



The Role of Interdisciplinary Faculty in Nursing Education: A National Survey



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ARTICLE INFO

Keywords:

Interdisciplinary faculty
Interprofessional education
Nursing faculty

ABSTRACT

Background: The role of interdisciplinary faculty in schools and colleges of nursing has evolved over time. Historically, integration of interdisciplinary faculty into nursing education was as experts in non-nursing content and to fill a gap created by the lack of doctorally prepared nurses. In the 1980s, Lenz and Morton surveyed Departments, Schools and Colleges of Nursing to explore the role of interdisciplinary faculty in nursing education.

Purpose: Our study adapted Lenz and Morton's work to examine new trends in faculty composition, while also considering the evolution in nursing education, including the integration of doctor of nursing practice (DNP) prepared faculty.

Results: Differences in enrollments, programs offered, and number of faculty and faculty composition were observed between 1988 and 2017. In 1988 the most common disciplines represented were nutrition, education and psychology, while in 2017 the most common disciplines were pharmacology, statistics and biological sciences. The current study shows a decrease of 15% in interdisciplinary faculty educating nursing students, although this finding may be related to differences in sampling techniques.

Conclusions: Integration of interdisciplinary faculty has the potential to enrich nursing education by bringing in a depth of specialized knowledge from other disciplines. Further faculty role-modeling successful interdisciplinary collaboration is another way to prepare nurses for team-based patient care which is an imperative skill in today's health care arena.

Introduction

There continues to be a nursing faculty shortage in the United States (AACN, 2017). Simultaneously, the role of interdisciplinary faculty in education of nurses has received new importance after several decades of discussion with varying perspectives. In the current era, this discussion is shaped by the call to educate nurses who are skilled in interprofessional competencies (AACN, nd; IOM, 2011). The Interprofessional Education Collaborative (IPEC) (2016) suggests that all health professionals embrace core competencies that will increase collaboration: knowing the roles of the whole team, mutual respect, relationship-building values, and communication.

Nursing educators should examine if we are practicing what we preach; are we embracing the role of interdisciplinary faculty in the spirit of collegiality and collaboration? This study examines the role of interdisciplinary faculty in today's nursing education workforce by

replicating the 1988 survey by Lenz and Morton that examined the role of non-nurse faculty in nursing education.

According to Choi and Pak (2006) interdisciplinary refers to analyzing, synthesizing, and harmonizing of “links between disciplines into a coordinated and coherent whole” (p. 359). The terms interdisciplinary and interprofessional are often used interchangeably but there are differences. Interdisciplinary refers to when “two or more disciplines (nursing, medicine, psychology, sociology, and others) align resources in educational endeavors, such as engaging in combined courses and establishing cooperative projects” (Parse, 2015; p. 5), while interprofessional refers to the healthcare professions. Since we are examining education and also in-line with the original study we use the term interdisciplinary (Lenz & Morton, 1988). So, for the purposes of this paper, we define the term *interdisciplinary faculty* as faculty from more than one discipline involved in the education of a group of students, such as, statisticians and informaticians alongside nursing

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faculty.

Work on understanding the need for interdisciplinary faculty began soon after nursing moved from hospital-based training to academic education according to Bridgeman's 1953 text, *Collegiate Education for Nursing* (as cited in Lenz & Morton, 1988). The author found that one-third of teaching in the academic setting was done by physicians and faculty from other disciplines, with two-thirds was delivered by nurses. The author proposed that this collaboration allowed nurses to teach nursing content with other faculty teaching areas that nurses were not prepared to do.

In the 1970s, Baltes noted a lack of nurse faculty with higher-level science background (Baltes, 1976). She further discussed the use of faculty from overlapping scientific fields to teach such scientific content. Additionally, Baltes argued that nursing students and faculty would benefit when interdisciplinary faculty were involved in teaching because of their different perspectives. Finally, including interdisciplinary faculty socialize and role model for students the interdisciplinary collaboration (Baltes, 1976). The conversation of the utility of non-nurse faculty in nursing academics continued in the 1990s. Braithwaite, Stark, and Hughes (1992) called for a wider debate about who should be teaching nurses. The authors discussed how interdisciplinary faculty may be value added by bringing a different perspective to the discipline of nursing, but recognized the belief that utilization of interdisciplinary faculty may compromise the discipline by creating a gap between nursing theory and practice. In fact, Hughes (1991) proclaimed that educators must have a nursing perspective to effectively teach nursing content.

The focus on interdisciplinary faculty received renewed attention in 2009 when the Institutes of Medicine and the Institute for Healthcare Improvement called for healthcare professionals to be educated in team-based care as part of their basic education in order to be part of Interprofessional Collaborative Practice (ICP) (Brandt, 2015). The importance of ICP is also recognized by AACN; they endorse interprofessional education across all nursing curricula (American Association of Colleges of Nursing, n.d.). However, challenges exist in providing education that can enable nursing graduates to work effectively in interprofessional teams. Collaborative education efforts that include one or more health profession schools are common in many educational settings (Dow & Thibault, 2017.) Though, the planning and execution of these collaborations are complicated, in part, by scheduling educational experiences into curricula that are already full. Another challenge is that there are 137 medical schools, 129 pharmacy schools and 1711 nursing schools (for prelicensure) so having faculty and students from several schools within one university is not always feasible (Disch, 2013). These challenges require considering opportunities outside of traditional didactic coursework to foster ICP. For example, interprofessional role modeling in clinical education is another component of interprofessional education (Delva, Jamieson, & Lemieux, 2008).

A less studied approach is the integration of interdisciplinary faculty in nursing schools to both teach non-nursing content and exemplify interdisciplinary collaboration among faculty for students. This approach requires knowledge of what constitutes an optimal faculty composition to prepare nursing students for an increasingly interdisciplinary team-based model of patient care. Yet, there is a lack of current data on faculty compositions in nursing schools.

In the 1980s, Lenz, 1985; Lenz and Morton, 1988 surveyed departments, schools and colleges of nursing to examine faculty compositions and understand how interdisciplinary faculty contributed to nursing education. They concluded that non-nurse faculty played an important role in teaching and the non-nurse faculty role was beneficial in the education of nurses. Lenz and Morton's (1988) work is the last published study examining interdisciplinary faculty compositions in nursing education. To examine newer trends in faculty composition and their contribution to nursing education, our study adapted Lenz and Morton's work from 1988, while also considering the evolution in nursing education, including the integration of doctor of nursing

practice (DNP) prepared faculty. As in the 1988 study, leaders at schools of nursing were asked to comment on hiring trends across all academic programs. The purpose of our work is to provide a comparison of Lenz & Morton's, 1988 study's results to results from 2017. However, a copy of the survey from the 1988 study was no longer available. Our questions were constructed based on our analysis of the original paper and conversations with Dr. Lenz. Working from the original research of Lenz and Morton (1988), the current study explored to what extent and how interdisciplinary faculty was utilized in departments, schools and colleges of nursing.

Methods

This cross-sectional descriptive study, used an online survey for data collection. The population of interest was leaders in nursing education who have knowledge of nursing faculty demographics and hiring practices including Deans, Department Chairs and Directors. To identify eligible participants, a distribution list was created from the AACN membership list, which included names of individual leaders, their role, and U.S. postal mailing addresses. Since email addresses were not provided on the AACN list, we generated a list of corresponding emails by accessing the individual leaders' websites. Only one person in a leadership position per department, school, or college was contacted. Recruitment occurred in the form of an email requests for participation. The email stated that participation was voluntary and that only aggregated results would be disseminated. The study was exempted by Virginia Commonwealth University's Institutional Review Board.

Sample

Of the 908 invited participants for the 2017 survey, 135 (15%) completed the survey. For the 1988 study, the sample was derived from a total 448 schools with a random sample of 50% selected ($N = 224$). In 1988, 157 schools (70%) responded.

Instrument

The survey was administered in REDCap (<https://projectredcap.org>) and took 10–15 min to complete. The survey consisted of a mix of yes/no, multiple choice and open-ended questions regarding the composition of an organization's faculty. A specific definition of “interdisciplinary” was not provided to participants. Rather, the survey asked, “How many of your faculty do not have nursing degrees? (i.e. faculty such as statisticians, pharmacists, informaticists).” In contrast to the 1988 survey, we used branching logic to prevent participants from answering questions that did not apply to their organization's faculty mix. For example, if the participant indicated that their organization did not employ interdisciplinary faculty, the questions pertaining to those faculty were not presented resulting in only 14 possible questions. For participants who indicated that their organization did employ interdisciplinary faculty an additional 18 questions were asked for a total of 32 questions. Respondents were asked about faculty teaching across all programs and all courses rather than to specify if their interdisciplinary faculty taught in upper or lower division nursing courses or distinguish between undergraduate or graduate programs. Open-ended questions asking participants to share their predictions on hiring trends and their perceptions of whether interdisciplinary faculty was an asset or challenge.

Procedure

The survey used for this study was organized around the original Lenz and Morton (1988) study with modification of some questions to include content about DNP faculty. Table 1 shows the original study foci and the foci of this study. Based on Dillman's methods, reminder emails were sent after two and three weeks, and the survey closed after

Table 1
Content of 1988 and 2017 surveys.

1988 survey	2017 survey
To what extent are non-nurses employed in faculty positions in schools/departments of nursing?	To what extent are interdisciplinary faculty employed in colleges/schools/departments of nursing?
What are the characteristics of the schools most likely to employ them?	What are the characteristics of the schools utilizing a greater mix of faculty?
In which disciplines do non-nurse faculty in schools/departments of nursing hold their highest degree?	What disciplines are represented by interdisciplinary faculty?
What are the primary roles of non-nurse faculty in schools/departments of nursing?	What are the primary roles of interdisciplinary faculty?
What do the top administrators of schools/departments of nursing perceive as the assets and problems of employing non-nurse faculty?	What do the top administrators of schools/departments of nursing perceive as the assets and problems of interdisciplinary faculty?
What have been the trends in hiring non-nurse faculty in the last five years and what changes do top administrators anticipate?	How have hiring trends of interdisciplinary faculty changed in the last five years and what are anticipated changes in the next five years?

one month (Dillman, Smyth, & Christian, 2009).

Data analysis

Data were extracted from the REDCap database in the form of an Excel file which was then imported into SPSS for analysis. Descriptive statistics were calculated (means and ranges) and compared to Lenz and Morton's results from 1988.

Findings

Respondents were asked to indicate all programs they offered at the undergraduate and graduate levels. Enrollment numbers changed somewhat overtime with an average of 406 students/school in 1988 compared to an average of 316 in 2017 (Table 2). The average number of full-time faculty decreased from 38 in 1988 to 16 in 2017. Only 5% of respondents reported an association with a health science center compared to 21% in 1988. Programs of study offered also showed variance (Fig. 1) with a 32.7% increase in respondents offering a BS or BSN (from 51% in 1988 to 83.7% in 2017).

Another noteworthy change was number of doctoral programs. Fourteen percent of respondents in 1988 reported offering BS, MS and doctoral programs. The types of doctorates were not reported but given doctoral degrees available in nursing during that time, the majority was likely PhD programs. In 2017, 5% of respondents reported offering a PhD, 15.5% of respondents reported offering a DNP, and 4% of respondents reported offering both DNP and PhD.

Faculty composition and trends

Forty-five percent of respondents reported using interdisciplinary faculty in 1988 which is greater than the 30% reported in 2017. The 1988 study reported that interdisciplinary faculty was more likely to be part-time. In 2017, 62% of interdisciplinary faculty was full-time. Both surveys queried whether interdisciplinary faculty was regarded as an asset or challenge. In 1988, 32% reported interdisciplinary faculty as an asset in the supporting student learning category. The challenges reported were in four categories: problems associated with student learning (13%), problems interacting with nurse faculty (6%), organizational problems (16%) and difficulty keeping up with their own field

(0.2%). In 2017, greater than 90% reported interdisciplinary faculty as an asset in the following categories: supporting student learning and faculty development, as well as interacting with nurse faculty and with their own discipline. Comments regarding challenges focused on logistical problems and perceptions of philosophical disconnect. For example, several comments focused on state board regulations that mandate that all teaching faculty have an active nursing license. Other comments noticed the disconnect between the importance of teaching interdisciplinary concepts to students but embracing the philosophy that, “nurses should teach nurses.”

Both surveys asked about the composition of interdisciplinary faculty. In 1988 the most common disciplines represented were nutrition, education and psychology. While in 2017 the most common disciplines represented were pharmacology, statistics and biological sciences. In 1988 less than 2% of respondents reported the disciplines of public affairs, drama, law, library science, political science, media and theology. In 2017, less than 2% reported the disciplines of philosophy and public health.

The 2017 survey also inquired about which courses interdisciplinary faculty taught. The two most common courses cited, pharmacology (12.6%) and statistics (11.1%), aligned with the interdisciplinary faculty representation. The third and fourth most common courses cited were biological sciences (6%) and informatics (3.7%). Other courses (6.7%) included medicine, business, education, philosophy, psychology, and public health.

The roles of interdisciplinary faculty were also explored. The 1988 study reported that 86% of interdisciplinary faculty held a primary teaching role with administrative roles “rarely” mentioned. Rank of interdisciplinary faculty was not discussed in the 1988 study. In 2017, the majority of interdisciplinary faculty held a teaching role with only 2.2% of respondents reporting interdisciplinary faculty in an administrative role. Data from 2017 showed a range with 5.2% holding the rank of Instructor and 9.6% holding the rank of full Professor.

Both surveys inquired about interdisciplinary hiring trends over the last 5 years. In 1988, all schools whether they had interdisciplinary faculty or not were queried regarding 5-year trends. The majority of respondents (74%) stated that there had not been any changes in hiring while 7% reported an increase in hiring and 13% reported a decrease. The 2017 survey asked schools that currently employ interdisciplinary faculty about 5-year hiring trends. Fourteen percent reported no change

Table 2
Enrollment & programs offered in 2017 and 1988.

	2017 survey (n = 135)	1988 survey (n = 157)
Associated with health science center n (%)	7 (5%)	83 (53%)
Enrollment, average (range)	316 (10–3359)	406 (35–3499)
Number of faculty, average (range)		
Full time	16 (1–118)	38 (4–231)
Part time	PhD 0.5 (0–7) DNP 0.7 (0–12) Interdisciplinary 1 (0–6)	Data not reported

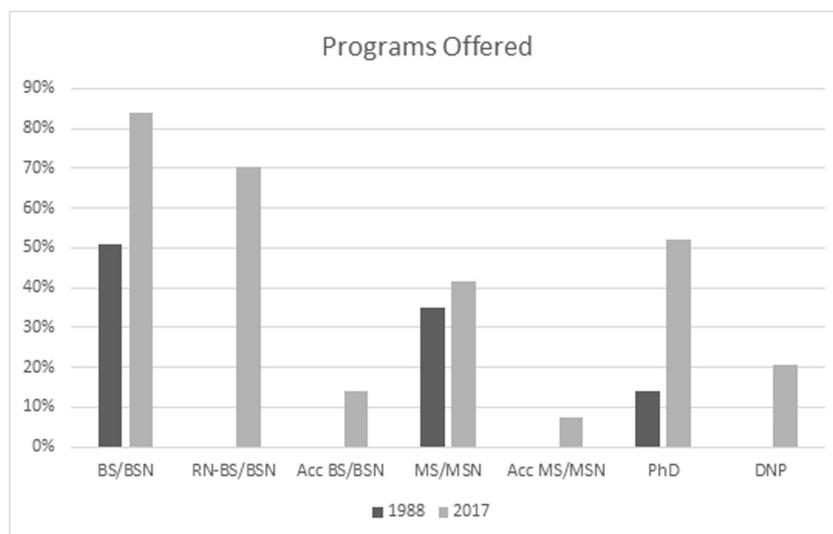


Fig. 1. Comparison of programs of study offered.

while 9.6% reported an increase and 7% reported a decrease. A variation noted was in the comments from 2017 that hiring decisions were driven by state policies. Comments included, “state nurse practice act mandates at least a master's degree in nursing to teach nursing so [I] don't anticipate changes.”

Our work did inquire about the role of DNP faculty through open ended questions. While some responses supported the use of DNP prepared faculty in clinical teaching roles, other comments specified the preference of hiring PhD prepared faculty to conduct research and meet their university's tenure requirements.

Discussion

We found that there is a decrease of 15% in interdisciplinary faculty educating nursing students. Coupled with the finding that the interdisciplinary faculty composition has changed this may indicate that nursing schools have enough nurse faculty with content knowledge that was previously farmed out to other disciplines. However, the potential role-modeling of collaboration between interdisciplinary colleagues is lost which is troubling given the need for and emphasis on nurses' ability to work in interdisciplinary teams across care settings (AACN, 2015; IOM 2011). Several national and international organizations have drawn attention to the need for healthcare professionals that can work in teams in order to deliver high quality and safe healthcare. The IOM Report (2011), the QSEN Competencies (QSEN Institute, n.d.), and IPEC Competencies (IPEC, 2016) all call for curricula to include inter-professional skill development, a skill that can be easily seen by students if present in their educational environment.

Overall, we found differences in enrollments, programs offered, and in number of faculty and faculty composition between 1988 and 2017. Affiliation with a health science center saw a sharp shift from 21% in 1988 to only 5% in 2017. Average enrollment size also dropped from 406 (1988) to 316 (2017) which is coinciding with a drop in the average of full-time faculty employed from 38 (1988) to 16 (2017). The number of options for nursing education dramatically increased over time which potentially impacts the distribution of both students and faculty. Since 1988, the number of baccalaureate programs has doubled in the United States (Scheckel, 2009).

Degree programs offered varied significantly between the two studies. In 1988, just over half of the respondents (51%) reported offering a BS/BSN compared to the vast majority (87%) offering baccalaureate programs in 2017 with 70% reported offering a RN-BSN program and 14% offering an accelerated BS/BSN program. This increase in BSN programs correlates with recognition of the importance of professional

education for nurses, since a higher percentage of BSN prepared nurses are associated with higher healthcare quality (American Nurses Credentialing Center, n.d.; Lundmark, 2008; IOM, 2011).

Likewise, an increase was observed in MS/MSN programs in 2017. Lenz & Morton's, 1988 study reported 35% of respondents offered MS programs. In 2017, 41.5% reported offering a MS/MSN program. The rise in MS nursing programs parallels nursing workforce changes in the United States (Robert Wood Johnson Foundation, 2017). The nurse practitioner (NP) movement was gaining momentum about the same time that Lenz and Morton's work was published (American Association of Nurse Practitioners, 2019; American Association of Colleges of Nursing, n.d.). By 1987 the Federal government had invested over \$100 million in NP education in an effort to meet workforce demands. By 1999, approximately 68,300 nurse practitioners practiced in the United States. The workforce grew steadily over the next several decades to an estimated 248,000 NPs in 2017 (American Association of Nurse Practitioners, 2019).

Between 1988 and 2017, nursing education saw a change in the type of doctoral degrees offered to students. In 1988, 14% of respondents reported offering all three levels of nursing education. The predominate doctorate in 1988 was a PhD. In 2017, 5% of respondents reported offering BS, MS and PhD programs. Additionally, 15.5% of respondents offered a DNP program. This correlates with AACN's 2018 DNP Fact Sheet reporting increases in both DNP enrollment and graduates (AACN, 2019). The relative drop in PhD programs from the 2017 survey contradicts AACN's report of an increase in PhD programs offered from 2006 to 2014 (AACN, 2019). However, this could be a reflection of our study's low response rate whereas AACN's data are the actual number of programs offered in the country.

The dramatic increase in DNP programs and the potential impact on nursing faculty mix is the subject of many recent studies (Agger, Oermann, & Lynn, 2014; Smeltzer et al., 2015; Smith, Hallowell, & Lloyd-Fitzgerald, 2018). These articles discuss the conundrum that while DNP prepared faculty may address the faculty shortage, there remains discussion about how to best utilize the DNP faculty. Studies examining faculty mix should continue to focus on both interdisciplinary and intraprofessional faculty.

The 1988 study's correlation analysis found that schools using larger numbers of interdisciplinary faculty had larger enrollment size, offered BS, MS and PhD programs and were affiliated with health science centers. Higher utilization of interdisciplinary faculty by these programs was thought to be related to access to resources and program needs. However, Lenz and Morton did postulate that philosophical perspectives on the value of interdisciplinary faculty may differ at

larger, health science organizations. Further, they alluded to the complexity of team dynamics in large organizations which requires knowledge and skills in interprofessional collaborations. These thoughts align with the current thinking on the need for interprofessional skill development for not just large complex organizations but across all healthcare settings as demonstrated in the calls from the Institute of Medicine (IOM), Quality Safety Education for Nurses (QSEN), and IPEC. In 2017, only 15% of respondents reported an association with a health science center. Therefore, correlation between the use of interdisciplinary faculty with either school size or affiliation with a health science center was not conducted.

Lenz and Morton also observed a gradual decrease in the number of courses taught by interdisciplinary faculty and a slight increase in courses co-taught by interdisciplinary faculty. By having interdisciplinary faculty co-teach courses there was assurance that the nursing perspective was maintained. This aligned with their argument that nursing was increasingly being recognized as its own discipline. Nursing education was shaped by the philosophy that nursing as a discipline is unique and the impact of nursing education on healthcare would be “enhanced by nursing input and control” (Lenz & Morton, 1988, p. 185). This discussion dates back to the Nightingale Schools and relates the education of nurses as a foundational component of professional identity (Scheckel, 2009). The fear of losing professional identity or rather not develop one is a complex phenomenon and is not a new concern in nursing. Hughes (1991) argued that widespread use of interdisciplinary faculty could potentiate the gap between nursing theory and practice. This concern is also expressed more recently. The push for interdisciplinary learning models might be causing nursing to lose sight of the profession's theories and practice models (Butts, Rich, & Fawcett, 2012). The balance of educating nurses in interprofessional competencies while at the same time fulfill the need for nursing to maintain a strong professional identity is a contentious one. This paradox will continue to impact the utilization of interdisciplinary faculty in nursing education.

Limitations

Differences in study findings between 1988 and 2017 may be related to the sampling methods and response rates. The 1988 study used a random stratified 50% sample ($N = 224$) derived from schools with NLN accreditation resulting in a 70% response rate (157 respondents) while the 2017 study used a convenience sample using all of AACN's member schools ($N = 908$) resulting in a 15% response rate (135 respondents). The lower response rate for 2017 may be caused by differences in survey distribution. In 1988 the surveys were paper-based while only an on-line option was offered in the 2017 study. Online surveys have lower response rates than paper-based surveys (Ebert, Huibers, Christensen, & Christensen, 2018).

Recommendations for nursing education

Challenges exist in providing education that can enable nurses at all levels to work effectively in healthcare teams that are increasingly interdisciplinary. Role-modeling successful collaboration through the integration of interdisciplinary faculty in schools of nursing can be a valuable means to prepare students for interdisciplinary collaboration upon graduation. Also, including interdisciplinary faculty in nursing education can bring a depth of expert knowledge on subject areas that nursing faculty may not be able to provide, such as pharmacology, statistics, the biological sciences, and health informatics. Our results demonstrate that nursing leaders believe using interdisciplinary faculty is an asset by supporting student learning. We recommend the hiring of

interdisciplinary faculty, but nursing education leadership must carefully consider the appropriate faculty mix to provide their students with the interdisciplinary skills they will need to excel as healthcare evolves.

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