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Abstract:
There is a world-wide shortage of nursing faculty, which is complicated by the need for French, English, and bilingual professors in Canada. The purpose of this qualitative study was to explore the current status and effects of the nursing faculty shortage on Canadian Schools of Nursing (SON) from a leadership perspective. We conducted semi-structured interviews with 12 Deans and Directors of Canadian Schools of Nursing. The participants spoke about the faculty shortage in terms of demand, supply, and strategies employed. The participants were concerned about the ramifications of some of the decisions deemed necessary for continued viability of their programs, such as over-assigning teaching workloads. In light of mass upcoming retirements, shortening the time to completion for PhD studies and making graduate education more accessible are important priorities.

In nursing, there is a shortage of qualified faculty to educate the next generation of nurses (American Association of Colleges of Nursing (AACN), 2012; Canadian Association of Schools of Nursing [CASN], 2014; McDermid et al., 2012). This faculty shortage is contributing to the overall global deficit of professional nurses available to work in healthcare settings (Gerolamo et al., 2014; World Health Organization (WHO), 2006). Convention dictates that a doctoral degree (PhD) is the necessary preparation for academic employment (Jackson et al., 2011). In the Canadian context, there is an insufficient number of nurses completing PhDs to fill existing vacancies, and an aging academic workforce is further perpetuating the faculty shortage (Canadian Association of Schools of Nursing [CASN], 2016; Fang, Bednash & Arietti, 2016; McDermid et al., 2012; Potempa, Redman & Anderson, 2008). With 60 % of Canadian nursing professors reported to be over the age of 55 (Canadian Association of Schools of Nursing [CASN], 2014), unoccupied faculty positions are expected to grow exponentially in the next several years. Moreover, many nurses currently enrolled in doctoral programs are already employed in faculty positions and do not contribute to the pool of new candidates upon graduation (Canadian Association of Schools of Nursing [CASN], 2014; Fang, Bednash & Arietti, 2016). Major reported barriers to attaining a PhD in nursing include time and finances (McDermid et al., 2012). In contrast to many other disciplines, nursing professors are also expected to gain clinical expertise before entering academia (Fang, Bednash & Arietti, 2016). With clinical nurses paid competitively compared to academic nurses, incentive to leave professional practice to enroll in higher education is limited (Canadian Association of Schools of Nursing [CASN], 2014; Jackson et al., 2011; McDermid et al., 2012).

Faculty vacancies increase workload demands on existing professors (Gerolamo & Roemer, 2011), which leads to lower job satisfaction, less time for advancing the science of nursing through scholarship (Potempa, Redman & Anderson, 2008), and lower retention rates (Kaufman, 2007). Several strategies aimed at increasing the number of nurses entering academia and retaining nurses already in faculty positions are emerging in the literature. Specifically, recruitment strategies include targeted recruitment funding, faculty preparation programs that include generous grants and stipends, socialization to the faculty role, and formal courses (Gerolamo et al., 2014; Kathleen & Chai, 2015). Retention strategies include the introduction of phased retirement, succession planning, mentoring of new and existing faculty, and actively pursuing and hiring early career (i. e. younger) nurses into academia (Vogelsang, 2014).

In addition to recruitment and retention strategies, adaptations to existing educational structures are occurring to minimize the effects of insufficient nursing faculty. These include creating partnerships between universities and colleges or universities and the healthcare sector, implementing innovative delivery methods for nursing curricula (distance and online programs), supplementing nursing faculty with faculty from other disciplines, and circumventing existing regulations to meet teaching needs. In some cases, these adaptations

include over-assigning workloads and modifying qualifications required for certain teaching roles (Allan & Aldebron, 2008; Feldman et al., 2015; Potempa, Redman & Landstron, 2009; Vogelsang, 2014). To date, the effectiveness of these adaptations is unknown and the appropriateness of strategies used in particular contexts has not been examined.

While some research describes the experiences of nurses embarking on PhDs and seeking faculty positions (Halter, Kleiner & Hess, 2006; Jackson et al., 2011; Schriner, 2007), less is known about what it is like to work amidst the faculty shortage from a leadership perspective. With the majority of available literature coming from the United States, it is important to explore the faculty shortage from a Canadian perspective. Recruitment of professors in Canada is complicated by the need for Francophone, Anglophone, and bilingual academics. The purpose of this study was, therefore, to explore how Deans and Directors of Canadian University Schools of Nursing describe and work within the context of the faculty shortage. This study is focused on universities, because though many colleges in Canada offer nursing programs, most require a collaborating university who is the degree grantor.

The research question was: How do Deans and Directors of Canadian Schools of Nursing (SON) describe and work within the context of the faculty shortage? There were two primary objectives: (1) To describe the overall experiences of the faculty shortage in schools of nursing and (2) to identify strategies used by leaders of Canadian SON to mitigate the effects of the faculty shortage.

Methods

Study design

This study utilized a qualitative descriptive study design (Sandelowski, 2000), and was conducted from the post-positivist lens. Our knowledge of this topic, based on literature and experience, informed the interview questions and provided a rudimentary framework for data analysis. Specifically, we sought to elaborate upon the overall experiences identified by nursing administrators, elements of supply, demand, and strategies in the findings. Using qualitative methods allowed us to describe the phenomenon of interest, as it naturally occurred, through the voices of the participants. A sister study is underway, which is focused exclusively on the Francophone perspective of the nursing faculty shortage in Canada.

Situating the investigators

The co-principal investigators for this project hold tenure-track, Assistant Professor positions in a Canadian university offering both French and English language nursing programs. Given the nature of qualitative research and the role of the researcher in the co-creation of the findings, we opted to exclude our institution's Director from the pool of potential participants. The two of us are relatively new professors who were hired (by the former Director) into the faculty during the beginning stages of the shortage, and as such, we felt it would be impossible for our Director to provide an authentic recount of her experiences.

Sampling and recruitment

Twelve English or French speaking Deans or Directors of Canadian university nursing programs were purposefully recruited in collaboration with the Canadian Association of Schools of Nursing (CASN). We presented the proposed study at the CASN Council meeting in November 2015 to attendees, which included Deans and Directors of SON from across Canada. Following this, we sent an email invitation letter including information on the study to a set of geographically diverse Deans and Directors, who were selected in consultation with CASN. The participants represented all nine Canadian provinces in which university level nursing programs are offered. Only college level programs are available in Nunavut, Yukon, and the Northwest Territories and thus schools in these regions were not included in the study. Furthermore, the sample was representative from a linguistic perspective, with both English and French nursing programs included.

Data collection

Data were collected using semi-structured, audio-recorded telephone interviews scheduled at the convenience of the participants. By engaging in peer-like discussions, we asked participants open-ended questions, probed

for stories, anecdotes, and examples, and encouraged them to speak freely about their views of the faculty shortage and the effects of this on their SON (Lincoln & Guba, 1985). The interviews lasted an average of 60 minutes and we periodically recorded field notes to document overall thoughts, feelings, and impressions of the interviews. Research team members transcribed the audio recordings verbatim and all identifying information was removed. The preliminary findings were presented at the CASN Council Meeting in November 2016. At this time, participants were encouraged to contact the investigators regarding the findings if they felt modifications or revisions were necessary. We received no such requests.

Data analysis

Data were analyzed using the constant comparison method (Glaser & Strauss, 1967), which is appropriate for Qualitative Description (Sandelowski, 2000). Three research team members were responsible for data analysis. First, two team members independently coded the first two transcripts and a third team member, who was familiar with both transcripts, helped to ensure consistency in the coding process. This step allowed for the creation of an agreed upon coding structure including emerging categories, focused on the overall experiences of the faculty shortage and strategies employed, which was applied to the subsequent round of coding. Next, all three team members independently coded the next three transcripts. During this process, we modified the coding structure to accommodate new data that did not fit within the existing categories and kept an audit trail of all decisions made (Glaser & Strauss, 1967). This ensured that the categories remained internally homogenous (grouped codes were aggregated appropriately) and externally heterogeneous (mutually exclusive). Data analysis continued in this manner until all transcripts were coded, with team meetings held after each round of coding (i. e. after we analyzed each set of three transcripts). All research team members agreed upon the final construction.

Trustworthiness

We followed Lincoln and Guba's (Guba & Lincoln, 1994; Lincoln & Guba, 1985) five criteria of trustworthiness: a) credibility, b) dependability, c) confirmability, d) transferability, and e) authenticity, to support rigour of this study. The research team was comprised of individuals with expertise in qualitative research and nursing education from both Anglophone and Francophone perspectives. With all team members partaking in data analysis, we were able to challenge assumptions of individual researchers and ensure that the findings remained grounded in the participants' experiences. Furthermore, we provided a thick description of the context and experiences of the participants and included direct quotes to support each category. Quotes obtained through interviews with French-speaking participants were translated to English by a bilingual research team member and verified by the co-PIs, who are fluently bilingual.

Ethics

The research ethics board at the authors' university approved this study (File H10-15-21). Informed consent was obtained from each participant in this study.

Findings

Of the 12 Canadian universities included in this study, five had Faculties of Nursing led by a Dean and seven had SON led by a Director. All universities provided an undergraduate nursing program, 11 universities offered at least one master's of nursing program, and seven offered a doctoral degree in nursing. The universities were located in cities of diverse density, with populations ranging from approximately 60,000 inhabitants to 2.5 million inhabitants. At the time of the writing of this manuscript, there were 44 tenure-track positions posted online in SON across Canada, with 15 of these originating in our participants' home institutions. According to our participants, the actual number of open positions at their institutions was closer to 30 (posted and in process of posting) and an additional 60 positions were anticipated to be vacant within the next five years due to retirement alone. The participants spoke about the faculty shortage in terms of demand and supply of qualified professors, as well as strategies to fill vacancies and mitigate the effects of the shortage (Table 1).

Table 1: Participant quotes supporting the findings – by category.

Demand – Participant Quotes

"And it's a problem, because if you've got 25, or 30, or 40, or as much as 50 % of your clinical instructors are turning over every year, you end up spending a lot of time orienting people and everything else. But a lot of your accumulated wisdom around what works in those courses is walking out the door every year" (1).

"And the goal of the professor in the teaching track is to provide that continuity so again, their teaching time would be 80 %, with 20 % service similar to the lecturer, but the other expectation for tenure and for advancement promotion to professor is that they are providing leadership and educational scholarships. So, it's educational leadership". (6)

"The other thing that's a real problem, I think for us, is Deans and Directors, because people don't really choose to go into these roles. They're often tapped on the shoulder and pleaded with. We're not making those roles very attractive in many ways, and the people who are good researchers just want to be left alone to do their research" (2).

"I don't know if it's the same elsewhere, but resources are going to be leaving us massively. Replacing one once in a while is easy, but I am not sure how to replace three, four, or five at a time" (7).

"And 10 of my faculty would qualify for retirement at age 65 and beyond" (3).

"So your first year of phased retirement, you teach eighty percent of the teaching load. The next year it's sixty percent. The year after that, it's forty percent. But the issue with that, and we have people who are on phased retirement, is that the university hasn't built in ways to replace them. So they're still a part of us, but we don't have all of them" (4).

"It's the twilight years of their career if they are tenured and they are not very productive. We're actually keeping people on our books and unable to budge them on, if you understand what I'm saying" (9).

"Our challenge with our faculty complement right now is that we have some really good young ones, and we have some fabulous oldsters, who are getting ready to retire, and we don't have a lot in between. So you know; that's something that we definitely need to keep our eye on and manage" (1).

Supply – Participant Quotes

"I think in Canada in general, we're not producing enough PhD qualified graduates. If you look at the data for the last several years, from CASN and CNA, we've been graduating 65–75 PhD's a year. We know that approximately 1/3 of those are already holding academic appointments in colleges or universities somewhere" (9).

"If we felt that we did not have the faculty, the supervisors, for doctoral students, then we would stop admitting them to the program" (12).

"I think it would be great if there would be an opportunity for more online technology enhanced course delivery, and allow people to continue to work and to study at the same time (…) we know that most people tend to be not twenty-two years old when starting things and have so many other obligations" (4).

"And there's lots of opportunities to collaborate. I think for some of these smaller universities that want to get into delivering PhD programming, they should contemplate more collaboration. We're a small academy in Canada. And for some reason we've embraced a competitive paradigm from the U.S." (1).

"I think there are always changes. I mean I think we're going to see more online overall in some areas. It was really interesting down at [American University], 500 master's students all online. I'm all for online at the Master's level, not for PhD. It's a research training degree. And you need to be immersed in your mentor, your supervisors program of research" (9).

"We've gotten rid of the requirement that somebody has to have two years of practice before they go to graduate school. We're moving them through. So if we see talent in the undergrad, we're moving them right through because we need more young people with PhDs" (2).

"Now in Australia, which follows the British system and the European system, in the curriculums for honors after doing your four-year degree, it's considered a fast-track into the PhD. We take the most brilliant and our best and we send them into an honors program, we support them, and we attach each of those honors students to the top professors" (5).

"Our PhD students come from all over the place, but people constantly have their eye on the top students. Where we have students that we can move directly from Master's entry to PhD completion, we look for opportunities to do that on a special case basis and that doesn't happen often, but one or two students a year" (9).

"Having our Master's and PhD students work as teaching assistants and help the faculty with classes. They're being mentored, they're getting an idea if they're getting a PhD and looking at academic positions, they have to have teaching experience" (6).

"The day she gets her PhD done, in fact the day she successfully defends her dissertation, she's automatically transferred into the tenure stream position" (12).

Strategies to Attract New Faculty and Fill Vacancies – Participant Quotes

"Ensuring we have an eye on where there are individuals who are local, who are qualified" (2).

"But we received no application at full professor level so I decided I don't want to keep those positions vacant, I want to fill them. So, then what we did was reposted it at the associate professor" (5).

"Yes, and I firmly think that nursing faculty are enhanced by having some individuals who are not nurses" (2).

"So, I don't know why in nursing, we have this, I call it the *nursey-side of nursing* that drives me crazy. We act like a bunch of old ladies, and you know, I think there is a lot of room for maybe five or maybe as much as 10 %, maybe even 15 % of your faculty to be non-nurses, depending on the size of your graduate program and how it's constituted" (1).

"I've got three non-nurses who are tenure-track, but I didn't hire them because I was desperate. I hired them because I felt they gave us a good different mix of skills around the table" (5).

"There was a time when recruitment was difficult, and these people are extremely well trained, so they are a great contribution to the faculty" (7).

"We had to, I would say, broaden our horizons. For example, we have patho and pharm courses. We have never been able to find someone with a PhD who was a nurse. We found someone who was a pharmacologist. So, we also get people from other fields, whenever possible" (8).

"There's room for everybody, so we need to be way more innovative and we need to be, I think, embracing some individuals to come in from other disciplines. Most of our research now, the big research opportunities, they're all interdisciplinary. They're not in individual disciplines anymore" (1).

"And in the process, I came to recognize that as a School we had never really had a discussion around whether or not we wanted to have a non-RN in our School. And so, we decided not to hire that individual and I do remember having a conversation the following year with my colleagues. There was absolutely no appetite" (3).

"I think it is quite serious. I do not think it is great. I think our discipline is a little bit in jeopardy. It is dangerous, for the knowledge development, and for our discipline. Because before sharing with others, we need to understand our identity, and we have to teach nursing to our students first, especially at the undergraduate level. At the undergraduate level, the discipline is very important. At a graduate level, we can be a lot more open, but we are training new nurses first and foremost at the undergraduate level, so we need a solid teaching replacement and it worries me" (7).

"There are some really brilliant folks that are coming in with backgrounds in Computer Science and Business and other things where they've just decided they want to do Nursing. To me, somebody who's got a PhD in another discipline and an undergrad in Nursing is perfectly qualified to be a Nursing faculty. We really have to think outside the box." (2)

"Our accrediting body has been quite opposed to the introduction of the DNP in Canada. But in terms of looking at faculty renewal, I think we'd be very remiss not to take another look at that" (2).

"I think it's fine to hire them [DNP] into non-tenure stream positions. But their degree is different from a PhD, a true pure PhD that is focused on research. And to have that degree and to be put into a tenure-stream position I think is just setting them up for failure. And, you know, to be a tenure-stream faculty you have to have a full program of research. There's a whole set of expectations that come with that that the DNP would never achieve" (3).

"We've had some very interesting students who have graduate degrees, including at least one PhD, doing the undergraduate degree. So, these are people that we should also be looking at for potential faculty" (2).

"It's getting the balance right. You absolutely want homegrown people. And then you need some people from away too, and you need to get that strategy sorted out" (1).

"And think about how wonderful it could be for your school if you had people who were Master's prepared and interested in doing a PhD and they could still continue to work at your School" (4).

"I was on faculty at [University] for 2 years when I finished my Master's because they hired Master's, don't have to have a PhD, and they were quite interested in me doing a PhD there. And I just thought, well, this doesn't make sense. I'm not going to be taught by my colleagues who I've worked with for two years. And then when I finish, I still do the same job that I'm in now? The whole thing just seems very weird to me. This practice" (3).

"Well, that's a word, incestuous, I would use. And also, it's like-thinking if you will. So, you know, you are educated into a school or a faculty that has a particular way of being, and, I think, if you don't stretch yourself and move beyond that, it can really be detrimental to the culture in the school. Creating change, being able to step back and take a look through a different lens, if you will. I think it potentially can be unhealthy" (3).

"And so, in the time that I've been at this university, I've been giving people relief time, we've paid their tuition and we've helped them get through their PhDs; and those individuals, I don't think, are ever going to be engaged in research. I don't see them being successful in a tenure-track competition" (2).

Strategies to Mitigate and Work Within the Faculty Shortage – Participant Quotes

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"So that's the other part as far as fiscal sustainability and program delivery models. We are taking a very close look at this, because it's just not sustainable" (6).

"Part of my reasoning for looking at a new curriculum was that faculty renewal was a concern. Are we being as effective and efficient with how we're using faculty? I didn't think we are. It's [new program] modeled to try to be more effective and more efficient, and I think it will cushion us" (2).

"I think we could get a lot further faster through meaningful collaboration, and, you know, we don't have to offer all our own courses either. Research methods is a good example. I've tried to advocate here forever on trying to have graduate research courses that are all interdisciplinary and are offered by the very best people we have across the health sciences. We all use one another's literature. Why we would teach research methods "a-la-nursing" is beyond me" (1).

"There are multiple sections of the same course and so faculty often have the advantage of teaching two or three sections of the same course, which isn't at all as difficult as having three separate unique courses" (4).

"There are other roles at community colleges that are, you know, PhD Nursing-prepared level as well, that they are having difficulties filling" (3).

"1/3 of those go to clinical leadership positions. So really, we only have about 20, 25 new PhD's per year across the country" (9).

"Some of these nurses want to keep their foot in clinical practice, and we want that to happen, so that's where I think there's maybe opportunities to partner in a better way with our health system colleagues, to co-create permanent positions that maybe afford opportunities on both sides of the fence" (1).

"I'm not taking my foot off that pedal. It was time for some culture change here, and to get that culture change we need to have a bit of turnover and we've brought in some different types of academic staff members, instructors. I've shuffled the deck on how workload is done, brought in team teaching so that people can be mentored; there's been a whole strategy around it." (5)

"And, you know, I will, if I have some people that I might be interviewing and then all of a sudden I don't have work for them, I encourage those individuals to go to my partner sites" (3).

Demand

The participants articulated staffing needs related to part-time faculty, full-time tenured and tenure-track faculty, and individuals assuming leadership and administrative roles. They also explained the immediate and long-term implications of age and retirement on their demand for qualified personnel.

In terms of part-time faculty, the participants described how they were "Struggling daily to get clinical faculty to teach and faculty are stretched to beyond limits with what they are handling right now" (6). The participants explained the expense associated with hiring part-time faculty and highlighted the implications of yearly turnover, which is common with this type of educator. In light of this, the participants explained how they were attempting to improve recruitment and retention of part-time employees. Strategies included partnered hiring models with healthcare organizations and ways to increase contract length and permanence. The main advantages articulated by the participants about part-time employees, were that they provided flexibility and covered teaching needs until tenure-track positions were filled.

The participants likewise described their need for more tenured and tenure-track professors: "Well, we feel that we're under-resourced. If I can make that point fairly clear, that we are sort of operating with what I would say is insufficient full-time faculty resources to contribute to all of our programming needs" (4). The sheer number of unfilled full-time faculty positions at many institutions was described as an obstacle, and leadership and administrative positions held particular challenges for the participants. As a result, the participants explained how these responsibilities were often assumed by faculty not formally sitting in administrative roles.

The participants spoke at length about being "in the midst of a retirement wave" (9) and the implications of an aging professoriate on their SON. Several participants stressed the large number of forthcoming retirements, their uncertainties around how to fill their impending vacancies, and the challenges they faced related to retirement. These challenges included the propensity of professors to assume part-time roles prior to full retirement and not having a mandated retirement age – participants noted how professors tended to prolong their careers into unproductive years.

Supply

The participants identified an overall deficit in the number of PhD prepared nurses available to work in academics. They spoke of a need to find ways to increase the number of enrollments in graduate nursing education and how graduate education might be affected by the faculty shortage. Participants also felt that graduate education should be more accessible and expressed the need for increased funding and better support for work-school-life balance, including increased flexibility for students. To accomplish this, they spoke about finding innovative program delivery methods, which included collaboration efforts and offering master's programs at a distance or online, though the participants were less supportive of offering off-campus PhD programs. The participants also explained the importance of shortening completion times, which involved creating opportunities for seamless programs (i. e. removing requirements that stipulate that a person must have practice experience prior to initiating graduate studies) and encouraging fast-tracking of students from master's entry to PhD completion. Some participants noted, however, that fast-tracking must be used cautiously and be reserved for the best candidates.

Finally, the participants indicated the importance of transitioning students (and others) to the professor role and explained how this process facilitates the success of newly hired faculty members. The participants reported providing PhD students with teaching experience through their graduate studies to improve their success in tenure-track employment competitions and also described formally hiring PhD candidates into tenure-track positions, supporting them during the completion of their degrees, and seamlessly transitioning them to full-

time professors once done. When new professors were hired, the participants explained the importance of being "Very protective the first year" (6) and offering support in terms of grant writing and mentorship.

Strategies - To attract new faculty and fill vacancies

The participants described strategies used to fill vacant positions. These strategies included targeted recruitment, casting a wide net, and growing your own.

Targeted recruitment was discussed in two ways, which included efforts to attract specific (or targeted) individuals and a flexible approach to hiring. At times, these strategies were applied together: "We had an open call, an advertisement, but we knew who we wanted. There was an opportunity to apply for outside, for other candidates, but we wanted to grab someone, so we were nimble" (9). To find qualified personnel, the participants explained how they believed in casting a wide net, that is hiring outside of the expected registered nurse with a PhD in nursing.

Many participants indicated that they currently have or believe in having professors on faculty who have no formal education in nursing. Some participants felt quite strongly about integrating these non-nurses into all SON and described their significant teaching and research contributions. Other participants offered rationales for why non-nurses were not hired at their institutions. Reservations related to this strategy included their inability to socialize students to the nursing profession and their lack of a nursing identity.

Overall, participants were supportive of hiring professors who are nurses, but who have a doctoral degree in a different discipline. This support was contingent on having a faculty that was comprised of a "majority with a preparation in nursing" (11). In fact, one participant described how "the ideal faculty member would have a Bachelor in Nursing, a Master's in Curriculum Development, and a PhD in Statistics" (12).

One participant indicated that there is a place on faculty for professors prepared through professional doctoral programs (DNP), rather than through a traditional PhD. This participant explained how some individuals might benefit from doing a DNP degree rather than a PhD, especially individuals who begin terminal degrees later in their careers. Most participants, however, voiced concerns about hiring DNP-prepared faculty and discussed the ramifications that this may have for scholarly activity: "They do not have the depth of research capability to transition between clinical research and scholarship of teaching and learning, so I worry that it could dilute, you know, the excellence that we've created with the PhD" (6).

Participants were divided in their views about growing their own faculty. Growing your own refers to hiring tenure-track professors who are doctoral graduates of the same university. Several participants were in support of this strategy and explained when it was appropriate to recruit their own students into faculty positions. Participants did, however, stress the importance of balance between home-grown and faculty educated elsewhere. One of the main advantages of growing your own faculty, identified by the participants, was that the individuals upgrading their education to a PhD were able to continue teaching while completing their doctoral studies. This advantage was also seen as a disadvantage by some participants because of the conflicting student-colleague dynamic. Participants who were against the grow your own approach to filling faculty positions explained their rationale for this view. Their reasons included like-mindedness in faculty, described by some as incestuous. One participant further recounted negative experiences with encouraging instructors to upgrade their education to a PhD. In her experience, the investment made in these individuals was not repaid in academic productivity.

Strategies - To mitigate and work within the faculty shortage

To mitigate the effects of the shortage and work within it, the participants described strategies such as adjusting workload and program delivery to meet needs and fostering competition and collaboration.

The participants discussed how the current delivery of their programs was not maintainable. To create more sustainable programs within the current academic context, the participants described program re-designs aimed at improving efficiency. This included shortening the length of some programs, decreasing the number of required courses, and collaborating with other schools or faculties on the delivery of courses. Participants also explained how adjusting professor workloads might help to offset some of the teaching burden assumed when vacancies exist. Overall, participants reported that a multipronged strategy is needed to continue to function.

When discussing hiring of future faculty members, participants spoke about competition. This competition was between universities, colleges and universities, and the healthcare sector and universities. In response to the competitive context, participants indicated that collaboration is necessary in the efforts to fill faculty positions. Collaboration included the creation of shared healthcare sector and university positions to allow individuals to work in academia and clinical practice as well as sharing professors with other faculties. Some participants also

explained how they developed relationships with their partner sites to help all institutions meet their needs. One participant organized and facilitated higher education for all of the partner college educators: "One of the things we did was we teleconferenced our master's program and the cohort of 10 or more did their masters of nursing with us. They were all faculty members that were out there" (12).

Discussion

In this study, we explored the experiences of Deans and Directors of Canadian SON as they work within the context of a faculty shortage. The participants were from 12 geographically and linguistically diverse universities. These academic leaders spoke about issues pertaining to demand and supply, and articulated strategies they employed in their institutions to mitigate the effects of the shortage. The participants projected mass retirements in their universities, spoke of the imminent need for more PhD graduates, and the resulting effects on clinical excellence in new faculty and the delivery of PhD programs. The participants also discussed several strategies including targeted recruitment, casting a wide net, growing your own, adjusting workload and program delivery to meet needs, and fostering competition and collaboration. While there were some areas of consensus, such as the desire to hire nurses with doctoral degrees in other disciplines and the necessity of part-time instructors to meet teaching needs, non-traditional academic preparation through DNP programs, the prolific use of part-time educators in the delivery of nursing courses, and the implications of increasing workloads on research and other scholarly activities warrant further discussion.

Implications of mass retirement

The participants projected approximately 60 new faculty vacancies across their institutions in the next five years because of retirements. Should this estimate be realized, and extrapolating to other institutions, the consequences will be devastating to nursing as a whole. Not only do Canadian universities not graduate enough PhD-prepared nurses yearly to meet national demands, as professors retire, capacity to educate and mentor future professors will diminish. The participants were unclear about how to best transition professors into retirement and many were looking for concrete suggestions on how to utilize their human resources for as long as is feasible and productive.

Some participants hoped that professors would continue to work past typical retirement age; however, they found the haphazard way in which retired professors assume part-time duties to be challenging. While phasing into retirement may be desirable for the individual faculty member, accommodating decreased teaching loads and the short duration of contracts was problematic for our participants. It might benefit university administrators to consider creating longer-term teaching contracts for emeritus professors who are interested in continuing in a part-time capacity. Not only would this solution offer these professors a greater sense of being valued, it might also encourage retention and greater teaching consistency (Foxall et al., 2009).

Clinical excellence in professors

In response to the aging professoriate, participants emphasized the need to foster earlier entry into graduate education and PhD programs. This included recruiting students with little to no professional experience. Advantages of early enrolment in doctoral programs include students who are already in 'school-mode', not yet used to earning a salary, and finish doctoral studies before increasing adult responsibilities take hold in their lives. Disadvantages include graduate students who have not yet been socialized into the profession and have not spent enough time in practice to determine their interests and skills prior to committing to a line of enquiry (Penn, Wilson & Rosseter, 2008). The views on requisite clinical competence to underpin academic and research pursuits are conflicting, with some authors reporting that clinical expertise in nursing educators in necessary for effective learning (Leonard, McCutcheon & Rogers, 2016). The need to work in practice long enough to develop clinical excellence prior to pursuing advanced degrees is in direct conflict with the desire to enroll younger, newly registered nurses into graduate education, as expressed by our participants.

The importance of exposing nursing students to experts in the clinical practice areas taught in theory cannot be denied. Anecdotally, the students at our university report the advantages of learning in classroom from someone who understands current practice and can provide real examples to illustrate simple and complex concepts. As nursing leaders move towards recruiting younger, less clinically-experienced nurses into faculty positions, the importance of sound clinical placements for students increases and educators will need to find

innovative ways to effectively bridge theory and practice. Furthermore, increased collaboration between health-care settings and academic institutions will be required to ensure relevance of research to practice.

Online doctoral education

The participants of this study spoke at length about the role of online or distance education in nursing, particularly at the doctoral level. Most participants were in favor of expanding program delivery methods to include some form of distance learning. In Canada, few universities offer online options for graduate nursing degrees and best practices are not yet established. Transitioning existing programs to online delivery will require careful consideration of pedagogy, evaluation, and effect on student experience and success (Leners, Wilson & Sitzman, 2007). Furthermore, perceived barriers, such as a lack of time for course development, anxiety about how to relate to and engage with students, and lack of confidence regarding the best use of technology must be addressed (Lindsay, Jeffrey & Singh, 2009; Paulus et al., 2010).

Participants also stressed the importance of retaining students in graduate studies and shortening completion time for terminal (PhD) degrees. In a recent review study on student retention in online graduate degree programs, Gazza and Hunker (2014) found that retention rates were predominantly influenced by social presence or amount of connectedness a student feels when enrolled in online courses. If Canadian universities opt for further use of online graduate nursing programs, professors should consider how they will connect and engage with their students. Some literature on successful strategies exists (e. g. Caring Groups; Brown & Wilson, 2016).

For participants in this study who were hesitant about the further proliferation of online doctoral degrees, credibility and pedagogical rigor of the degrees were of utmost concern. Unfortunately, literature on the evaluation of online PhD programs is sparse. In a recent review study, Russell (2015) found that most research on evaluation is focused on the affective domain of learning (i. e. student experiences). Less is known of the effectiveness of online modalities and more work is needed to compare online delivery methods with traditional approaches. If universities in Canada continue to move towards offering online graduate degrees, special attention must be paid to objective student outcomes and adherence to strict accreditation standards, to ensure 'ghetto programs' (1) are not created.

DNP faculty to meet teaching needs

A non-traditional path to nursing academia discussed by our participants was DNP preparation. In the United States, this degree is considered the standard for nurses seeking advanced practice education (Melnyk, 2013). A fundamental difference between PhD and DNP programs is the way in which the respective students engage with research. While PhD programs are designed to prepare students to conduct independent research and lead other scholarly activities, in DNP programs, nurses learn how to read and interpret research and implement the findings into their practice (Brown-Benedict, 2008). Whether DNP-prepared nurses are suitable for academic faculty positions is debated in the literature (Nicholes & Dyer, 2012; Staffileno, Murphy & Carlson, 2016). Concerns about limited research experience and the ability to advance the science of nursing were most prominent among our participants, and all but one preferred to reserve tenure-track and tenured faculty positions for PhD-prepared individuals. In Canada, nurse practitioners are educated at the Master's level and DNP programs do not exist. The near consensus on not hiring DNP-prepared nurses into vacant full-time faculty positions likely reflects this different academic context.

Part-time educators in nursing academics

The participants of this study spoke at length about the necessity of part-time educators for the functioning and sustainability of their programs. According to the CASN annual student and faculty survey, 74 % of nursing faculty were part-time in 2015, with approximately 62 % of these part-time educators employed on contracts of less than one academic year (Canadian Association of Schools of Nursing [CASN], 2016). Often, these part-time educators are hired at the last minute or spend time preparing courses that are cancelled or reallocated without compensation. Part-time personnel rarely have resources, such as office space, and many teach at multiple institutions to piece together full-time work (Dattaro, 2014). Literature on the experiences of part-time educators is mostly anecdotal; however, authors reveal a sense of disposability and a perception of threat around the availability of future work (Clark, 2008; Washington, 2012). Part-time educators receive last-minute briefings on their courses and are frustrated by the one-way nature of communication and by the lack of opportunities

to contribute to the overall teaching and learning practices of their institutions (Anderson, 2007). Furthermore, part-time educators complete work for which they are not paid, teaching and marking expectations are not realistic with provided supports, and they feel disconnected from the faculty – often viewed as not 'part of the family' (Davis et al., 2009).

From an academic leadership perspective, the use of part-time educators is challenged by several factors. Duffy, Stuart, and Smith (2008) reported, for example, that part-time faculty lack knowledge about pedagogy, are reluctant to enforce failing grades, and have low institutional commitment. While our participants viewed their part-time faculty members favorably, we are not privy to the perspectives of these educators nor their working conditions. Some recommendations exist to improve job satisfaction of part-time faculty, which include more opportunities for training and professional development, better pay and compensation for heavy marking workloads, more recognition and involvement in the overall workings of the programs, and increased support and resources (Davis et al., 2009). With the increasingly prominent role of part-time faculty in SON, academic leaders should consider their current practices and ensure efforts exist to retain part-time employees. Unnecessary turn-over contributes to incurred costs related to hiring and orientation of new employees and teaching instability.

Increased teaching workload and research productivity

One strategy discussed with reservation by the participants was over-assigning teaching workloads for full-time faculty to meet teaching needs. In most SON in Canada, a tenure-track or tenured professor's mandate consists of 40 % teaching, 40 % research, and 20 % service. The operationalization of the 40 % teaching varies, however most of our participants reported that this equates to between three and five half-year courses. Theoretically, increasing teaching responsibilities would work to offset vacant positions, but an increase in teaching would most likely be met by a decrease in service or research. Our participants explained that increased teaching was not routinely balanced by a reduction in research expectations or required service. Research productivity is often the most important aspect considered in career promotion (Taylor et al., 2009), and our participants were concerned with the implications of extra teaching on scholarly activities (i. e. research, grant writing, publications, and presentations). Lighter teaching loads are typically given when research productivity expectations are high (Ellis, 2013).

Heavy teaching workloads are also shown to affect the health of nursing faculty and workplace culture (Paton, 2013), and professors who work under these conditions are less likely to implement diverse pedagogical strategies into their classrooms and are unable to reflect on the quality of their teaching (Hemer, 2014). What was clearly and repeatedly articulated by our participants was the desire to maintain the rigor and integrity of their nursing programs. The consequences of over-assigning teaching responsibilities to tenure-track and tenured professors on research and scholarly pursuits, teaching quality, and the health and well-being of their faculty need to be need to be carefully considered.

International implications

Often, individuals embark on PhD studies in order to work abroad and it is common for universities to hire internationally educated professors (Munro, 2015). These professors facilitate foreign collaboration for research endeavors and expose students to diverse perspectives. With the increasing vacancies in Canadian Universities, newly (or not yet) graduated PhD prepared nurses are being actively and aggressively recruited into faculty positions at their home institutions. While starting an academic career promptly upon graduation is desirable for the individual from a financial perspective, it also limits enrolment in postdoctoral studies and availability of Canadian-educated professors to work abroad. Furthermore, the global shortage of practicing nurses World Health Organization (WHO) (2006) requires adequately prepared academic faculty at universities across the world. As more countries move toward requiring a baccalaureate degree for entry-to-practice (Global Knowledge Exchange Network on Healthcare, 2009), international demand for doctorally prepared academic nurses will rise. The findings presented here shed light on important challenges, considerations, and strategies used in Canada, which can inform international practices.

Limitations

There are three limitations to this study that require consideration. First, while we recruited a purposeful sample of Deans and Directors from across Canada, it is possible that geographic particularities were missed. These

may be related to language, culture, or student population needs. Second, given the highly public nature of the nursing faculty shortage and the funding implications for staffing vacancies, it is possible that the participants opted to withhold some information during the interviews. In two cases, the participants requested that certain elements of the transcripts be 'off the record'. We respected these wishes and do not feel that the inclusion of the data would have altered our findings, but we are unable to comment on information purposefully withheld. Third, due to the nature of qualitative data, we were not able to comment on the effectiveness of the past, present, and future strategies discussed. Instead, we asked the participants to reflect on their impressions of the usefulness of the strategies, but conclusions cannot be drawn from the findings presented here.

Conclusions

The Deans and Directors included in this study were concerned about their increasing demands for new faculty and the insufficient supply of potential candidates. Impending retirements posed the greatest threat with the participants reporting approximately 60 upcoming vacancies in the next five years at their institutions alone. The participants were concerned about the ramifications of some of the decisions deemed necessary for continued viability of their programs, such as over-assigning teaching workloads and relying on non-PhD prepared individuals to teach undergraduate courses. If effective strategies are not initiated to manage the nursing faculty shortage, administrators will have no choice but to roll back admission to graduate studies, thus further limiting the pool of potential professors. The excellence of all nursing programs is contingent on the availability of qualified mentors and supervisors to support students in their pursuit of advanced degrees and every effort should be made to increase doctoral program graduation rates.

The participants discussed a multitude of strategies employed within their schools to maintain the functionality and rigor of their nursing programs. Important considerations, such as shortening the time to completion for PhD studies and making graduate education more accessible, might help to increase the overall number of nurses qualified and available to work in academia. In the United States, traditional faculty positions are commonly staffed by DNP-prepared nurses to meet doctoral quotas. In Canada, academic leaders appear hesitant to use this option. Instead, the findings of this study suggest that the 'grow your own' approach to faculty renewal is prominent. Above all else, these academic leaders aspired to protect the integrity of nursing as a discipline that is underpinned by sound research conducted at their institutions. Further research is needed to fully comprehend the effects of the strategies discussed.

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