

Trends in US Nursing Research: Links to Global Healthcare Issues

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Nursing research in the United States (US) spans several decades. Many of the priorities/trends have stayed through the years. Today, the goal of producing evidence to support nursing care interventions coupled with the drive for Magnet Recognition has encouraged academic nurses (faculty) to work with nurse clinicians to form research teams. Interdisciplinary research teams have also formed to address growing concerns over patient safety and quality care. These issues are not just US issues but global ones. This article addresses US trends with the link to global research trends. The role that organizations such as the International Council of Nurses (ICN), the World Health Organization (WHO), and the Council of International Neonatal Nurses, Inc. (COINN) play in shaping research agendas and promoting nursing research is highlighted. It emphasizes the key role that nurses, especially nurse leaders/administrators play in changing health outcomes through support of nursing research.

Key Words: Nursing research, Interprofessional research, Global research, Academic nursing research, Magnet

INTRODUCTION

The United States' (US) support for nursing research dates back to 1952 when Nursing Research started. In the 1950's and 1960's doctoral programs in nursing started. One type program was focused on nursing education and administration while the other focused on clinical practice. The types of research ranged from educational programmatic research to clinical practice questions. In 1965 Drs. Faye G. Abdellah and Eugene Levine published "Better patient care through nursing research." [1] This report outlined the need for more nursing studies. By the 1970's and 1980's nursing recognized the need to advance the science of nursing through doctoral preparation and research. The points of tension arose from the two viewpoints-nursing research needed to advance science through theory development or through clinical practice. These two viewpoints found their roots in the widening chasm between academic researchers and those that wished to remain clinically based. Nursing education separated from clinical practice

as professional disciplinary expectations changed. It was not until the late 1990's and 2000's that academe and practice started really working together for educational and research purposes. Today interdisciplinary or interprofessional research is key to grant funding and many projects housed in academic institutions focus on translating science to clinical practice. This article will describe the current trends in nursing research in the United States (US), research's link to Magnet Recognition, how US and global research work together, the future directions for this work.

SUBJECT

1. Nursing Research – National Recognition

The Institute of Medicine (IOM) [2] issued a report entitled "Nursing and nursing education: Public policies and private actions" that called for nurses to take on the role of nurse researcher and to conduct clinically based studies. The American Nurses' Association Cabinet on Nursing

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Research [3] published "Directions for nursing research: Toward the twenty-first century." This report led the way to create a specialized center for nursing research. In 1985, the US Congress passed the bill Public Law 99-158 to establish the National Center for Nursing Research (NCNR) at the National Institutes of Health-the major federal funder for US research. Dr. Doris Merritt was the first acting Director. She held a medical degree. Dr. Ada Sue Hindshaw, a nurse researcher, became first permanent Director in 1987[4]. The center then was formally changed to the National Institute of Nursing Research (NINR). The challenge in the early days was that there was no clear definition of nursing research [4]. One of the first exemplars was a study by Dr. Dorothy Brooten and team [5] from the University of Pennsylvania that demonstrated cost effectiveness of a home visiting program for very low birth weight infants by advanced practice nurses. The purpose of this and other early exemplars was to demonstrate the role nurses play in providing research findings to inform practice. This research application provided measureable outcomes of the studies and placed nurses in the federal research arena. One obstacle was that NIH supported basic science research which was generally not the basis of nursing studies. Over the next decade studies moved from disease orientation and treatment interventions to health promotion as well as examination of health systems as they impact patient outcomes. By the late 1980s the nursing research priorities numbered 7 [4]. They included: "1. Low birth weight infants and their mothers; 2. HIV positive patients, partners, and families; 3. Long-term health care for the elderly; 4. Symptom management; 5. Health promotion to modify behavior for reducing risk factors; 6. Family adaptation to chronic illness; and 7. Improving the quality of life during chronic illness".

By the mid-1990s nursing research emphasized interdisciplinary studies regarding "psychological, biological, social, medical and nursing factors" [4]. Community based studies were prominent. Finally in 1993, the National Institute of Nursing Research (NINR) was established and once again Dr. Hinshaw presided as Director. Dr. Patricia Grady took over the Directorship in 1994 and remains today in that role. Under her tenure, the direction of NINR broadened to include research in the areas of genetics, neuroscience, environmental science while continuing many of the original initiatives. Nursing research spanned the bench or basic science to qualitative studies examining for example what it was like for parents to take a baby home from the neonatal intensive care unit (NICU). The

latter was Kenner's (the author) research from the late 1980s on. Ethical issues surrounding genetic breakthroughs afforded nurses the opportunity to explore another dimension of genetics research. By the late 1990s another area of research that nurses took on was end-of-life and palliative care. Some studies, like in the early NINR days focused on symptom management but a lot of the work was moving to patient perceptions, identification of gaps in services especially for neonates and children, and cost effectiveness of acute versus hospice care. The shifting demographics of the US population also supported this type research as we were and are an aging population. Nursing research changed from disease orientation to patient-orientation [4].

2. 21st Century Nursing Research

So where are we now? What are the key areas for our research? Research areas include staffing and workforce issues-how many staff are needed and at what level of education should the nursing workforce be prepared? These are questions that Drs. Linda Aiken and Peter Buerhaus have asked. Dr. Buerhaus a nurse and health economist has made projects on where and how the nursing shortage in clinical practice and education will occur over the next several years. Dr. Mary Naylor's work [6] on transition care in the elderly now examines costs associated with transition from hospital to home or long-term health facilities and back. Instrument development related to those conditions that result in readmissions to hospitals or lengthy stays are popular among nurse researchers. For example, the development of the Braden scale for predicting the occurrence of pressure ulcers [4]; the development of an instrument to measure parents of premature infants' transition to home by Dr. Marina Boykova [7]; and the N-PASS: Neonatal Pain, Agitation and Sedation Scale by Dr. Patricia Hummel and colleagues [8].

Public health issues now fall within the realm of nursing research with many studies while nurse led, reflecting interdisciplinary research teams. Nurse researchers as far back as the 1980s focused on health issues impacting communities, populations, and public health. NINR influence this shift to include public health when they started setting the research agenda for nursing. In 1988, the National Center for Nursing Research included in the research priorities health disparities and preventive health [4]. In the last few years, one area of public health concern - oral health took the stage as an interdisciplinary research issue.

Nurses recognized that oral health-keeping mucus membranes moist when neonates or adults are on ventilators contributed to better health outcomes. Researchers recognized that good oral health practices in mothers and children led to less infections and better health. Oral health research centers exist for example Indiana University-Purdue University Indianapolis where lab and clinical studies are conducted and New York University where one study examines the link between preterm birth and periodontal disease. This New York center also focuses on minority health and is funded by the Institute for Dental Research (NIDR) and the National Institutes of Health's movement to set up Minority Oral Health Research Centers [9]. Research that includes nurses now looks at oral treatments in children who live in underserved areas.

By 2006 nursing research priorities included use of technology in patient care, health promotion, disease prevention, and quality of life [4]. These areas continue to be important in NINR's new strategic plan published in 2016. Dr. Patricia Grady, NINR's Director points out in this report that nursing research provides the foundation to ground our nursing intervention-it provides evidence to support our care interventions [10]. Many of these interventions, in the past were just passed on from teacher to student, experienced practitioner to novice practitioner without thinking about whether or not there was good science or evidence to support our care. Today, nurses are leading the way in biobehavioral research, bench science research, for example looking at pain receptors, as well as examining end-of-life/palliative care and quality of life issues. Chronic illness still dominates nursing research today. NINR's 2016 Strategic Plan identified four foci: 1. Symptom Science: Promoting Personalized Health Strategies; 2. Wellness: Promoting Health and Preventing Disease; 3. Self-management: Improving Quality of Life for Individuals with Chronic Illness; and 4. End-of-Life and Palliative Care: The Science of Compassion [10]. Two other areas linked to advancing nursing science are: Promoting Innovation: Technology to Improve Health and 21st Century Nurse Scientists: Innovative Strategies for Research Careers [10]. Many more nurses receive training in post-doctoral research programs or through NIH designed research development/career development programs. To advance nursing science and elevate the awareness of nursing research, nurses must receive better training in all types of research. The "omics" are playing a larger role in nurse research and this is another area of training. Omics refers to genetics, proteomic, and microbiomics-areas that

most nurses have little knowledge. NIH, for example holds Summer Genetic Institutes where nurses can gain experience with genetic testing, genetic labs, and they learn the implications of genetic illnesses including health promotion. Genomics coupled with lifestyle can predict future health risks leading to individualized health promotion strategies. This is where health coaching comes in to play.

Health coaching, personalized health, which emphasizes, for example, how an individual's normal sleep pattern and high-energy times can dictate when exercise is most effective. In my own life, I function better at night so I should exercise at night to reap the most benefit for my health. Genomics-interaction of genes and the environment, including lifestyle is part of personalized health and health coaching. How effective the guidance from a coach that considers an individual's lifestyle, sleep habits, genetic background versus the tradition recommendations for sleep, nutrition, and exercise that is not individualized, is but one area of current nursing research. Part of this coach also empowers the patient and family to be a key partner in determining a health plan. Patient engagement and the examination of community engaged or participatory research are other areas of nursing research. These areas engage the community to determine an intervention and then measure the outcome. For example The College of New Jersey School of Nursing, Health, and Exercise Science's one research project funded by Novo Nordisk, Inc. (Plainsboro, NJ) examines the link between teaching second grade children (7 and 8 year olds) about nutrition and exercise and giving them fun activities in which to practice and the incidence of childhood obesity and Type 2 Diabetes. Students and faculty from the Departments of Nursing and Health and Exercise Science worked with teachers, administrators and parents for three months to develop a feasible health and nutrition intervention. The Smart Nutrition and Conditioning in Children (SNACK) (an American term for grabbing something to eat between meals) engaged families, teachers, administrators, faculty and students to plan nutrition lesson, exercise/fitness activities in hopes of preventing obesity, a rising problem in New Jersey, and, in turn preventing Type 2 diabetes. This project is an example of community engaged learning, empowerment of stakeholders-community partners, and interdisciplinary research. Therefore symptom science can include symptom management of pain in cancer, symptom management in terms of prevention of complication due to combat injuries such as traumatic brain disorders or

post traumatic stress disorders (PTSD) [10].

Wellness, then as another NINR [10] focus area may include workplace issues such as staffing ratios and the impact on patient safety and quality care; healthy lifestyle as use of interventions such as COPE-Creating Opportunities for Personal Empowerment (<http://www.cope2thrive.com/about/>) that addresses problems such as bullying in schools, childhood obesity, and depression. The interventions are evidence-based and are personalized to each child's own needs. One of the recent studies examined the use of COPE in teens who were overweight and exhibited depressive symptoms [11]. This study is a good example of a program of research by a nurse research that spans more than a decade and it demonstrated the overlap between symptom management and wellness in NINR's focus areas.

Promoting health and preventing illness [10] looks at use of technology such as mobile applications, health disparity issues, nurse-led interventions, communicable and non-communicable illnesses as related to health promotion, community based intervention, to name a few. Nurses are engaged with computer science and bioengineering experts to create text based applications to promote health. Use of the Electronic Health Record (EHR) as a mechanism to improve information sharing across setting and to enhance patient safety is a growing area of research. Patients seen in community based health centers for chronic illness management, for example, if hospitalized often times could not have their patient record shared with the acute care hospital. Now with the advent of the EHR, more effective ways of quickly accessing valuable patient information are being developed. This information sharing can sometimes stop hospital readmissions, which are very costly to both the institution and the patient. This is another area of nursing research. The impact on health outcomes is the focus of nursing research. Other nurse researchers are examining health disparities related to end-of-life and palliative care. There are many examples of these studies.

Self-management as the last area of NINR's scientific focus areas examines quality of life for individuals and families experiencing chronic illnesses. Again, the emphasis is on patient/family empowerment and individualized treatment/intervention options that consider socio-cultural aspects [10]. Care coordination, medication adherence, transitions of care models are all examples of nursing research in this area.

3. Magnet Recognition Program

The Magnet Recognition Program started in the early 80s in response to severe nursing shortages in many areas of the United States. Recognizing that a shortage of well qualified nurses would adversely impact practice the American Academy of Nursing (AAN) convened a task force on Nursing Practice in Hospitals Researchers headed by Dr. Margaret L. McClure, EdD, RN, FAAN. This task force identified 165 hospitals through the AAN membership to be included in a national research study. Ultimately 41 hospitals participated. The research examined how some hospitals were able to recruit and retain highly qualified nurses. The findings indicated that these hospitals: supported nursing leadership, provided the staff with autonomy in directing patient care, and they recruited and retained their nurses-this was named the magnet effect [12]. Later work would refer to the "forces of magnetism" that drew nurses to work in these organizations and supported high quality patient care and satisfaction. The 14 forces of magnetism included: 1. Quality of nursing leadership; 2. Organizational structure; 3. Management style; 4. Personnel policies and programs; 5. Professional models of care; 6. Quality of care; 7. Quality improvement; 8. Consultation and resources; 9. Autonomy; 10. Community; 11. Nurses as teachers; 12. Image of nurses; 13. Interdisciplinary relationships; and 14. Professional development [12]. These forces were reduced in 2008 to five conceptual components: 1. Transformational leadership; 2. Structural empowerment; 3. Exemplary professional practice; 4. New knowledge, innovation, and improvements; and 5. Empirical quality results [12,13]. 1993 the American Nurses Credentialing Center (ANCC) that operated under the American Nurses Association (ANA) founded the Magnet Recognition Program. Magnet's program goals were: 1. Identify excellence in the delivery of nursing services to patients; 2. Promote quality in a milieu that supports professional clinical practice, and 3. Provide a mechanism for disseminating best practices in nursing services [12]. The first US hospital to be designated Magnet was the University of Washington Medical Center, Seattle, Washing in 1994 followed in 2002 by the first international hospital to attain Magnet. To achieve Magnet designation the healthcare organization must be committed to having bachelor's degree or higher nursing staff as the majority of their registered nursing workforce and they must be invested in conducting nursing research as well as having nursing interventions supported by evidence [12]. As of 2011, 75% of the nurse managers

must be baccalaureate prepared and the chief nursing officer master's prepared. The organizations must support positive clinical, community, workforce and organizational outcomes [12]. One source of these outcomes is nursing research. Nurse sensitive indicators and clinical indicators are used in nursing research. These indicators center on patient satisfaction, nurse satisfaction, falls, pressure ulcers, infections-ventilator associated pneumonias, urinary tract infections, and other type infections, for example [12]. Since many hospitals did not have active nurse researchers, joint positions became a way to start the Magnet journey. For example some hospitals created committees of hospital based nurses along with academic nurses who worked in colleges and schools of nursing to help identify nursing research problems that centered on outcomes. These often looked at patient and nurse satisfaction with the care given. If a hospital had a high number of falls in a certain population of patients like the elderly, then nursing studies would look at factors that either contributed to or could prevent falls. Over time these committees demonstrated to hospital administration that a Vice President for Nursing research or a nurse scientist needed to be hired. For example, in Boston, Massachusetts most of the city's major hospitals include the Veterans Administration employ nurse scientists. These positions may focus on a specific population such as cardiac care or cancer care. Not only do these positions contribute to the providing evidence for nursing interventions but pave the way for hospitals to achieve Magnet designation. The Magnet designation becomes an excellence recruitment tool for nurses and patients. The key to a successful Magnet journey is to have a chief nursing officer that is a visionary and empowers the nurses to take responsibility for improving health outcomes and working conditions. Innovation and knowledge of the staff must be rewarded. Nursing research must be a part of the nursing culture. Magnet is growing globally and there are Magnet hospitals now in several countries-Australia, Canada, Lebanon, and Saudi Arabia. The number of countries involved in Magnet is growing. So is involvement in global nursing research.

4. Global Nursing Research and Its Link to US Nursing Research

Many of the priorities and trends identified in the US are issues globally. NINR now offers support for global health research. Nurses are the key to changing health outcomes for societies and through health care delivery

changes. NINR has funded work in China, Cambodia, Malawi, Kenya, Uganda, Mexico, and Jamaica to examine HIV-risk reduction interventions; studies in South Africa, China, Thailand, and Zimbabwe focused on end-of-life care. These areas are ones that US nurse researchers are also examining.

In my area of expertise-perinatal/neonatal, Neonatal Abstinence Syndrome (NAS) is a growing US problem but one that is now reaching global audiences. The rising problem of opioid use is not limited to the US or high resourced countries but also is important in middle- and low-resourced countries as well. Central Line-Associated Blood Stream Infections (CLABSI) is an infection that is preventable and therefore of great interest in the US. Many of the neonatal units will post how many days have passed without a CLABSI infection. The reduction in CLABSI has primarily been due to a team approach to central line care. This reduction fits with the priority of patient safety [14]. The Council of International Neonatal Nurses, Inc. (COINN) with funding from AbbVie undertook a project that focused on neonatal nursing workforce. The creation of this database was to answer the questions who are neonatal nurses, where do they work, and what do they do. Dr. Wakako Eklund created the first phase of this work by running a qualitative study at COINN's Belfast conference and with COINN's help set up an international advisory group to create a workforce questionnaire. This project entitled "COINN Global Neonatal Provider Database Initiative (CGNPD)", which was her capstone project for her Doctor of Nursing Practice (DNP) degree has now afforded COINN to expand this work [15]. Brazilian colleagues are translating this questionnaire into Portuguese and launching it in 2017. This educational project is now turning to a research one that examines the impact of a well-trained neonatal nursing workforce on neonatal outcomes. Again this work is similar to other US studies that are focusing on patient safety and the nursing workforce as well as those studies examining staffing issues.

The issue of universal health coverage is a global one. It certainly has been part of the US national presidential election this year. Nurses are studying many aspects of access to health care, health disparities as well as how health care is paid for in a country. The International Council of Nurses (ICN) joined forces with WHO in 2015 to state that "No health without a workforce, and no workforce without nurses and midwives" [16]. This statement goes on to call nurses to action to work on the Sustainable Development Goals (SDGs) especially Goal 3 that focuses on Health and

Well-being of societies. Universal health coverage is another part of this statement. Nurse researchers must be involved in studying the nursing workforce as a return on investment rather than a recurring cost in healthcare. Nurses must define our role in healthcare and what we do-like COINN is doing for neonatal nursing. These are key areas of research that are of global importance.

DISCUSSION

The world is small and the issues that face nurses are similar globally. Nursing research is key to demonstrating the value of nursing to education and practice, to patient safety and quality care. Nursing research provides the evidence to support why a certain intervention is better than another nursing care intervention. Interprofessional or interdisciplinary work is growing in importance. In the US interdisciplinary research teams are valued and even required to obtain certain federal funds. Global research is encouraged especially to address the SDGs and workforce issues. Partnerships between academic and healthcare institutes is encouraged in the US and abroad as many more academics conduct research and have the training needed to develop and implement studies while the practice partners provide the clinical questions and patient populations. Global teams can now easily work through electronic means and multisite studies no longer refer to different institutions in one country but rather to institutions in many countries.

The Magnet journey which is coveted in many countries requires healthcare delivery systems to have strong nursing leadership, research teams-many of which are academic and practice partnership, and a commitment to transformational leadership that can drive a culture change, staff that are empowered to effect change and act as change agents, high quality professional nursing practice, and new knowledge generation through research [12]. This journey, while started in the US is now a global trend. The SDGs through the United Nations, WHO, and organizations such as the ICN has brought nurses and other disciplines together to support nursing and interprofessional research to change health outcomes globally. Like Magnet's change in 2011, outcomes are the important aspect of healthcare delivery systems and societies. Nurses are at the forefront of healthcare delivery and of societal health outcomes. But nurses must recognize their power and must develop new nursing leaderships who are risk takers, who instead of talking with passion, talk with data-

provide the evidence to demonstrate the role nurses play in health outcomes. With the growing presence of the Internet, global nursing research teams are possible. We can learn from each other through research and evidence-based practice projects. Nurses must commit to changing the view of nursing's vital role in healthcare. One way is through global nursing research.

CONCLUSION

This article discussed US nursing research trends of the last few decades. It has described the link between Magnet Recognition of healthcare organizations and nursing research/evidence-based practice. The link between US and global research agendas was presented along with organizations such as the ICN and WHO that support nurses' role in healthcare changes. The time is right for nurses to become more active in research and to lead the way to positive health outcomes.

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