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US nursing and midwifery research capacity building opportunities to achieve the United Nations sustainable development goals

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ABSTRACT

To meet the United Nations Sustainable Development Goals (SDGs) in the United States, research by nurses and midwives has a real opportunity to make a significant impact. This paper identifies opportunities to strengthen research capacity in the United States amongst nurses and midwives in ways that will help meet the SDGs and ensure its sustainability. Research capacity means that in a country, there are individuals and teams capable of defining problems, setting priorities, establishing objectives for the goals of the research study, and following rigorous scientific procedures. By strengthening U.S. research capacity by addressing critical weaknesses in content expertise, nursing and midwifery's voices in policy dialogues, and global research initiatives will be have greater assurance of being included.

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From the 20th century studies and theoretical work about professions, one of the hallmarks of a profession is that it has its own body of knowledge (Abbott, 2005; Bourgeault, Benoit, & Hirschkorn, 2009; Dussault, 2008; Faulconbridge & Muzio, 2011; Siebert, Bushfield, Martin, & Howieson, 2017; Timmermans, 2008). Said knowledge is captured through research processes, beginning with descriptive studies until enough knowledge exists to generate a systematic review that reflects the state of the science in the field. Evidence-based practice (EBP)—something that should reflect the most recent knowledge generated by the most rigorous studies in the field—then becomes part of the professions' identity, especially in health care fields (Aarons et al., 2014; Aarons, Sommerfeld, & Walrath-Greene, 2009; De Pedro-Gómez et al., 2012; Ehrhart, Aarons, & Farahnak, 2014). For better or worse, through research and its translation into practice we see its results reflected in patient and health system outcomes.

As professions, the growth of research in both nursing and midwifery[1] during the last fifty years is a testament to the fortitude of past and present leaders in their fields. The international collaborations and mentoring by U.S. universities have contributed to research capacity building for nurses and midwives in many

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[1] In the US, there are nurse-midwives and midwives. While midwifery is aligned with nursing politically due to the sheer difference in membership numbers between nurses and midwives, the American College of Nurse Midwives—the professional organization representing all those with midwifery training—stresses the separate professional identity of midwives from nurses because of the specialized services provided by midwives. In an effort to respect the unique professional identity of midwives, they are referred to separately in the paper.

countries around the world, with many more opportunities arising in the 21st century. Both nursing and midwifery, however, are also being called out for where research has failed to address systemic problems in health care that affect quality. The Lancet Global Health Commission on High Quality Health Systems in the Sustainable Development Goals (SDG) Era conducted one of the largest and most comprehensive studies of the quality of care across the globe, drawing evidence from both primary data and systematic reviews. The findings, to be frank, were damning to health care providers everywhere; so much so that the Director of the World Health Organization, Dr. Tedros Adhanom Ghebreyesus, commented: "The very fact that in 2018 *The Lancet Global Health* has commissioned a report on the state of quality care globally is an indictment on all of us forever tolerating anything less than care that is effective, safe, and people-centered" (Ghebreyesus, 2018). Aside from concluding that care is inadequate across all countries and even dangerous for those in low income countries, they also found that high quality health systems had the potential to save eight million lives a year (Kruk et al., 2018b). It would, however, also require transparent reporting about the patient experience and system-wide action (Kruk et al., 2018a).

New research that emphasizes studying how to transform health systems from low to high performing ones to help meet the SDGs was a core recommendation (Kruk et al., 2018a). The team noted how for many noncommunicable diseases, mental health issues, adolescents, and the elderly, there was almost no research shedding light on what constitutes quality of care. Quality measurement was viewed as essential, but generally not done—largely due to a lack of capacity for conducting health services research. Many readers may think, "But we do quality measurement in the United States!" The question is: Do we do it well and measure the right things in ways that optimize outcomes and improve population health? The commission further emphasized that opportunities abound for patient outcomes research, evaluating the effects and costs of improvements on health and patient experience, as well as the consequences the aforementioned to a patient's financial well-being (Kruk et al., 2018a). Research using implementation science approaches and the strengthening of health information systems were viewed as the next turn toward health systems that can contribute to meeting the SDGs, not contributing to their failure.

The *Lancet* special issue was more recently followed by a special issue in January of 2019 of the *American Journal of Public Health* which focused on health disparities and minority health. The conclusion of the team of National Institutes for Health authors was similar, citing a lack of understanding of what constitutes "quality care" for those who experience disparities. They also concluded that behavioral interventions do not reduce health disparities and called for more health services focused research. The team further cautioned that precision health may exacerbate disparities because of problems associated with access to the necessary testing in populations which experience disparities. Quite simply, the United States cannot achieve the SDGs without addressing its own growing health disparities and issues with minority health.

Both special issues demonstrate that there is a consensus that research is critical for achieving the SDGs. It is an important step forward toward meeting these global goals in the United States. Without question, nursing and midwifery researchers in the United States have made many contributions to date that have influenced patients' lives, changed outcomes for the better, and improved health system operations. Through continued investment in developing scientists and research translation experts, nursing and midwifery as complementary professions are poised to continue to do so for the foreseeable future.

For nursing and midwiferyresearch to continue to contribute to meeting the SDGs in the United States, however, there are several opportunities for strengthening and broadening the scope of nursing and midwifery research. Operating under the assumption that partnerships (SDG 17) are essential to research, this paper will first review the concept of research capacity building from the international literature. It will then propose areas where nursing and midwifery can strengthen research capacity to meet the SDGs in the United States.

Research Capacity Building—An Infrastructure Development Goal (SDG 9)

Research capacity is one dimension of SDG 8 "Decent Work and Economic Growth" and a core component of SDG 9. In the United States, research contributes $69 billion annually to the economy and includes just over 400K jobs (Research America, 2016). Research capacity means that in a country like the United States, there are individuals and teams capable of defining problems, setting priorities, establishing objectives for the goals of the research study, and following rigorous scientific procedures ("Strengthening research capacity - The Guidelines project," 2019). At the institutional and national level, these activities occur through well-supported institutions capable of identifying solutions to address national problems (Cooke, 2005; Golenko, Pager, & Holden, 2012). The process by which these individuals, institutions, and countries develop the knowledge, skills, and abilities to perform research in a way that is effective, efficient, and sustainable shapes research capacity building or strengthening. Middle class and higher salaries, technological resources such as computers and analytics software, mentoring, funding for research, and support for research dissemination and networking are key elements of sustaining research capacity as identified by researchers from around the globe (Bates et al., 2011; Bennett, Corluka, Doherty, & Tangcharoensathien, 2012; Bennett, Frenk,

& Mills, 2018; Chanda-Kapata, Campbell, & Zarowsky, 2012; Cohen et al., 2015; Cole et al., 2015; Delisle, Roberts, Munro, Jones, & Gyorkos, 2005; Gagliardi et al., 2009; Godoy-Ruiz, Cole, Lenters, & McKenzie, 2015; Gonzalez-Block, 2004; Hanney & González-Block, 2013; Koehlmoos, Walker, & Gazi, 2010; Kurth, Squires, Shedlin, & Kiarie, 2015; Maclean & Forss, 2010; Brzostek et al., 2015; Ranson & Bennett, 2009; Yousefi-Nooraie, Akbari-Kamrani, Hanneman, & Etemadi, 2008). Lack of these resources, be they human or technological, limits research capacity building and thus, the conduct of research in any country.

The other dimension of research capacity specific to health care practitioners and policy makers is evidence-based practice or policies. As all entry level nursing and midwifery students are (or should be) taught these days, EBP comes from research and not "tradition." EBP requires an individual to be able to first pose a question, then access research, discern if the study is relevant to answer the question, and then critique the study to assess its rigor and quality (Barnett, Vasileiou, Djemil, Brooks, & Young, 2011; Frenk et al., 2010; Interprofessional Education Collaborative, 2011; Oxman, Schünemann, & Fretheim, 2006; Wahabi & Al-Ansary, 2011). For example, if a nurse practicing in rural America does not have access to a medical library or can only obtain open access publication, her practice is limited due to a lack of research capacity in rural areas of the United States—as reflected by a lack of access to the evidence.

Cook (2005) offers a framework for evaluating research capacity within the policy context of the country where researchers conduct their work. National policies influence research funding, thus why Cook situates the framework so it can reflect the domestic context of research. Appearing rooted in a social ecological model, Figure 1 offers six areas for consideration when evaluating research capacity in a country. High income countries like the United States would do well in an evaluation using Cook's (2005) criteria and even U.S. nursing would fare well in an assessment of research capacity.

U.S. midwifery, however, would not. Few midwives pursue PhDs and postdoctoral fellowships that provide relevant training or match appropriately are few. Consequently, midwives often do not meet the criteria for Research I universities and their tenure track faculty appointment criteria. That means they are not hired into research focused positions. Furthermore, since midwives work largely with the poorest women in the United States, their ideas for improving quality of care and findings ways to increase access receive little attention in the literature because of the research capacity gap. With the current maternal mortality crisis in the United States, the lack of research capacity within midwifery threatens the USs ability to address SDGs 1 through 5 and 10.[2] Research partnerships with health services researchers, women's health experts, social workers, physicians, and public health experts would facilitate the translation of these ideas via research to positively impact the lives of women, children, and families nationally. However, the lack of research capacity in midwifery means there is a dearth of research from this professional cadre. With decreasing enrollments in nursing PhD programs around the country according to the American Association of Colleges of Nursing (https://www.aacnnursing.org/News-Information/Research-Data-Center/PhD), nursing's research capacity is subsequently threatened too. Threats to research capacity within nursing and midwifery mean that the United States, as a country, is less likely to meet the SDGs.

Opportunities in U.S. Nursing and Midwifery Research to Meet the SDGs

In this section, three opportunities are posed for U.S. nursing and midwifery research to help the United States meet the SDGs. These opportunities arise from both the domestic context of U.S. health care, NIH recommendation, and the revolutionary call by the *Lancet Commission*. The proposed opportunities stress sustainability as a concept that needs better integration into research.

Opportunity #1: Interventions and Analyses That Fully Account for Social Risk Factors

Most studies will risk adjust for race and ethnicity, possibly gender. Sometimes geography is accounted for, but more often than not, a comprehensive view of social risk factors fails to be included in research studies. The National Academy of Sciences, Engineering, and Medicine (NASEM) has five domains for social risk factors: Socioeconomic position; race, ethnicity, and cultural context; gender; social relationships; and residential and community contexts (National Academies of Sciences Engineering and Medicine, 2017). Figure 2 illustrates how the NASEM conceptualized these factors in relation to individual and health system factors with a translation into performance-based indicators.

If we consider the scope of intervention design and testing research and how many of them fail, improved accounting for social risk factors in the design of interventions might improve their translatability and sustainability in the real world. Millions are spent on research that tests interventions in the United States, but few are replicable or sustainable outside of where they were tested. A good example is conducting interventions in faith-based institutions such as mosques, synagogues, or churches. While these sites may prove excellent for recruitment, most religious institutions in the United States cannot afford to sustain the intervention after the study finishes. Intervention researchers often fail to see the bigger picture of how their

[2] Please refer to the introductory article in this special series for a complete list of the SDGs and their descriptors.

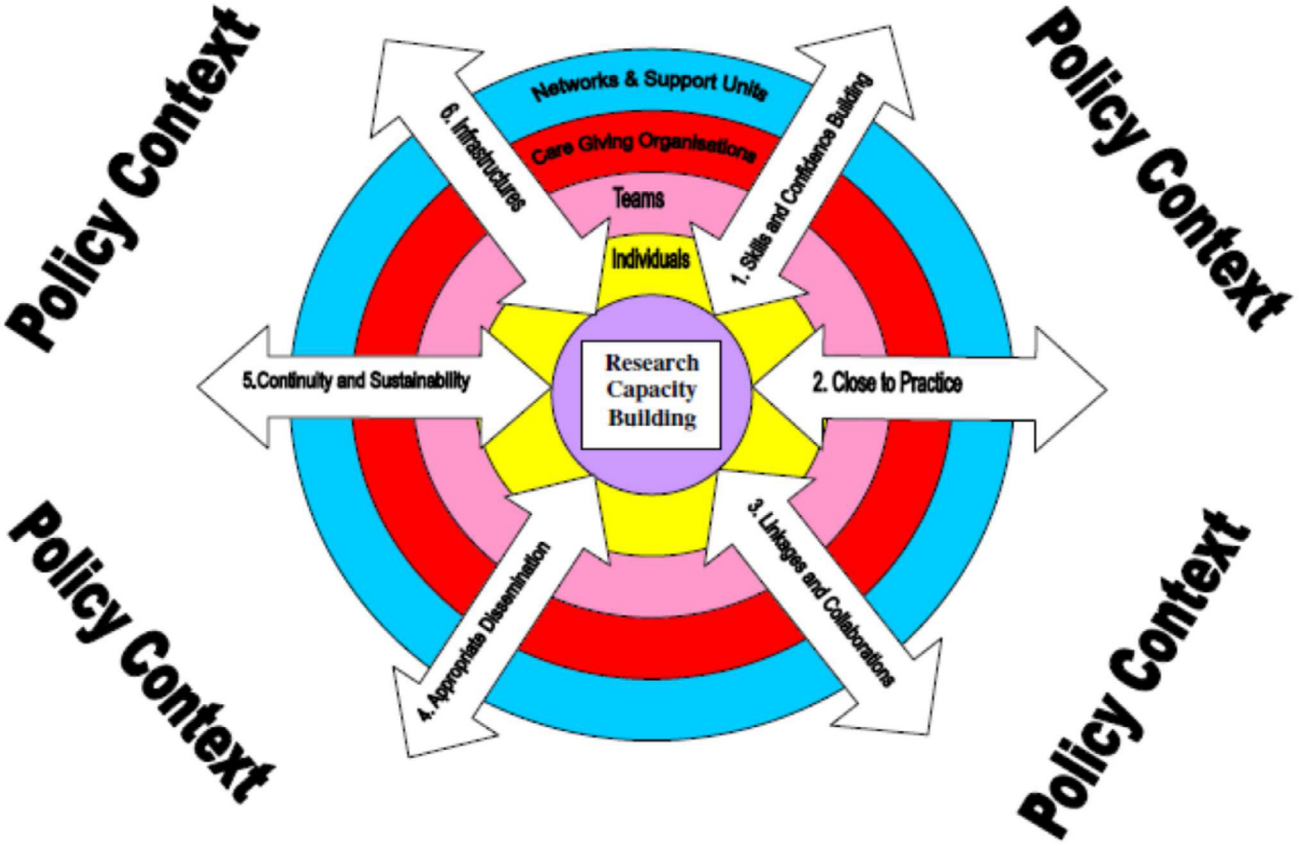

Figure 1 – An evaluation framework for research capacity building (Cooke, 2005).

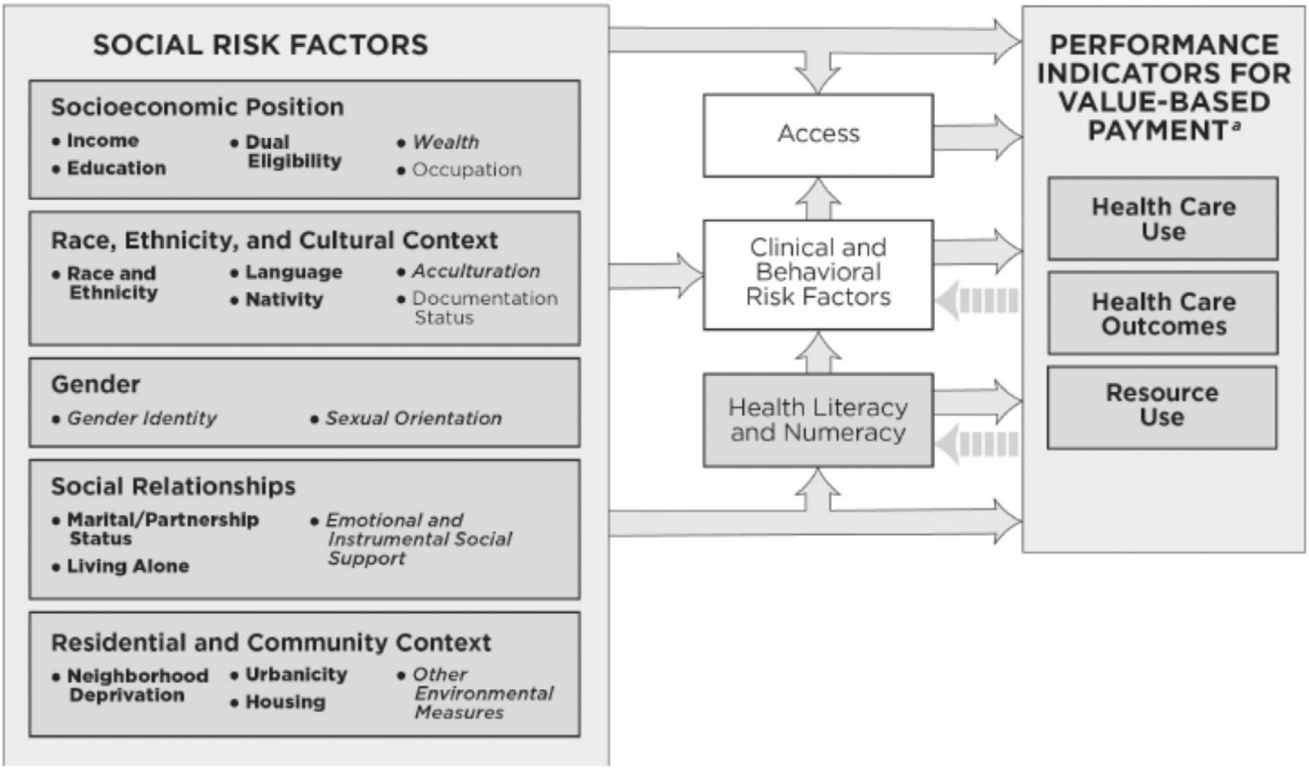

Figure 2 – The National Academy of Science and Medicine's conceptual model of social risk factors and the links to health care utilization (National Academies of Sciences Engineering and Medicine, 2017).

intervention, especially if it is an effective one, needs to become sustainable. In addition, continuously applying for grants to sustain intervention programs is not a viable solution. The same applies to addressing rural and urban health gaps via interventions.

The NASEM social risk factors conceptual model also requires accounting for the context of where the target population for the study lives (National Academies of Sciences Engineering and Medicine, 2017). With its ties to payment models incorporated, it could help intervention researchers develop better and more sustainable interventions capable of addressing the SDGs. We then have better chance of having evidence-based policies shaped by nursing and midwifery research to meet the SDGs rather than policies we need to respond to and (occasionally) disprove or change via research.

Opportunity #2: Increasing Health Services Research to Improve Implementation and Translation

In the early 1990s, U.S. nursing research moved away from studying nurses and to focus on patients, with midwives included in that action. This was a necessary step in our development as a profession, but it came at a cost. The price is reflected in the dearth of nurses or midwives with health services research expertise. Somewhat ironically however, the top ranking journal in our field across all indices—the *International Journal of Nursing Studies*—is a health services and policy oriented journal.

Too many U.S. nursing and midwifery researchers in our field have a limited view of health services research as "workforce" research. Perhaps this explains why not one nurse researcher was included in the *Lancet Global Healthcare Quality Report* mentioned earlier: It required health services research expertise. In addition, few Research I institutions will hire a nurse or midwifery researcher with expertise in that area because they do not see its value or understand available funding mechanisms. Tenure processes that are married to the idea of only NIH funding also means too few Research I institutions in the United States have nurses with health services research expertise. Undoubtedly, a lack of potential mentors will arise as another reason not to hire, but there is a national mentoring network for nurses who do health services research: The Interdisciplinary Research Group on Nursing Issues, the largest interest group housed by Academy Health—the national health services and policy research professional organization. This national network has all ranges of experience amongst its investigators and grows annually. Economists and others with related expertise are also members of the network.

Meeting the SDGs means it is time for U.S. nursing and midwifery to move beyond its thinking of health services research as workforce analyses. When implementation science first emerged, what many people do not realize is that it is health services research. Furthermore, studies using large datasets to study health outcomes, known as "Big Data," are part of the toolkit. With new statistical methods that have evolved which can examine naturally occurring interventions in organizations and their effects on patient outcomes using Big Data, health services researchers are capable of conducting studies that can translate immediately into strategies that improve patient outcomes within the context of "real world" conditions. In effect, health services researchers have the skill sets to address the patient and systems needs of the "now" while intervention researchers take the time to test, replicate, and scale up interventions. Health services researchers can also collaborate with intervention researchers think about the mechanics of expanding, scaling up, and testing interventions in different contexts.

Cultivating the growth of nurses and midwives who conduct health services research is critical for ensuring that neither is left out of large projects like the *Lancet* quality report due to insufficient research capacity or similar projects that help meet the SDGs. After all, midwives organized internationally and produced an incredible *Lancet* research series on the global impact of midwives on patient outcomes (Renfrew et al., 2014). It was led by midwives with health services research experience—mostly from abroad. Perhaps if the United States had more midwives or obstetric nurses with health services research skills, we would have a better understanding of the system level issues driving the rise in maternal mortality in the country—a trend that threatens our ability to meet SDG #3.

Opportunity #3: Embracing Evaluation Studies and Policy Analyses as Research

It has been said that neither evaluation studies nor policy analyses are research. Evaluation studies as a field, however, has five peer reviewed journals at a minimum with excellent examples of studies grounded in rigorous research methods. In fact, the NIH identifies evaluation studies as a fundable area of research. Same with policy analyses.

Overall, in many places U.S. nursing academia does not value evaluation studies and policy analyses in the tenure and promotion process because the impression is they do not undergo "peer review" when the final report comes out. With multiple evaluation studies journals that have equal impact factors of many nursing journals, there is a peer review option available. For policy analyses, the peer review process is often more rigorous and detailed than most journals. No fewer than three reviewers and often up to 10 will review a policy analysis produced by a think tank or an international institution like the World Bank.

Both policy and evaluation studies are critical for achieving the SDGs. One strategy U.S. nursing and midwifery academia can adopt is to create a "policy track" for promotion and tenure where individuals with evaluation and policy analysis skills can shine and address a major gap in our profession. This track would involve obtaining funding for evaluation and policy analysis studies from a wider variety of sources, value

collaboration with other researchers, involve teaching at a level somewhere between a clinical track and traditional research tenure track faculty, and require the same service commitments. To be done well, it would require PhD level research methods training given the level of statistics knowledge required for strong policy and evaluation work. A select few Doctor of Nursing Practice program might be able to produce graduates with the requisite skill sets, but it is early in the evolution of the DNP degree to determine that possibility. It is a solution that will help us meet the SDGs in our country, address the need for faculty with policy expertise, and ensure nurses have voices in new places during the 21st century.

Conclusions

Sustainable research capacity within nursing and midwifery in the United States is critical for achieving the SDGs with our interprofessional partners. As more evidence is generated through research, evidence-based policies that can meet with SDGs will occur instead of policies created without evidence. The future of research conducted by nurses and midwives in the United States requires moving onward from how research occurred in the past and expanding upon its strong foundation in a way that helps meet the SDGs in the country.

The late 20th century in the United States was a period where research conducted by nurses and midwives grew significantly and helped establish the science of the fields and its interprofessional intersections. The 20th century of nursing and midwifery research should help address the problems of the present and the future so that every person has an equal opportunity to optimize their health and well-being. This paper offered three potential solutions to improve the sustainability of research capacity in amongst the two professions in the 20th, but undoubtedly there are more opportunities to improve sustainability. Research, as always, is critical to ensuring the voices of nurses and midwives are at the policy table.

Supplementary materials

Supplementary material associated with this article can be found in the online version at doi:10.1016/j.outlook.2019.06.016.

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