



Differences in Gender-related Profile Characteristics, Perceptions, and Outcomes of Accelerated Second Degree Nursing Students



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ABSTRACT

Background: The New Careers in Nursing (NCIN) program provided scholarships and other supports to accelerated degree students at 130 nursing schools and collected data from the scholars at three time-points.

Purpose: The NCIN database was analyzed to identify gender-based differences in scholars' profile characteristics, program experiences, and post-graduation outcomes.

Method: An adaptation of Jeffrey's Nursing Universal Retention and Success Model guided the analysis. Gender differences were assessed after multiplicity adjustments for false positive rates.

Results: Differences based on gender were found for profile characteristics, student affective factors, academic factors, professional integration factors, environmental factors, as well as academic, psychological and NCIN program outcomes. Results suggest that males were influenced by economic factors more than females when choosing nursing as a career. They had fewer concerns about financial aspects associated with being a student again yet secured employment sooner after graduation than female scholars. They did not view support services as important as did female students. They expressed confidence in their leadership competence more than their female counterparts.

Conclusion: Efforts are needed to better understand and address the nuanced gender-based perceptions and needs of nursing students who are male.

Background

The New Careers in Nursing (NCIN) program, a collaboration between the Robert Wood Johnson Foundation (RWJF) and the American Association of Colleges of Nursing (AACN), had four aims: help alleviate the nursing shortage, expand capacity of nursing programs, increase the diversity of the nursing workforce, and expand the pipeline of potential nursing faculty (AACN & RWJF, 2015). The program provided scholarships to 3506 nursing students (referred to as NCIN scholars) enrolled in 130 nursing schools in the United States (US) between 2008 and 2015. NCIN scholars held bachelor's degrees in a field other than nursing and were enrolled in accelerated bachelor's (ABSN) or master's degree (AMSN) nursing programs (AACN & RWJF, 2015). Participating schools admitted students into their existing accelerated curricula, based on their own admission criteria, and selected the students who would be awarded the NCIN scholarships. Schools were required by NCIN to recruit and award the scholarships to students from groups underrepresented in nursing (i.e. racial and ethnic minorities and men) and those who were economically disadvantaged. An additional

requirement was to provide leadership development and mentoring for the scholars (DeWitty, Huerta, & Downing, 2016); schools could offer institution-specific student support programs they deemed relevant. The NCIN National Office provided toolkits to assist schools in developing new or enhancing existing leadership and mentoring programs (New Careers in Nursing, 2016a). Data were collected from the students throughout the project and in fall 2016, the RWJF/AACN made the database available to selected research teams to study outstanding questions about underrepresented nursing students (New Careers in Nursing, 2016b). Because 1374 (39%) of the NCIN scholars were males, the database includes one of the largest sets of data about men studying nursing. Our purpose was to identify gender-based differences in the profile characteristics, perceptions, and outcomes for the NCIN scholars.

Literature review

Males make up 49% of the U.S. population (U.S. Census Bureau, 2011). While the proportion of males in the nursing workforce has

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increased steadily over the past 3 decades, they still account for only 11% of the nursing workforce (Auerbach, Buerhaus, Staiger, & Skinner, 2017). Only 12.5% of bachelor's of science in nursing (BSN) and 10.8% of master's of science in nursing (MSN) students in the U.S. are males (Robert Wood Johnson Foundation New Careers in Nursing, American Association of Colleges of Nursing, and Robert Wood Johnson Foundation, n.d.). Influential professional groups have called for the demographics of the nursing workforce to resemble the demographics of the population more closely (Institute of Medicine, 2011; Sullivan Commission, 2004), so it is important both to enroll more diverse students into nursing programs and to implement measures to help them succeed in these programs.

Male nursing students merit examination separate from females because they report different experiences and thus may have different program outcomes. Schmidt (2016), using qualitative methods, found that male nursing students appreciate caring as a professional value but may demonstrate it differently than females. Studies of male nursing students have identified biases perceived by these students, most of which are related to gender (Ellis, Meeker, & Hyde, 2006), including that the nursing program curriculum is designed by and for women (Christensen & Knight, 2014; Dyck, Oliffe, Phinney, & Garrett, 2009; O'Lynn, 2004). Male nursing students have reported feeling singled out because of their gender (Christensen & Knight, 2014; Dyck et al., 2009). They wish to be seen as a nurse, rather than as a male nurse and expressed the desire for more male faculty role models and male nursing student peers (DeVito, 2015). Although males make up only 7% of full-time nursing faculty, this number has increased from 4.7% in the last decade (American Association of Colleges of Nursing, 2017). The reasons for the low number of male faculty members are not clear but is likely multifactorial. Since males make up a lower percentage of practicing RNs than females, it is logical that their numbers in faculty positions would also be lower than females. Faculty salaries are typically lower in academia than in other advanced nursing positions, and this is known as a factor that deters both males and females from choosing to become nurse faculty. A qualitative study of male nurse faculty mentions salary as an important deterrent to the faculty role, with men in the study viewing themselves as family breadwinners (Hankins, 2011). Another barrier identified by Hankins was that males in the study had not considered themselves for a faculty role until they were directly asked. Perhaps if male nurses who seem promising for a faculty role were actively recruited, the proportion of males in the role would increase.

Peer mentoring has been used in nursing programs to provide support for students, but only one study was found specifically reporting on male students. Ford's (2015) study of peer-mentoring of sophomore nursing students by senior nursing students showed that senior male students scored significantly lower on the knowledge (nursing skills and theories) and staff relations (collegial relationships) subscales of the Nurse Self-Concept Questionnaire (Cowin, 2001) than did females before the mentoring experience. However, these differences disappeared after the mentoring experience, although both groups significantly improved in their scores (Ford, 2015). This may indicate that males gain in both knowledge and self-concept through the process of mentoring others. Abshire et al. (2018), using NCIN data, found that males were more likely than females to be highly satisfied with peer support. Students from both genders who were satisfied with peer support were more likely to graduate from their nursing program than those who were less satisfied. A study of male nursing students (Meadeus & Twomey, 2011) described the importance of support from peers, especially male peers. The authors cautioned educators not to put the "lone male" (p. 277) in a clinical group, because males can feel especially stereotyped in the clinical setting.

Studies show varying results when comparing males with females on academic outcomes. In an integrative review of factors influencing academic performance (Pitt, Powis, Levett-Jones, & Hunter, 2012), three of four studies found no association between gender and

performance in courses or on licensing examinations. However, three additional studies found that males were less likely to complete nursing programs than were females (Pitt et al., 2012). It is also important to identify factors that influence graduation rates from nursing programs. Although no national database of graduation rates exists, estimates of graduation rates calculated using AACN data of numbers of nursing students enrolled and numbers of graduates reported by AACN member schools show a 79–81% graduation rate over the years 2013–2016 (Bennett, Bormann, Lovan, & Cobb, 2016). This would mean that nearly 20% of nursing students nationally fail to complete their programs of study. If gender is one of the factors affecting attrition and interventions could be developed to ameliorate its impact, more nursing students could go on to become registered nurses.

The number of ABSN and AMSN nursing programs in the US is large: 269 and 66, respectively (Fang, Li, Stauffer, & Trautman, 2016). They attract more males than do traditional nursing programs (Brewer et al., 2009; Downey & Asselin, 2015; Siler, DeBasio, & Roberts, 2008), yet we found no studies directly comparing males and females in accelerated programs. McKenna, Vanderheide, and Brooks (2016) reported characteristics of males in accelerated programs, citing that males tended to be older than traditional college students, came from a variety of work backgrounds, and often had significant work experience. They entered nursing for career stability, varied practice opportunities, and to be part of a caring profession.

The *Future of Nursing* report recommended that nursing education prepare the workforce to assume leadership positions (Institute of Medicine, 2011). Conventional wisdom in nursing submits that males are more likely to move into leadership roles; some evidence supports this perception (Abrahamsen, 2004; Berkery, Tiernan, & Morley, 2014; Williams, 1995). Williams' (1992) research on men working in fields typically considered 'female' coined the term "glass escalator" to describe the rapid upward mobility of males. She linked the escalation to encouragement from their female colleagues, mentorship by male superiors, and gender discrimination by clients, which paradoxically encouraged them to move into positions that are perceived as more masculine, such as leadership roles. Hultin (2003) found that the rapid escalation of males occurred even when they were less educated than their female counterparts. Some would argue that in most areas of nursing, men, in fact, are privileged over women in leadership positions, except in academic nursing (McMurry, 2011). Indeed, in nurse anesthesia, a specialty composed almost equally of men and women (Munnich & Wozniak, 2017), men have disproportionately gained leadership positions earlier and held more leadership positions than women (Arndt, 2015). The purpose of our analysis of the NCIN database was to explore gender-based differences on profile characteristics, perceptions, program experiences, and NCIN program outcomes for students who started an accelerated nursing degree program and received NCIN scholarships. The research objectives were:

1. Describe differences in student profile characteristics, student affective factors, environmental factors, academic factors, and professional integration factors based on gender.
2. Determine differences in psychological, academic, and NCIN program outcomes between male and female NCIN scholars.

Conceptual framework

Jeffreys's (2015) Nursing Universal Retention and Success Model (NURS) was chosen to guide our analysis because it identifies factors that help nursing students to succeed. The evidence-based model proposes that, regardless of nursing program type, student success is a result of interactions among their profile characteristics, academic behaviors and values, professional integration factors, academic supports, environmental factors, psychological outcomes, and outside surrounding factors. If the most salient variables comprising these factors can be identified, they can be strengthened to facilitate student success

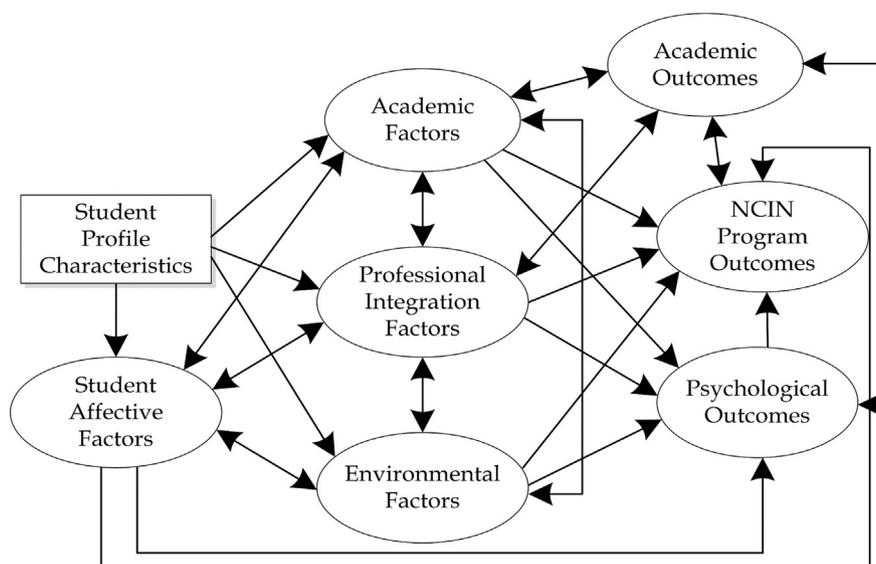


Fig. 1. Conceptual Model.

Adapted from “Jeffreys’s Nursing Universal Retention and Success Model,” M.R. Jeffreys, 2015, *Nurse Education Today*, 35, p. 427. Copyright 2014 by Elsevier Ltd.

Table 1

Jeffreys’s Nursing Universal Retention and Success Model (NURS) components matched to New Careers in Nursing (NCIN) database variables.

Jeffreys’s NURS Model (2015)		Matched variable from NCIN database
Component	Definition	
Student profile characteristics	Characteristics prior to beginning a nursing course	ABSN vs. AMSN sought, enrollment status, age, race/ethnicity, marital status, first language, field of first degree, time interval since first degree, highest degree, undergraduate GPA, career before nursing program, socioeconomic status
Student affective factors	Attitudes, values, beliefs about learning	Reasons to pursue degree, concerns to complete program (academic performance, program pace, family, time, finances)
Academic factors	Personal study skills, study hours, class schedule, attendance, and general academic services available at the college	Helpfulness of LASSI inventory and modules, whether student looked forward to attending class, helpfulness of exit exam
Professional integration factors	Factors that enhance a student’s interaction with college and professional environment	PIP helpfulness, availability of mentor, participation in campus or professional associations, aspirations to teach or be a leader in nursing, requirement of exit exam
Environmental factors	Factors external to the academic process that may influence students’ academic performance (examples family status, finances, childcare, outside employment, encouragement from friends)	Relocation, children’s age, educational debt, support to complete program (financial, family support, career guidance, mentoring/advising, social/peer support, academic support services, program quality, ability to spend time with family)
Academic outcomes	GPA and course/clinical grades	Professional Nursing Self-Concept Inventory: Leadership and Skill-competence
Psychological outcomes	Satisfaction and stress	Benefits of NCIN program, perceptions of support from school, satisfaction with nursing program and leadership development opportunities, effectiveness of preparation for career, satisfaction with mentor
NCIN outcomes	Not applicable	Degree earned, NCLEX-RN result, employment, job satisfaction, area of work, career aspirations.

Note: ABSN = accelerated bachelor’s of science in nursing. AMSN = accelerated master’s of science in nursing. GPA = grade point average. LASSI = Learning and Study Skills Inventory. PIP = Pre-entry Immersion Program. NCLEX-RN = National Council Licensure Examination – Registered Nurse.

(Jeffreys, 2012). Jeffreys’s model has been used to guide integrative reviews (Graham, Phillips, Newman, & Atz, 2016), study ESL nursing students (Donnell, 2016), and examine academic factors in associate degree (Dries, 2014; Schrum, 2014), baccalaureate (Alden, 2008), and RN-BSN (Strong, 2014) students. We adapted Jeffreys’s model as the conceptual framework to guide our study, adding the NCIN program outcomes as a separate factor (see Figure 1 and Table 1).

Methods

Data collection and NCIN database

Three surveys were administered to NCIN students for program evaluation purposes: at program entry, midpoint of enrollment, and

within six months of graduation (DeWitty et al., 2016) with four cohorts of data collection each year (28 cohorts total) to accommodate different program lengths and enrollment start dates (personal communication, C. Downing, January 6, 2017). The surveys were developed by the NCIN national program staff in conjunction with Educational Testing Service, the external evaluator, and have been described elsewhere (DeWitty et al., 2016). Most questions were specific to the time point at which each survey was administered. For example, the enrollment survey gathered information about demographic factors such as first degree and prior work experience, as well as perceptions of support programs offered by their school; the post-graduation survey gathered data about graduates’ satisfaction with the accelerated program, choice of nursing as a career, NCLEX-RN success, and RN employment.

Each survey contained some open-ended questions; responses to these questions were collapsed into discrete categories through content analysis. Items from Arthur and Thorne's (1998) Professional Self-Concept in Nursing Inventory (PSCNI) were embedded in the surveys. Some survey questions were stand alone and others comprised a series of items that evaluated support programs. An example of this is the Pre-Entry Immersion Program (PIP), a structured orientation and preparatory program to prepare scholars for the accelerated pace of the nursing program. The survey contained questions about students' participation in the PIP and its helpfulness (Davis, DeWitty, & Millett, 2012).

The NCIN database included all data collected from 3506 students who received scholarships among the 3517 total students selected over the seven years of the project (11 unclaimed scholarships went back to RWJF). To ensure confidentiality, student and school identifiers had been previously anonymized. The surveys and code book were used to match database variables with components of Jeffreys's (2015) model (Table 1). All but one of the model components could be matched. There were no database variables for the component, outside surrounding factors (i.e. world, national or local events). Because the NCIN database did not include scholars' nursing grade point average (GPA) and course grades, which Jeffreys used to define the academic outcomes component, we instead used the items from the PSCNI to operationalize this component. The NCIN surveys were designed and used as a tool for program evaluation. Therefore, new survey questions were added over the seven years of the project and some survey questions were removed from various cohorts of data collection. Thus, some questions were not given to over half of the participants; however, for almost all variables studied, the sample is large.

Data analysis

Gender differences were assessed for model components by using *t*-tests or Wilcoxon rank-sum tests for continuous variables and Chi-square tests or Fisher's exact tests for categorical variables. The type I error rate was adjusted by considering a two-sided stepwise Bonferroni family-wise adjusted *p*-value < 0.05 (Holm, 1979) to be statistically significant (Westfall, Tobias, & Wolfinger, 2011). Families of tests were defined by each component of the Jeffreys's (2015) model studied. Missing data were inspected for their amounts and patterns. SAS v9.4 was used for all analyses (SAS Institute, Cary, NC).

Results

Of the 3506 NCIN scholars, three skipped the question about gender and one had unknown gender. Therefore, the remaining 3502 scholars comprise the analysis sample for this study, where 2218 (60.8%) were female and 1374 (39.2%) were male.

Overall, more than three-fourths of the students (77%) were enrolled in an ABSN program and 23% in an AMSN program. The number of students per school ranged from 5 to 91 students among the 130 universities (*M* = 26.9 students, *SD* = 21.4). The distribution of students by geographical region was: South (31%), East (30%), Midwest (23%), and West (16%). The average scholar age was 28.9 years (*SD* = 6.9; *range* = [17, 61]), and the race/ethnicity breakdown was 36% White, 28% African American, 14% Hispanic, 11% Asian, 8% multiracial, and 3% reported "other" race/ethnicity. Approximately 47% were considered as having a disadvantaged socioeconomic status, 23% were not, and data were not available for the remaining 30%.

Table 2 summarizes the variables found to be significantly different based on gender.

Research objective 1: descriptive factors

Among the significant *student profile characteristics* at program entry, 25% of females indicated plans to seek the AMSN relative to 20% of

Table 2
Components of Jeffreys's Model (adapted) and matched New Careers in Nursing (NCIN) variables with statistically significant gender differences.^a

Component	Variable (n)	Stp. Bon. Adj. <i>P</i>
Student profile characteristics	• ABSN vs. AMSN sought at program entry (3502)	• 0.0060
	• Age at start of program (3376)	• 0.0012
	• Race/ethnicity (3483)	• 0.0012
	• Marital status at program entry (3380)	• 0.0012
	• English as first language (585)	• 0.0124
	• Field of previous bachelor's degree (3322)	• 0.0012
	• Time interval since first degree (3389)	• 0.0012
	• Career before nursing school (2077)	• 0.0012
	• Disadvantaged socioeconomic status (2664)	• 0.0012
	Student affective factors	• Reasons to pursue degree (2082)
• Finance concerns to complete program (1190)		• 0.0006
• Time management concerns (1188)		• 0.0168
• Family concerns (1187)		• 0.0022
• Pace of program concerns (1186)		• 0.0006
• Academic performance concerns (1183)		• 0.0006
Academic factors		• LASSI inventory helpfulness (1388)
	• LASSI modules helpfulness (1308)	• 0.0004
Professional integration factors	• Participating in: <ul style="list-style-type: none"> ◦ basic mathematical calculations (1801) 	• 0.0234
	• Helpfulness of: <ul style="list-style-type: none"> ◦ basic mathematical calculations (1081) 	• 0.0168
	◦ learning about and adjusting to intensity of program (1769)	• 0.0129
	◦ study skills (1661)	• 0.0048
	◦ time management (1684)	• 0.0088
	◦ mentoring program (and opportunities) (1507)	• 0.0200
	◦ self-care strategies (1605)	• 0.0168
	◦ presentation of counseling services (1450)	• 0.0048
	◦ test success (1434)	• 0.0048
	• Participation in student nursing association activities (national, state or school) (1731)	• 0.0048
Environmental factors	• Remaining loan amounts from previous degree at program entry (866)	• 0.0016
	• Importance of ____ in ability to complete program: <ul style="list-style-type: none"> ◦ financial support (1923) 	• 0.0016
	◦ family support, non-financial (1922)	• 0.0016
	◦ career guidance (1917)	• 0.0016
	◦ mentoring/advising (1922)	• 0.0016
	◦ social and peer support (1919)	• 0.0016
	◦ academic support services (1922)	• 0.0016
	◦ program quality (1918)	• 0.0016
	• Competent leadership (1605)	• 0.0280
	• NCIN scholarship being a deciding factor to enroll in nursing (1309)	• 0.0360
Academic outcomes	• Months to secure employment (849)	• 0.0450
	• RN practice area (825)	• 0.0027
Psychological outcomes	• Would choose nursing career again if starting over (968)	• 0.0078

^a Note. ABSN = accelerated bachelor's of science in nursing. AMSN = accelerated master's of science in nursing. LASSI = Learning and Study Skills Inventory. RN = registered nurse. Stp. Bon. Adj. = Stepwise Bonferroni Adjustment, multiplicity adjustment for variables within each component (i.e., adjusted *p*-value < 0.05; Holm, 1979).

males (*p* = 0.0060). Males were slightly but significantly older on average (*M* = 30.2 years, *SD* = 7.4, *Median* = 28.0) relative to females (*M* = 28.1 years, *SD* = 6.4, *Median* = 26.0) at program entry

($p = 0.0012$). Females were proportionately more African American (37% vs. 13%), Hispanic (18% vs. 9%), Asian (13% relative to 7% of males), and multiracial (10% vs. 5%) (overall $p = 0.0012$). Sixty-three percent of males were White relative to 18% of females.

Scholars were also significantly different by marital status: 35% of men were married at program entry compared to only 23% of women ($p = 0.0012$). Among those with available data, proportionately fewer female scholars reported English as their first language versus males (80% vs. 90%, $p = 0.0124$). A higher percentage of females (50%) were considered as having a disadvantaged socioeconomic status relative to males (43%, $p = 0.0012$).

Previous degree experiences and career before nursing school were significantly different between female and male scholars. Females were more likely to have earned previous bachelor's degrees in the physical sciences (28% vs. 26%), behavioral sciences (19% vs. 14%), and health sciences (12% vs. 10%) (overall $p = 0.0012$). Men had earned proportionately more bachelor's degrees in liberal arts (14% vs. 10%), business (11% vs. 7%) and other fields (17% vs. 15%). Women were more likely to enroll in nursing within 5 years of earning their first degree ($F = 69\%$ vs. $M = 59\%$), whereas enrollment after 6 or more years was more common for male scholars (37%) than female scholars (28%) ($p = 0.0012$). While one-third of all NCIN scholars had previously worked in fields where they helped other people (e.g. health-care assistant roles and protective services), 15% of the male scholars had worked in fields that do not include supporting or assisting others (e.g. trades) compared to only 8% of females ($p = 0.0012$).

Student affective factors were defined by Jeffreys (2015) as attitudes, values, and beliefs about learning. To evaluate this component in the adapted model we analyzed scholars' reasons for pursuing a nursing degree and their concerns about factors that might affect their ability to complete the degree. The most frequently given top reasons that scholars chose to pursue nursing were a desire to help others, features of nursing as a job (e.g. job availability, economic security, and flexible career path), personal career benefits (e.g. seeking career change, advancement), knowledge about the work of a nurse, and time frame of accelerated program. There were significant differences based on gender ($p = 0.0006$): female scholars rated the desire to help others significantly higher than males (40% vs. 36%), and male scholars were more likely to focus on features of nursing as a job than were females (10% vs. 7%). Career benefits, knowledge about nurses' work, and program time frame did not differ by gender. Female scholars were more likely to be very or extremely concerned than were males about effects of the following factors on their ability to complete the nursing program: financial issues (17% vs. 14%, $p = 0.0006$), time management (9% vs. 7%, $p = 0.0168$), family (7% vs. 4%, $p = 0.0022$), pace of the program (10% vs. 8%, $p = 0.0006$), and academic performance (10% vs. 6%, $p = 0.0006$).

Jeffreys (2015) described *academic factors* primarily as personal academic behaviors such as study hours, attendance, and use of academic support services. At entry into the program NCIN scholars completed the Learning and Study Strategies Inventory (LASSI) (<http://www.hhpublishing.com/assessments/lassi/>), which is designed to identify learners' awareness of and use of study skills. Instructional modules are available that enhance students' ability to utilize specific study skills. Comparison by gender of the perceived helpfulness of the LASSI assessment revealed that many students found it helpful, yet those who rated it extremely helpful were significantly more likely to be female than male (17% vs. 14%, $p = 0.0004$). Similar results were found for the LASSI instructional modules: extremely helpful (16% of females vs. 12% of males, $p = 0.0004$).

Database variables about student support programs were matched with the *professional integration factors* component in the adapted Jeffreys (2015) model, defined as factors that enhance students' interaction with the college and professional environment. Beginning with the third year of the NCIN program, all schools offered a Pre-Entry Immersion Program (PIP) to prepare students for the pressures of an

accelerated program (Davis et al., 2012). Men and women were comparable in their participation in all but one element of PIP: male scholars were more likely than female scholars to participate in the review of basic mathematical calculations (33% vs. 27%, $p = 0.0234$). Scholars generally rated PIP activities favorably, but females were more likely to rate seven PIP components as extremely helpful when compared to the male scholars: learning about/adjusting to the intensity of an accelerated program (28% vs. 25%, $p = 0.0129$), study skills (21% vs. 17%, $p = 0.0048$), time management skills (23% vs. 19%, $p = 0.0088$), the mentoring program and opportunities (22% vs. 19%, $p = 0.0200$), self-care strategies (20% vs. 18%, $p = 0.0168$), and test success strategies (22% vs. 18%, $p = 0.0048$). The difference in the helpfulness of the presentation on counseling services was statistically significant ($p = 0.0048$), but close proportionately (20% females vs. 19% males).

Professional integration factors also included participation in activities that would help develop scholars' leadership abilities, an emphasis of the NCIN program. The survey asked scholars to indicate their participation (yes or no) in six types of leadership activities. Scholars were more likely to participate in the leadership activities developed for them (30%) and in student nursing association activities (national, state or school, 18%) than in a healthcare-related group in the community (16%) or on campus (11%), in a student or faculty committee (11%), or in a clinical specialty nursing association (6%). Only one leadership development activity differed significantly between male (15%) and female (21%) scholars: participation in student nursing association activities ($p = 0.0048$). Both males and females found the PIP leadership component helpful or extremely helpful (33%).

Several *environmental factors* (i.e. factors external to the academic process [Jeffreys, 2015]) were significantly different between male and female scholars. Approximately one-fourth of the scholars were surveyed about the amount of school debt remaining from their prior degree. The majority entered the accelerated program with debt; in fact, a small percent of each gender reported having \$50,000 or more school debt (4% of women and 3% of men). The only significant difference between them was at the lowest levels of remaining debt. Here, 4% of females and 7% of males had less than \$5000 remaining debt ($p = 0.0016$). Approximately one-quarter of the scholars were employed while enrolled in nursing, but there was no significant difference based on gender.

There were several gender differences pertaining to environmental factors that scholars rated as having important or very important effects on their ability to complete the nursing program. Financial support was more likely rated as important/very important by female scholars (54%) than male scholars (48%) ($p = 0.0016$) in their ability to complete the nursing program. Similar differences were found for the importance of family support (48% vs. 39%, $p = 0.0016$), career guidance (43% vs. 33%, $p = 0.0016$), mentoring/advising (39% vs. 29%, $p = 0.0016$), social and peer support (39% vs. 33%, $p = 0.0016$), support services (27% vs. 17%, $p = 0.0016$), and program quality (50% vs. 43%, $p = 0.0016$) for program completion. There was no difference in the percent of male and female scholars who reported that the gender representation among the nursing faculty was inadequate, respectively 11% and 10% ($p < 0.100$).

Research objective 2: outcomes

Academic outcomes were defined by Jeffreys (2015) as GPA, course grades, and clinical grades. These outcomes were not available in the NCIN database, so we used the scholars' end-of-program self-reported ratings of nursing skills (pride in skills, perceived competence, ability to grasp, apply and perform essential nursing skills) and leadership skills (competence, efficient, work with others, decision-maker, rather not lead) (Arthur, 1995). We chose these variables as academic outcomes because nursing curricula and specific components of the NCIN program aim to prepare graduates to apply patient care and leadership

skills competently. Students rated themselves high on these skills, but only one was significantly different between male and female scholars: proportionately more male scholars agreed that they were competent leaders relative to female scholars (22% vs. 20%, $p = 0.0280$).

Jeffreys (2015) defined *psychological outcomes* as satisfaction and stress. NCIN scholars were asked to indicate their perceptions of and satisfaction with an array of program elements including the NCIN scholarship, support programs, leadership development activities, mentorship activities, preparation for the nursing career, and their academic program. Scholars' perceptions were generally positive with only one factor showing a significant gender difference: the NCIN scholarship as a deciding factor to enroll in nursing was significantly different among female (6% strongly disagreed) and male scholars (9% strongly disagreed) ($p = 0.0360$). Scholar's satisfaction with the wide array of leadership development activities did not differ based on gender (all $p < 0.100$).

When the database was made available for analysis, 88.9% of the enrolled scholars had graduated, 7.0% had withdrawn, and 4.1% were still enrolled; there were no gender differences in the program completion statistics. We identified several *NCIN program outcomes* in the database. Four of these were found to differ based on gender. It took males slightly fewer months to secure employment after graduation than females ($M = 2.1$ months, $SD = 1.5$ vs. $M = 2.4$, $SD = 1.8$; $p = 0.0450$). Male graduates' practice area was significantly different from females' ($p = 0.0027$), most notably in critical care (14% for males vs. 8% for females) and maternal-child health (< 1% for males vs. 3% for females). Males were less likely to answer "absolutely" when asked if they would choose a nursing career again if starting over (19% vs. 22% for females, $p = 0.0078$). Finally, there were marginally statistically significant differences between genders ($0.05 \leq p \leq 0.10$) in degree earned at program exit ($p = 0.0760$) and perception that nursing is a rewarding career ($p = 0.0648$). There were no gender-based differences in other *NCIN outcomes*: passing the NCLEX-RN examination, RN job satisfaction, intent to pursue additional nursing degrees, and career aspirations. Nearly 40% of the scholars planned to pursue an advanced practice role, 25% a faculty role, and 20% an administrative role (not mutually exclusive), with no differences based on gender.

Discussion

The NCIN database may provide the largest pool of data ever collected from male nursing students. Thus, even though some of the gender differences we found are small, they represent hundreds of students. Findings from studies using large national databases such as this provide information that is more reliable than findings from the small, single-site studies that are usually conducted in nursing education.

We found statistically significant gender differences in all components of the adapted Jeffreys (2015) model: student profile characteristics, student affective factors, academic factors, professional integration factors, environmental factors, academic outcomes, and psychological outcomes, as well as in *NCIN program outcomes*. Males were significantly more likely to be White, less socioeconomically disadvantaged, and more likely to have English as the first language than were females. This was not unexpected, because to qualify for the NCIN program, females had to possess sociodemographic characteristics that deemed them as minorities in nursing programs, including racial and ethnic diversity (often accompanied by language diversity) and low socioeconomic status. Males, by virtue of their gender alone, are considered minorities in nursing, meeting the NCIN qualifications. This is consistent with Munnich and Wozniak's (2017) study of why men enter nursing, using US Census and annual American Community Survey data from 1972 to 2013, which showed that regardless of type of nursing degree sought, White males are more likely to enter nursing than Black, Asian, and Hispanic males.

A constellation of factors suggest that male scholars chose nursing

not only because of an interest in helping others, but because of high employability, job security, and career advancement opportunities. A larger proportion of them came to nursing from work fields that do not involve assisting or supporting others. A qualitative study of male nurses noted that men did not initially think of nursing as a career choice but chose it because they either knew someone who was a nurse or had an experience with the health care system that raised their interest (Rajacich, Kane, Williston, & Cameron, 2013). Gati, Givon, and Osipow (1995) studied career preferences of males and females in general and reported that both groups identify aspects of various career choices similarly, but their decisions may reflect subtle differences in how these aspects are interpreted. For example, males may evaluate advancement opportunities of a career *vis a vis* their ability to meet the often-presumed male role in the family – financial provider, whereas females may evaluate advancement opportunities in regard to their ability to combine work and family responsibilities. Compared to females, more male scholars chose ABSN over AMSN, knowing they would be able to enter the RN job market sooner. Furthermore, males were employed more quickly after program completion than females. These patterns may be influenced by the older mean age of the males and that they were more likely to be married than female NCIN scholars.

Male NCIN scholars showed less concern than female scholars about financial matters, time management, family, pace of the program, and academic performance. This finding is unique to our study, for Smith (2006) reported that males found the most challenging aspects of the nursing program as the academic demands, balancing family with schoolwork, paying tuition, and balancing work with schoolwork. Possibly for the NCIN scholars, the predominant aim was to finish and enter the job market as quickly as possible, so less attention was given to worrying about these affective factors. Indeed, in an earlier study job security was shown to be an important reason for males to choose nursing (Meadus & Twomey, 2011). The lower concern by male NCIN scholars about financial matters may be because fewer males than females were socioeconomically disadvantaged. Another possible explanation may relate to their marital status. More male scholars were married, thus more likely to be living in dual income households. Also, because they were older they may have had higher salary levels previously. These factors could mean they had more assets as a safety net. Males' lower levels of concern may also reflect gender-related differences in academic self-efficacy. Choi's (2004) meta-analysis of academic self-efficacy based on sex role differences (masculine, androgynous, feminine, or undifferentiated) showed that masculine and androgynous groups had significantly higher academic self-efficacy than feminine and undifferentiated groups.

Many of the differences we found between genders showed statistical significance, but the actual differences were small, which may temper the practical significance. The exception to this is in the Jeffreys (2015) model component of environmental factors, which includes financial support, family support, career guidance, mentoring/advising, social and peer support, support services, and program quality. These factors were more often viewed as important by females than by males, with differences ranging between 6 and 10%. These findings are consistent with earlier studies which have shown that the nursing student role presents different socialization challenges to males than to females (Abushaikha, Mahadeen, AbdelKader, & Nabolsi, 2014; Dyck et al., 2009; Kronsberg, Bouret, & Brett, 2018; Stott, 2004). Hodges et al. (2017) suggested that support services geared towards the experiences and needs of male students can be helpful in retaining them in nursing.

Males supported through the NCIN program sought positions in critical care settings more often than women and were less likely to be employed in maternal-child health units. This is consistent with a Bernard Hodes Group (2005) study that showed that 50% of male nurses worked in either critical care or emergency nursing. Studies of nursing students have shown that males often feel uncomfortable in maternal-child health settings (Patterson & Morin, 2002), and some

males have reported having curtailed maternity nursing experiences (Kronsberg et al., 2018), perhaps due to fear that the necessary intimate touch in these settings may be viewed as sexually inappropriate (O'Lynn & Krautscheid, 2014).

We did not find gender differences in career aspirations or intent to pursue additional nursing education. Studies of male nurses have shown that career stability with opportunities for advancement is important for them (Bernard Hodes Group, 2005; Meadus & Twomey, 2007).

Male and female NCIN scholars' participation and satisfaction with leadership development activities were generally comparable. A meaningful proportion of male and female scholars alike aspired to one or more leadership roles: advanced practice (40%), faculty (23%), and nursing/health administration (21%) roles. Despite generally comparable participation and satisfaction with the leadership training opportunities, male scholars were more likely to rate themselves as competent leaders than female scholars. In a study of freshmen nursing students, males were more likely to agree with statement, "I think I can become a leader in this field," than were females (Zysberg & Berry, 2005). Early indicators of self-perceived leadership competence, despite similar leadership development opportunities and satisfaction with them, and similar leadership aspirations, suggests that males in nursing have an image of themselves as leaders earlier than females in nursing, as indicated in earlier work (Zysberg & Berry, 2005). If the glass escalator effect begins for males when they are nursing students, they may already be experiencing the encouragement of female student peers or faculty to consider leadership roles.

Of those scholars for whom data were available, the NCLEX-RN cumulative pass rate was 96% (first time pass rate not available in the database) and there was no difference based on gender. This finding is similar to another study of NCIN accelerated master's scholars, with a 92% NCLEX-RN pass rate (Cowan, Weeks, & Wicks, 2015). According to the National Council of State Boards of Nursing (2018), the first-time pass rate (US educated) for 2017 was 87.11%, and the overall pass rate (including repeaters and foreign-educated testers) was 72.11%. Only one study was located comparing male and female NCLEX-RN pass rates; gender was not found to be significant ($p = 0.06$) (Haas, Nugent, & Rule, 2004).

Limitations

From 2008 to 2015 there were 28 cohorts of data collection. Due to privacy restrictions, we were unable to control for serial effects of round. The sample size of those who received all questions prevented us from investigating gender differences using Jeffreys's NURS model with more complex analyses (e.g. structural equation modeling). Because the NCIN program did not include a comparison group as part of the project design, current findings cannot be directly compared to accelerated degree nursing students who did not receive the NCIN scholarship. Furthermore, post-completion data were collected from NCIN scholars only once, within six months of graduation, so only early outcomes could be analyzed. Finally, caution must be taken when considering our findings relative to AMSN students alone.

Recommendations

Our findings, within the context of other literature on the challenges for men who enroll in nursing, suggest the need for continued research. First, studies aimed at better understanding of the subtle differences in how males and females weigh nursing as a career may be helpful to develop marketing messages about nursing that will have more resonance for males and help capture the interest of men seeking a career change, especially that accelerated nursing programs appear to be attractive to men. Additional research is needed to understand the nuanced difference in perceptions of male and female students about the helpfulness of programs such as career guidance, mentoring/

advising, and support services. The male voice is required to determine what services are desired and how to design them to address their needs.

Many NCIN scholars (male and female alike) noted the low number of nursing faculty who are male, affirming an already recognized need for more gender diversity among faculty ranks. Current faculty recruitment strategies aimed at more gender diversity can be supplemented by collaborating with practice partners to identify males among their staff who can serve as role models, guest lecturers, preceptors, and mentors. Setting definitive numeric goals for such efforts may be needed. Men enrolled in nursing programs should be introduced to the American Association for Men in Nursing, another means of interacting with male role models. When female and male students alike interact with a more gender-diverse nursing faculty and other role models, gender-based stereotypes, bias, and language is more likely to abate.

A related need is for faculty development. The perceptions of men about subtle discrimination, biases, feelings of isolation, and 'feminized' curriculum and instructional approaches have been reported in anecdotal and small sample studies for at least two decades. Yet, significant change has not occurred. Nursing faculty, being predominantly female, may not recognize these subtleties and instead may minimize (or "nursesplain") the concerns voiced by men studying nursing. Faculty development that builds on the accumulated evidence from a growing body of research is needed at local and national levels.

Finally, it is important for research to be guided by theory. We chose to adapt the Jeffreys NURS model to guide our analysis and were able to identify data in the multi-site, longitudinal NCIN database to address all model components except one, thereby lending conceptual validity to the model. Future research designed with the Jeffreys model in mind is recommended.

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