumstances that guide health behaviors, and other challenges to improve their own health.

Sustainable interventions, either through strengthening existing community assets or through community empowerment and local capacity building during the research process, are essential to the success of CBPR (Harris, Pensa, Redlich, Pisani, & Rosenthal, 2016). Providing opportunities that allow nurses in PhD/Doctor of Nursing Practice (DNP) programs to actively participate in faculty-led CBPR efforts addressing SDOH using an interprofessional, cross-sectoral approach would mimic the transformative learning needed in nursing education. This

would strategically and effectively equip future nurse scientists with the competencies needed to empower communities to actively participate in positively changing the environment in which they live.

Some programs have been implemented with the intent of impacting health systems, as well as the chronic disease profiles of communities and their members, while other programs show how the application of principles of CBPR that align with cultural values can impact health inequities through social change (NASEM, 2016b).

Research Gaps

Nursing is shaped by an ever-growing body of evidence as well as a constantly changing healthcare system. Practice is also shaped by new educational models, emerging policies, novel technologies, and changes in reimbursement. This section presents a series of important research gaps to be addressed.

Research Gap: Nursing Education Models that Incorporate SDOH

Currently, there is a scant amount of literature identifying best practices in incorporating SDOH frameworks into nursing education and practice. The importance of education research is emphasized by both experts in the field and leading organizations. For example, the IOM's report *The Future of Nursing: Leading Change, Advancing Health*, lists one of the research priorities as the "identification and testing of new and existing models of education to support nurses' engagement in team-based, patient-centered care to diverse populations, across the lifespan, in a range of settings" (IOM, 2011, p. 276).

Similarly, the *Position Statement on Nursing Research* by the American Association of Colleges of Nursing (AACN) states that rigorous research strategies in the teaching-learning process and educational outcomes are needed in nursing education (AACN, 2006). The AACN also states that "the continuous supply of well-educated nurses is critical to maintain and enhance our nation's health, especially in light of the changes in the demographics of the population" (AACN, 2006, p. 5).

In spite of these calls to action, we are still lacking a robust evidence base on optimal educational approaches to incorporate the SDOH into nursing education. Various curricula have been implemented nationwide with varying results, but no systematic approach to evaluating them has been established. There is also a lack of standardized nursing competencies focusing on SDOH, which make streamlined education goals more challenging to achieve. Demonstration projects to establish a standard set of SDOH competencies, as well as comparisons of different education models and approaches, need to be explored before we can determine a path forward to effectively incorporate SDOH concepts throughout nursing education.

Research Gap: Nursing Best Practices Incorporating the SDOH

Despite substantial evidence showing the impact of SDOH on health outcomes, there is limited evidence supporting nursing best practices that incorporate SDOH. Consequently, further research on identifying and/or developing effective nursing practices for eliminating gaps and disparities in healthcare are needed. This remains as one of the *Future of Nursing 2020-2030*

priorities (NAM, 2019). For instance, preliminary research on telehealth (Kvedar, Coye, & Everett, 2014) and other models of care such as mobile traveling health teams (Walker, Martinez-Gomez, & Gonzalez, 2018) have shown encouraging results, but much remains to be understood regarding the impact of each of these strategies.

Additionally, the lack of a standardized, validated SDOH screening tool presents a challenge in conducting a rigorous evaluation on the effectiveness of screening to improve health outcomes, as well as on the benefits/costs of screening across healthcare settings. It is also unclear which screening tools and processes should be applied to which patient populations – and by whom (Abir, Hammond, Iovan, & Lantz, 2019).

Research Gap: Building a Body of Evidence Supporting Nursing Education and Best Practices that Incorporate Social Determinants of Health

Optimal use of evidence-based strategies can be determined only following an extensive and robust evaluation of SDOH tools and nursing practices in diverse nursing settings. Additional nursing research applying rigorous methods and innovative approaches is needed to develop effective, evidence-based initiatives that will result in the integration of SDOH throughout the nursing curriculum at every level of nursing education. Research is also needed to establish measures and metrics for assessing SDOH along with measures to determine the impact of community-based initiatives.

Research Gap: Demonstration Projects that Provide Evidence of Optimal Return on Investment are Needed

Programs such as the Advanced Nursing Education Nurse Practitioner Residency Program, a HRSA-sponsored initiative, present opportunities to integrate SDOH concepts in nursing education, and to evaluate the impact of such integration on various health outcomes. The program prepares new NPs in primary care for practice in community-based settings through clinical- and academic-focused 12-month nurse practitioner residency (NPR) programs. NPR projects focusing on rural or underserved populations provide ideal settings for evidence-based initiatives that allow NPs the opportunity to improve their SDOH assessment skills using evidence-based screening tools and technology to collect data on SDOH.

Data from these and other newly created federal and state initiatives could help to prioritize the use of community resources such as food assistance, housing, education, jobs, and access to healthcare. Development, implementation, and evaluation projects centered around community engagement, patient advocacy, and policy development resulting in improved health outcomes for those living in rural and underserved communities could lead to tremendous cost savings and a shift of much needed dollars to address other non-health social and structural determinants of health (HRSA, 2018).

Nursing Research on the SDOH: Moving Forward

A robust research agenda is needed that incorporates institutional and community involvement, adequate funding for federal and local initiatives, considerations of health in community planning and development, and collection of real-world evidence that can target interventions toward those who need them the most. Research is needed in collaborative models that

encourage a team-based approach to treating patients at the highest risk for ill effects related to the SDOH (Daniel, Bornstein, & Kane, 2018). A research agenda should include short and long-term analysis of how the SDOH affect health outcomes, as well as increased efforts to recruit disadvantaged and underserved populations into large-scale research studies and community-based participatory studies (Daniel, Bornstein, & Kane, 2018).

Investments are needed for innovative methodologies and evidenced-based interventions that incorporate interprofessional teams, use technologies that enhance healthcare outcomes, and apply best practices for care coordination. Also needed are investments to further evaluate models that have shown promise in improving healthcare outcomes when incorporating SDOH in the patient's plan of care across all levels of the nursing profession, in both nursing education and practice (Daniel, Bornstein, & Kane, 2018; Eubanks, 2018).

Conclusion

As presented throughout this report, evidence-based models are needed to establish methodologies for analyzing cause-and-effect relationships between educational interventions, practice interventions, and patient outcomes related to the SDOH (NASEM, 2016b). In order to accomplish this goal, agencies like the National Institute of Nursing Research, the National Center for Advancing Translational Science, the Office of Minority Health, and other relevant federal agencies must expand investment in SDOH science.

Investment in SDOH science includes infrastructure and training for both faculty and nursing students, as well as practicing nurses; opportunities for interprofessional and cross-sector education; assessment of SDOH; evaluating the impact of strategies used to address SDOH; and targeted funding support for research studies on SDOH initiatives that will establish best practices relative to the competencies needed to address SDOH.

This goal is in alignment with findings of the 14th NACNEP *Report on Preparing Nurses for New Roles in Population Health Management* (HRSA, 2016). Population health may be seen as the health outcomes of a population (e.g., morbidity, mortality, quality of life) that are closely related to healthcare disparities that exist across certain populations, and SDOH may be identified as social and environmental factors such as access to healthcare, quality education, and adequate housing that have a direct impact on population health.

The implementation of transformative and innovative models of education and practice using reliable and valid assessment tools to gather data related to SDOH will help to determine if the desired impact of improving the health and well-being of individuals, communities, and populations has been met.

NACNEP Recommendations

In developing the 16th report to the Secretary of HHS and Congress, NACNEP sought guidance from resources and experts in the field of social determinants of health with a focus on education, practice, and research. NACNEP also consulted with professionals currently working within the nursing community.

Based on the findings presented, the 16th NACNEP report and recommendations emphasize changes in nursing education, faculty development, nursing practice, and research. The recommendations underscore the potential benefits to the nation of targeting Title VIII funding to support the essential development of the nursing profession and align nursing education, practice, and research with social determinants of health.

Recommendations

Recommendation 1: The Secretary and Congress should fund/support academic-community organization partnerships to establish clinical placements and service learning opportunities for nursing students that provide a range of practice experiences with an emphasis on addressing the social determinants of health with nurse-led interprofessional teams. These experiences should include: care coordination, telehealth (or utilizing the underpinnings of telehealth), and health promotion/health opportunities for individuals, families, and the community.

Recommendation 2: The Secretary and Congress should fund demonstration projects related to residency programs for advanced practice registered nurses that emphasize strategies to address the social determinants of health among vulnerable populations in rural and underserved communities.

Recommendation 3: The Secretary and Congress should provide funding for research/demonstration projects that implement innovative strategies for the integration of the social determinants of health in curricula for nursing students that include faculty development, effective care delivery models, and identification of best practices.

Recommendation 4: The Secretary and Congress should expand investment in the social determinants of health science through the National Institute of Nursing Research, the National Center for Advancing Translational Science, and other relevant federal research agencies, including infrastructure and training, support research studies on best practices relative to the right competencies, assessment, and evaluation of strategies to address the social determinants of health.

List of Abbreviations

AACN	Association American of Colleges of Nursing
APRN	Advanced Practice Registered Nurse
CAPABLE	The Community Aging in Place – Advancing Better Living for Elders
CBPR	Community-Based Participatory Research
CKD	Chronic kidney disease
CMS	Centers for Medicare and Medicaid Services
DNP	Doctor of Nursing Practice
EHR	Electronic Health Record
GOOD	Growing Our Own in the Delta
HHS	Department of Health and Human Services
HRSA	Health Resources and Services Administration
IOM	Institute of Medicine (now the National Academy of Medicine (NAM))
NACNEP	National Advisory Council on Nurse Education and Practice
NASEM	National Academies of Sciences, Engineering, and Medicine
NeighborhoodHELP	Neighborhood Health Education Learning Program
NLN	National League for Nursing
NP	Nurse Practitioner
NPR	Nurse Practitioner Residency
RHIhub	Rural Health Information Hub
RN	Registered Nurse
RWJF	Robert Wood Johnson Foundation
SDOH	Social Determinants of Health
WHO	World Health Organization

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