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Seizing opportunity: Diverse early-entry nursing students' perceptions of seeking a PhD

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Early entry to research-focused doctoral education (PhD) by pre-licensure students (i.e., those graduating from baccalaureate or masters-entry programs) has been endorsed by organizations such as the American Association of Colleges of Nursing (AACN, 2005) and the National Research Council (NRC, 2005). In 2012, 78 nursing programs offered a pre-licensure to PhD option (AACN, 2019). To date, with one notable exception (Nehls, Barber & Rice, 2016; Nehls &Rice, 2014), little research has been conducted to give voice to early-entry students about their experiences in choosing and completing PhD study. The purpose of this paper is to document issues related to decisions to pursue PhD studies raised by students who participated in one of two federally funded projects designed to increase the number of early-entry students in an existing PhD program. These projects focused specifically on promoting early-entry among students from underrepresented ethnic minorities (URMs) and developing nurse researchers capable of advancing ethno-cultural gerontological nursing science.

Background

Three interrelated factors informed the design of these projects. One factor was recognition by nursing leaders about the critical shortage of nurses with doctoral degrees. Nursing leaders have endorsed the need for research-focused doctoral education in nursing for many years (AACN Task Force on Future Faculty, 2005). Despite this endorsement, however, the number of nurses with PhDs remains quite small (HRSA, 2013). In 2000 only 0.3% of nurses had doctoral degrees. That percentage increased to 0.9% in 2015, then decreased to 0.6% in 2017, with nurses holding practice doctorates (DNP) almost double that amount (1.1%) (Smiley et al., 2018). Some assert the increase in DNP enrollment is likely the cause of decreasing enrollments and graduations of nurses in PhD programs (Broome, 2018). Without distinguishing between practice (DNP) and research doctorates (PhD), the Institute of Medicine report on the Future of Nursing (2010) recommended doubling the number of nurses with doctoral degrees by 2020. The distinction, however is important because the lack

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of nurses with research-focused doctoral degrees profoundly impacts the evolution of nursing science. Also affecting nursing science is the abbreviated research careers of most nurse scientists (AACN, 2005; 2019; NRC, 2005). The average age of nurses graduating with doctoral degrees is 44 years (Fang, 2017). This means nurses have about 20 years to develop programs of research and contribute to science. Abbreviated research careers in nursing are related to the long, circuitous educational pathways endorsed in nursing culture, which supports educational "stop-outs" during which nurses are expected to practice. Although no empirical data show the "stop-out" career trajectory makes better nurse scientists or better research products, the tradition persists. While there is disagreement (Mason, 2003), many nurse leaders believe that reducing "stop outs" by moving students directly from pre-licensure programs into PhD programs is essential for increasing the number of years available for nurse researchers to contribute to the science (AACN 2005; 2010; Cronenwett, 2011; Olshansky, 2004; Nehls & Barber, 2012).

While promoting early-entry PhD education appears to be desirable, achieving the goal is not simple because of scant knowledge in several areas. For example, while there is documentation about motivations for individuals to enter nursing as undergraduate, second degree and AD-to-BSN students (Duffield, Pallas, & Aiken, 2004; McLaughlin, et al, 2010; Rognstad, et al, 2004; Jirwe & Rudman, 2011; Price, 2009), the literature is strangely silent about factors that motivate nurses to pursue research-focused doctoral degrees. Similarly, while 78 pre-licensure to PhD programs exist, program evaluations are few. Ellenbecker and Kazmi (2014) documented challenges associated with BS-PhD programs including those related to curricula, program implementation, student financial support and student recruitment. Nehls, Barber and Rice (2016) evaluated the program at the University of Wisconsin-Madison by comparing BS to PhD students, to students with a BS and at least one year of nursing experience, and traditional master's to PhD students. They found no differences in research productivity, post-graduation employment or student concerns with funding, mentoring and teaching preparation. However, differences existed in perceptions of clinical competence, and motivations for pursuing the degree. In addition, those in the BS-PhD option were more ethnically diverse, had fewer cumulative years of education at the time of graduation and were more likely to graduate. Nehls and Rice (2014), in describing the experiences of early entry students with career decision making, facilitators and challenges, identified the importance of early exposure to research experiences, faculty encouragement, assurance of funding for doctoral education and the need to address concerns about lack of clinical experience.

The second factor influencing the project designs was the changing demographics of the country and the lack of diversity in the nursing workforce (AACN, 2017; 2019). The Sullivan Report (2004) made clear links between quality of care received by individuals in minority groups and the degree to which the ethnic composition of the health professions workforce approximated the ethnic composition of the populations served. The Sullivan Report also documented the importance of having faculty from minority groups to enhance recruitment and retention of students from ethnically diverse groups. Although the numbers of ethnically diverse PhD students has increased since 2009, there are still over two times as many non-Latino White students than students in PhD programs from under-represented minority group (URMGs) (AACN, 2019). Reasons for the lack of diversity among nurses

and nurse researchers have been discussed in the nursing literature for over 20 years and descriptive studies have identified several important issues related to difficulties in attracting and retaining nursing students from URMGs. For example, Lockie & Burke (1999) documented problems with inadequate preparation in math and science and poor basic language skills; inadequate knowledge of academic structures including admission requirements, admission processes and available resources; lack of financial resources; lack of role models; and lack of support programs such as mentoring, counseling and tutoring. Personal problems of nursing students in URMGs have also been described with students lacking family support, feeling isolated from peers, having difficulty establishing a peer group and feeling discriminated against by faculty and peers (Villarruel, et al, 2001; Feist-Price, 2001, Furr & Elling, 2002; Nugent, et al 2004). Although a few studies have considered recruitment and retention of nurses into graduate programs (McWhirter, 2003; Plunkett, et al, 2010) studies in that area are scant and to our knowledge, none has focused on nurses from URMGs or on research careers in nursing. Nursing organizations and leaders have launched a number of endeavors in response to the lack of diversity including, for example collaborations between AACN and Robert Wood Johnson, Johnson and Johnson, the California Endowment and the federal government as chronicled in an updated fact sheet published by AACN (2017). In addition, a number of special projects for recruiting and retaining individuals in URMGs into nursing are described in the literature, including a few that focus on recruitment of nurses from URMGs into doctoral programs such as the Research Enrichment and Apprenticeship Program (Leeman, et al, 2003); University of Illinois at Chicago Bridges Program (Kim, et al, 2009); Winston-Salem State University and Duke University's Bridge to the Doctorate Program (Brandon, Collins-McNeil, Onsomu & Powell, 2014) and UCLA Young Scholars' Program (Mentes, et al., 2015). Despite these efforts, however, little evidence suggests the problems identified have been adequately resolved in the past 20 years.

The third factor influencing project designs was widespread recognition of the aging of the US general and minority populations and the implications for the evolution of nursing science. By 2030, those over 65 years of age will constitute 21% of the total US population; the 65+ population will double; and the 85+ population will triple by 2060 (Federal Interagency Forum on Age –related Statistics, 2016). Particularly relevant to this project is that by 2060, for the first time in U.S. history, the non-Latino, single-race white population will be in the minority (45%) (Federal Interagency Forum on Age-related statistics). Responding to the needs of these ethnically diverse elders requires a mature, efficacious knowledge base in nursing that integrates knowledge from gerontological and transcultural nursing, however, evidence from an integrative literature review (Mentes, Salem & Phillips, 2015) suggests this knowledge base is still quite sparse. Ellenbecker and Kazmi (2014) showed that most BS-PhD programs focus on "general research" and clinical focusing is not common. However, given demographic imperatives, we designed our projects to respond to a strong need for developing gerontological nursing science with a particular focus on ethnocultural gerontologic nursing science.

In summary, despite the lack of knowledge in some areas, three factors formed the background and influenced the design of our projects designed to promote early-entry to PhD education among students in URMGs focusing on careers in ethno-cultural

gerontological nursing science. The purpose of this study was to describe, from the perspectives of students, factors influencing decisions about entering a PhD program. The research questions we sought to answer were:

1. What factors negatively affected decisions about early entry?
2. What factors positively affected decisions about early entry?
3. What factors made a difference in whether student opted for early-entry?

Description of the Project

This project was conducted in two phases. The first phase, funded by the Health Resource Service Administration, used the Jolly, et al (2004) model of Engagement, Capacity and Continuity, and targeted students in the pre-licensure program (Young Scholars Program, [YSP]). Activities included providing mentoring to recruit, creating coursework on ethnocultural gerontological nursing science and providing transitional support to pre-licensure students in the PhD program. The second phase, which was been funded by the National Institute of General Medicine (NIGM), Bridges to the Doctorate initiative (Bridges Project), was conducted in collaboration with Charles R. Drew University of Medicine and Science (CDU), a Historically Black Graduate Institution and Hispanic Serving Institution. Phase 2, which specifically targeted master's entry to nursing students, combined the Jolly model with the multi-level Mentorship Model for Retention of Minority Students (Nugent, et, al 2004). The foci of mentoring were informed by theories of self-efficacy (Byars & Hackett, 1998; Lent, et al., 2005); identity formation (Chemers, Zybriggen, Syed, et al, 2011); and achievement value (Eccles, et al., 1983; Wigfield & Eccles, 1992), as research has shown these to be important for recruiting underrepresented students into STEM (Science, Technology, Engineering, Math) programs. Both phases involved intensive pre-entry mentoring designed to inform students about procedures and processes, expose them to a variety of enrichment activities to stimulate interest and commitment and assist them to develop research ideas and possible contributions they, personally, could make. With federal funding, we recruited and provided transitional support to 23 students with an average age at PhD admission of 30.2 years. Twenty were from ethnic minority groups, 18 were females. Of these 23 students, 9 have graduated, 4 have defended proposals, and the remainder are completing coursework or preparing their proposals. Three students dropped out of the program in the first year of their PhD studies.

Method

We used a qualitative descriptive design and semi-structured interviews to explore the perceptions of making the decision to pursue a PhD in nursing and the experiences of PhD studies. This report focuses on the perceptions of making the decision to pursue PhD studies. We received human subjects approval through the University IRB. A proviso of human IRB approval was that the PIs would not be involved in data collection or know the identity of participants.

Setting and Sample

We invited, via email, all 23 students described above to participate in confidential interviews conducted by a trained research assistant. Although most students responded that they could participate, 12 completed interviews. Interviews were conducted in a private office or over the telephone at the participants' choice and because of confidentiality (authors would be able to identify the student) no personal information was requested from the participants. Interviews were recorded and lasted between 40-60 minutes.

Procedure

After receiving the email invitation, participants contacted the research assistant to schedule confidential interviews. The interview guide included open-ended questions such as: 1) When did you decided you wanted to pursue a PhD in Nursing? What were motivating factors in that decision? (Think about experiences you had in your education that might have motivated the decision. Think about personal factors as well). 2) In nursing, many students choose to wait to enter a PhD program. Why did you decide to enter directly from you pre-licensure program? What factors motivated you? 3) While you were making your decisions, what advice were you given? What were the reactions of those you told? After completion of the interview, the research assistant de-identified data as he transcribed the interview verbatim into a word document for the two investigators to review and analyze.

Data Analysis

The investigators independently reviewed the written transcripts, word for word, and completed preliminary descriptive coding. We then condensed preliminary codes and developed concept tables with supporting text from the interviews, which were cross-validated by the two investigators (Miles & Huberman, 1994; Sandelowski, 2010). After extensive review of the codes and iterative readings of the interview transcripts, the investigators developed a model to describe early-entry students' decision to pursue PhD studies in nursing. The model was developed over 5 iterations through consensus. To validate the model further, we invited two early-entry students (one from our program, one from another early entry program) who had completed their doctoral studies, to review the model and explanatory text. We reviewed their comments and incorporated relevant suggestions to complete the model.

Findings

These students described a complicated process involving the weighing of positive and negative factors (Figure 1) that led ultimately to a decision to "Seize the Opportunity" by applying to PhD program as an early-early entry student. For these students, **knowledge** was the starting point. None of these students indicated they knew about the *existence* of a PhD in Nursing. "I don't think I was aware there was a PhD in nursing. I don't think a lot of nurses are aware of that. That's something that's not really discussed or promoted during the pre-licensure phase, so I was surprised. I was aware of the DNP but I didn't really know the difference" (8). "I didn't know that a PhD in nursing even existed. From what I understand nursing science is new" (5). "I didn't know that academic nursing existed. I'd had zero exposure to the idea that this is a possible future path" (1). Once introduced to the idea, they

described being only vaguely aware of the *pathway*. “When I did come in through the MSN, entry-level that’s when I realized that there was a pathway to go from nursing to PhD” (2). “A PhD in nursing? Never had I known…We knew there were ideas out there but we didn’t read articles, we didn’t know clearly the path” (11). Similarly students struggled to understand *what nurses with PhDs do*. “My entire understanding about nursing was bedside nursing and getting an RN license and just working as an RN”(4). “I think that I would have gone into a clinical practice just because I didn’t really know what a PhD in nursing was about. I didn’t really know about doing research that could actually influence policy or influence practice” (9). “At the time I didn’t know what the heck it’s gonna be…what it is, what it entails. What do people do with it?” (11). “I guess what I was trying to figure out was what do people do with this? How does it apply because it’s very different than say the prelicensure program or a credential like say, nurse practitioner or medical license – you know, it’s not a license to do anything, it’s a degree” (12).

Once they were made aware of the option, students described the idea of early-entry to a PhD program as a “once in a life-time opportunity” (11). One stated “sometimes opportunities come once and if I don’t grab it I don’t know when I’ll get an opportunity like this” (9). Another described it as “an Oz experience – not the movie but the book; maybe the movie. You show up and all of a sudden you have these glasses that tint everything in this optimistic green and you’re able to see stuff that you never would have seen before and that in it of itself is worth it because that doesn’t go away. Actually, once you know it’s out there it would be very hard to walk away” (1). Despite these sentiments, however, finally deciding to “**seize the opportunity**” was not easy, because there were so many factors to consider.

Students described four interrelated risks they had to consider. First were **personal risks** or those related to perceived threats to self. Some personal risks had to do with *personal capability*. For example, “I just didn’t really think I would get accepted…and I did [laughs]. I still find that so surreal” (3). “Initially when I went into nursing it was for clinical practice. I had already obtained a master’s [in another field, but] not quite believing that I could in fact go on into a PhD program. I felt that perhaps there were a lot of – I would call it a glass ceiling of sorts where you think you could but for one reason or another you aren’t actually able to have that accomplishment. Not only did I not feel I was up for the task, I didn’t know that people really wanted me” (10). “I was freaking out with anxiety and apprehension. I just remember saying something like, “Yeah, I’m standing at the foot of Mt. Everest and I’m standing looking up at the top and holy crap! I gotta climb that; I gotta somehow get up there” (12).

A major personal risk was fear of being revealed as an *imposter*. “Pretty quickly at the Masters level there started being little hints of kind of imposter syndrome stuff; waiting for people to come in and call me out for being there. The idea of going to a PhD program was like imposter syndrome times 1,000. There was no way that the admissions committee wasn’t going to immediately recognize I was here not because of my intelligence or abilities” (1). “So there is a stigma because I think the expectation is that if you’re a PhD student [from a minority] you’re somehow less qualified and you’re here because of affirmative action type things” (1). “We’re the affirmative action kids, right? So I had that in the back of my mind” (5). “But I remember saying that I always feel like I don’t belong.

Like I'm the imposter and I'm walking around here and sooner or later somebody is just going to grab me by my neck and just say, 'You don't belong here' and throw me out" (3). Aligned with the imposter syndrome were fears related to being viewed as inauthentic, principally because of direct entry to the PhD with no "stop out" for clinical practice. "I felt that they were like, 'you don't know what you're talking about because you haven't been part of the practice experience'" (2). "You already have like an 'X' on your back, like you don't have the experience – are you a real nurse?" (8). "I was worried about the traditional students and the professors. Like they'll look at [us] wrong. I don't know. Like we don't have that much nursing experience; we're jumping straight through… I guess to put it like, 'You haven't practiced yet. You're not a nurse. What do you know about this?'"(12). Age was another factor that contributed to feeling inauthentic. "So I guess being younger than the majority of the seasoned nurses you get babied. They see me not as a colleague but as somebody they could potentially mentor and help, which is great but you still get that feeling that you're without that experience. You get looked down upon" (7).

Being perceived as an imposter was a personal risk, but it was also strongly related to the second type of risks. **Career risks** were threats related to opportunities post-PhD because of lack of clinical experience. "If I get a PhD am I not going to be as successful because I don't have experience? At the time we were struggling with whether we should get jobs because you're hearing that it's going to be even more hard for you to get an academic position teaching when you don't have the experience" (8). "Shoot, if we don't get clinical experience that kind of cuts off that path. If for some reason I decide I just want to do clinical practice, I can't do that. I would be unemployable, un-hirable, that path would be cut and that's a source of portability. I think it lends itself to adding security because if I had to move somewhere, sure I could get a job very easily, whereas if I don't have that experience, good luck" (12). "That was actually a hard decision, to forego going into the hospital setting or bedside setting immediately" (7). Career risks were also related to threats from co-workers. For example, "I was supervising across a variety of counties and a large number of licensed individuals. The idea that I would walk away from that for any reason was really laughable. What I was told was 'that's fine but if you do this you'll never get another job in this field again because people will know that you abandoned us for this academic pursuit" (1).

Family-risks, the third type of risks, were those related to perceived tangible and intangible threats to family and family values. Tangible family risks were discussed in terms of what more school would mean economically to the family. For example, "For me it took a huge shift in perspective in that I went into this as a career change with four major goals– get into nursing school; graduate from nursing school; pass the NCLEX; get a job. The first three still apply, the fourth to me personally is very important because as the sole financial support for me and my family" (12). "I mean, I come from a poor family so it's like we really can't afford staying in school too much because the idea of going to school is basically you get a job, a career so that way you can actually support the family and it's not just like family as in the future kids that I will have; it's also my parents" (5). "Her [mother] initial thing was kind of like,'Oh, you're going to be done with nursing school and be working.' Not working in the sense of gaining experience but just having an income because I've depended on her

for so long so it was just like almost going back to school all over again with me having to depend on her again" (9).

Intangible family risks were discussed in terms of what continuing with school might mean for being unable to fulfill family values and expectations. For example, "I'm a first generation high school graduate – so no one in my family has finished high school or gone to college and we grew up with some serious economic [issues]; like food insecurity, really challenging childhood. The community that I come from has a very shared economy. What I own belongs to you, what you own belongs to me and depending on when we need something we help each other with the plumbing bill or new tires for the car, no questions asked because there's a reciprocity expected. Any time an emergency happened with any of my family and even extended family, the expectation was that I would be willing to step up and offer money so this potentially impacted not just myself but a huge cohort of people" (1). "There's no way I'm going to kind of like ignore my family. I make myself available whether it's to take them to the grocery store; whether it 's to take them to the hospital; whether it's to take in more work hours so I can afford rent or basic things" (11).

Last were **financial risks** or perceived threats to economic well-being. Obviously some of these threats related to the family as illustrated above, but there were other concerns as well. "I hate to say it but you know, you come into the nursing profession because there's that financial stability that a lot of disciplines don't give you. So just going into nursing you already have some financial hardships so you know moving into the PhD you keep thinking 'can I make that happen because of the financial hardships?' I came in with some loans. Even before nursing, I had loans in my baccalaureate so I was able to defer them while I was in school but then moving forward, I'm like 'you have to be able to not only to pay for your expenses but also to pay for the loans'" (2). "You still gotta pay the bills. I already had mortgages and I had put kids through school by the time I became a student so I already paid off their school, now I'm starting to pay my own. It's just hard" (3). "Actually, I know that my dad doesn't have savings and I finally started taking care of their bills so I didn't want to just go straight through" (5). "I did come to nursing so I could support myself and not that's it about money but you need to survive and take care of my family so a lot of it was more financial fear – the fear of not being financially stable" (8).

Detractors were factors that amplified the risks. Among the most commonly described detractors were *comments made by faculty*. "I was entertaining the idea but there was always this kind of push and pull between, 'Oh, you should go out and get clinical experience as a nurse and then come back and do a PhD program. ' I was really on the fence about it until like the very last moment" (6). "From faculty there were two pathways; two trains of thought. One of them was, 'Yeah, you do the PhD and get it done.' The other one was, 'Hey, go practice for a year and then come back and get it done. ' Knowing that, it was kind of a struggle to determine which pathway do I take because at the end of the day they are the ones that are immersed in the nursing profession" (2). "I can recall two or three professors that brought up the idea of 'how can someone be a doctoral level nurse and not have any experience? They mentioned little things here and there" (11). However, *peers* also served as detractors. For example, "But like from peers in my [pre-licensure] classes, it was

almost like, ‘why are you going back to school? You’re not going to make money right away’” (8).

Some of the most vehement detractors were *co-workers*. “People at work were more like, ‘What are you crazy? Why do you wanna do this for? Do you want to go back to school for another five to six years? You’re crazy’” (3). “I got a lot of pushback that was frankly insulting. I had nothing but extremely disparaging responses when I told people I wanted to go back to school; from the CEO, the medical director, a variety of people. Mostly because they never even heard nurses do research and at the time they weren’t using evidence-based practice guidelines so this really was a vacuum to them. They thought it was a waste of time. The main response I got initially was actually kind of a laughing like ‘nurses can get PhDs?’” (1).

Concerns about what *they would have to give up* were also detractors. “The idea of leaving that sort of job security for this kind of academic pursuit that’s really abstract” (1). “I think the financial piece is key. And then when you think of practice, you’re getting a pretty generous financial incentive to pursue practice rather than a PhD” (2). “That’s (money) a real issue - seeing all of your friends potentially going to the FNP and working on the floor making money. You kind of start to think, ‘Is this the best decision?’” (8).

Other detractors related to *personal life circumstances*. For example, “Honestly, I’ve been in school since I was like 6 years old. I only had like a 6 month break prior to getting into the pre-licensure program so the fear of getting burnt out; just being over school” (8). “I had a daughter and I wanted to focus a measure of my life making sure I raised my daughter” (10). I have been told by peers that sometimes PhD programs are the death of a marriage” (10). “If you’re a man I guess sometimes it might not matter for some people because [they] can start a family at any time. But if you’re a woman between the ages of 25 and 35,I feel it is a crucial age” (11). “You know, economics – they call it opportunity cost -- things that I could be doing instead of this. Whether it’s pursue business ventures or vacationing or time hanging out, whatever it is or just earning money” (12).

Risk offsets were factors that counteracted risks. Perceived *personal assets* were risk offsets. Students described themselves with terms such as “curious” (5), “a ‘little weird’” (1), “up for a challenge” (2), (12), “not a traditional student in any shape, way or form” (3) and “driven to make a difference“ (5), (6), (8), (9), (11). *Personal assets* also included life-long aspirations. “I think even before coming to nursing, I was interested in research. I always knew I was going to get a PhD. I didn’t know if it was going to be nursing or something else but I think I always had that… goal to pursue a PhD” (2). “Before I came to the U.S. I was also in a program in science … It had always been my intention to get back into academia” (4). Another student spoke of aspiring to having broad influence. “I loved everything about nursing and I felt I was excelling at it and so personally I thought bedside would be great but I don’t see myself doing that for a long time. I feel like working in a hospital setting and helping people who are sick or working with individual risks is limiting. I felt there was more to do than that.” (11).

Another risk offset was *background* and the experiences that came from that. Some said because of their backgrounds, they had learned to deal with difficult situations which helped make the thought of further education possible. For example, “As a minority woman you have to…I’ve been in a place where I’ve always had to try prove myself in professional settings so that’s nothing new to me, that concept of working hard and trying to get ahead” (7). “In my experience, if you are a person of color; if you are a woman – not so much in the nursing field but in corporate – you have to work so much harder to be in that position, not just qualified—exceptional. So it comes with the territory to be more skilled, more experienced, sometimes a little smarter, sometimes a little more capable if you even expect to be there at all” (1). Family background and expectations were also mentioned by some. “My mom, my parents really supported it because more education is always good” (6). “Because I’m a second generation migrant – my parents knew what a PhD means in terms of social mobility because it would increase that. They don’t see a lot of minority faculty members and the idea of me as an individual going through that would appeal to them” (7). “From my family, they’re all for it. They want me to keep going because it directly benefits them” (8). “There are always these expectations especially if you’re from an immigrant family. It’s like you come to America and there’s something that’s expected of you” (12).

Support in the form of encouragement was a major risk offset. Many indicated they felt they had been personally encouraged by advisors and program faculty. For example, “Drs. X, Y, and Z reached out to me based on the grades I had, other research that I was already doing” (1). My senior year faculty strongly suggested I apply to the PhD because I had been involved in research at that point for a couple years and I was really interested continuing that work” (2). “It was kind of like, ‘Hey, I can do this.’ I had not even thought about it and would never have thought about it had I not seen this professor” (3). “She was my advisor. She was like, ‘Yeah, go ahead and do it’ and so I did it.” (5). “Hey, you know you have really great scholarly work, you do research really well. Why don’t you consider getting into academia?’ That is when it first sparked for me to pursue a PhD” (7).

Students identified **pre-entry mentoring** by project faculty as a major factor that made a difference in whether they opted for early-entry. Students recognized pre-entry mentoring was a strategy for gathering information and instrumental support. For example, “We got exposure to knowing how to do that [a poster], how to write an abstract, how to send an abstract, and how to present all that” (8). “It was insight about what we were getting into; the responsibilities involved; the sacrifices involved; the difference between a PhD and a DNP. We were clearly made to understand from the very beginning we were aware we were going into an intensive research program” (4). “They secured alternate funding for me. They kept us on track so that these things that would normally stop anyone from continuing the program but happen to occur disproportionately in populations like mine were anticipated” (1). “They hounded us to get applications in” (10). “When it came time for us to move forward and think about applying and kind of getting our heads on straight for that they would remind us like, ‘hey you know the deadline is coming in’” (2). Just as important as having information, however, was the way information was provided. For example, “The way they explained the program was that they were trying to increase the presence of minority researchers within the research field, specifically nurse researchers. I found that

was really important because often times people who are doing research as it relates to minority health and health disparities that affect minorities are not people of color. They might not always have… a well- rounded knowledge of the issues that one might have if they were from that culture or that population. That intrigued me and that's how I was introduced from then on and the rest is history" (8). "I think they were pretty honest too and that's something that I found valuable. They let me know that there might be some faculty who would look at us differently because we didn't have that experience but it wouldn't matter because we're [focused on] research and the clinical experience it's good to have it but it doesn't make or break your research in how you would be defined as a great researcher so I think the honesty from them and then definitely all of the support from them in the application process and even just helping to figure out my research topic" (8). "That wasn't something I chose to do, it was more of how the program was offered" (11).

Positive attributes of pre-entry mentoring were its *intensity and variety*. "We were not just mentored for one month or two months. It was a continuous mentorship and mentoring which took almost nine months. It was weekly meetings" (4). "Literally like walked into the process of thinking like a PhD student, reading like a PhD student – you have this group of support that's also giving you ideas because once you get into the program, yes you have your advisor but your advisor already in a sense has expected you to have something down. You have this abstract idea of something that you might be interested in. They helped really hone down that idea and then lead you towards the right path, certain journals to look at, and articles. Sometimes they'll find articles that will be helpful to us" (9). "Every two weeks or every week – we were meeting with the mentors. One of the activities was to go to conferences, get our feet wet into this research world - another way that researchers disseminate their information and share their information and discuss in person. I remember… GSA – I was amazed – a couple thousand people" (12). "I definitely benefitted a lot from the mentorship, the group support, the help with navigating the whole [educational] system. That was huge because navigating the system is a challenge. They also helped me figure out the research question. The exposure to conferences and academia in general. It was scary but it was still beneficial. I mean, the other students that I talked to hadn't presented a poster until like their second year in the PhD program and we're already coming into the program with all that experience" (7).

Another important attribute was that pre-entry mentoring was *highly personal*. "The Bridges group was very welcoming, very open; were so clearly interested in my success and not interested in whether or not I perfectly fit their little mold" (1). "Definitely the assistance in helping me put together my application and helping me figure out how to appropriately interview or be an interviewee because it's totally different when you're applying to a grad program and having a panel interview is scary. Knowing that ahead of time and some tricks and things like that was helpful" (8). "I got more than advice. I got actual grooming which was necessary to come into a room with a panel interview with some of the top nursing researchers in the country and be able to explain who I was and what I wanted to do and how I thought somebody like me could pull it off" (1). "We had like a sound understanding of what our research phenomenon was, what population we were focused on, what health issue, and we could articulate that. I think that helped with the interview process as well as gaining some respect from our cohort" (8).

Reframing was the process of visualizing the future differently that afforded students the confidence to "Seize the Opportunity" Reframing was influenced by students' self-assessments of risk offsets as well as Pre-Entry Mentoring process. Some students described having a new vision for themselves and their futures. "You know what? You can do research. You can go on and get a PhD.' They helped me to see if that is your passion, this is what you want to do, then this can certainly be a reality for you. It goes back to not having a seat at the decision making table I don't think I had a seat. I didn't even realize there could be a seat for me. They helped me to believe in myself. They helped me to see what could be my possible future" (10). "You tell yourself that this is an aspect of my career that involves me making reasonable contributions to the field of science and to the field of nursing. You can only do that when you are a researcher and you can help in developing an aspect of care that will affect the general population, the nursing profession" (4).

Students also discussed having a new view of nursing and nursing science. "I would say… going back home one summer and just noticing a whole bunch of health problems with my father and just how he doesn't know much about how to deal with his health. For me I was just like maybe the PhD could provide me with an avenue to be able to do studies and help change policy. I think that was one of my main things, doing something personal like that made me want to do more" (9). "I could see that nursing was a way, way higher and deeper than I had thought it to be. I discovered that nursing was a profession that has a future, a better future than what people think. It opened up our understanding about nursing as a research profession and as a science because originally a lot of people think of nursing from a different aspect. Now I understand how broad nursing is as a profession" (4).

Discussion

In this study, we have uncovered some of the motivators and detractors that can help nursing educators understand how to successfully recruit and retain diverse PhD students based on the students' report of what helped and what could be improved in the program.

One of the universal perceptions of all of these students was the lack of **knowledge** about the availability of PhD studies in nursing. Although a few indicated familiarity with PhDs in other fields, none had considered a PhD in nursing before introduction to the possibility of a PhD by the project faculty. Although knowledge of the possibility of PhD studies in nursing was not sufficient alone, the introduction of the idea of a PhD was the first step for these students. Other studies on perceptions of students in early entry programs did not indicate knowledge gaps as an issue for their students (Peterson, Moss, Milbrath, von Gaudecker, Park, & Chung, 2015; Nehls & Rice, 2014; Xu, Francis, Dine, & Thomas, 2018), however this is noted in the general STEM literature (Byars & Hackett, 1998; Chemers, Zybriggen, Syed, et al, 2011). This is a problem with how nursing science and PhD studies are presented in entry-level nursing education and may be an even bigger issue in minority serving institutions where a majority of faculty are not PhD prepared. Faculty members who do hold a PhD are often in administrative positions and have minimum involvement in research, which limits the students' perceptions of the role of nursing science.

Some of our findings related to **risks** to pursuing a PhD support findings reported previously in the literature and revolve around issues of identity as a nurse, family and financial issues (Nehls& Rice; Peterson et al., 2015; Xu et al, 2018). Because of limited experience, the students reported feeling like imposters and not real nurses. This was reinforced by nursing faculty members who made it clear students needed substantial clinical experience in order to be nurse scientists/researchers. These responses affected not only the students in our project but also created some overt tension between early-entry and traditional PhD students. In addition, some state boards of nursing regulations that specify clinical experience as a prerequisite for clinical and some didactic teaching were of concern for our students.

Financial concerns about academic debt incurred during undergraduate and master's education, which in many cases was substantial, provided a strong disincentive for early-entry. Concerns also influenced students' ability to view PhD study as full-time, despite faculty admonitions not to work. Some other programs (e.g., Greene et al., 2017) have recommended residency programs for students moving from a BSN to PhD program, which are part of the academic program and paid with a modest stipend. Whereas this may be adequate for some students; for students with family and living expenses, "modest stipends" are not sufficient. Therefore multiple avenues for financial support should be considered for students moving directly into PhD programs.

Family issues were prevalent as have been documented in the literature (Xu et al, 2018). Specifically, personal responsibilities to family members to be present and contribute to family social gatherings could interfere with the student's commitment and participation. Family issues lead students to reappraise their commitment to pursuing PhD education and in a few instances, led to students exiting the program. Additionally, students were concerned about an extended period in school because they could not provide financial support to siblings, older parents or other extended family members, as was their family culture.

Detractors that amplified risks were the responses primarily from faculty members and co-workers, who questioned students' reasoning about pursuing a PhD when they could be gaining nursing experience and making money. Instead, students were encouraged to delay research careers for another 4-5+ years. Although family members supported PhD education, commitment to additional education weighed on the students' minds; worrying that they had been emotionally and financially supported for so long and needed to give back to their families.

The substantial role of **pre-entry mentoring** prior to application to the PhD program was pivotal for all of the students. The mentoring involved not just content but process elements of role modeling and coaching as highlighted in the interviews. As one student said, [Mentors] "literally like walked [us] into the process of thinking like a PhD student, reading like a PhD student." In addition, the highly personal aspect of the mentoring process was important. We provided the mentoring to the students at their home institution and spent substantial in person time with the students. This helped us to build credibility and trust with the students that carried over when they transitioned into the PhD program. An essential aspect of pre-mentoring was taking the students to a large international conference, in our

case, the Gerontological Society of America (GSA) Annual Scientific meeting, where we encouraged exploration, networking with other professionals and coached students in the role of nurse scientist (Mentes, Cadogan, Woods & Phillips, 2015).

Although there have been various STEM- focused pre-mentoring programs that generically provide support to encourage underrepresented minority (URM) students to pursue careers in STEM fields; these programs usually do not provide the discipline-specific mentoring described here (Thakore, Naffzinger-Hirsch, Richardson, Williams, & McGee, 2014; Williams, Takore, &McGee, 2017). Of programs that have provided nursing science-focused mentoring; for example, the Building Academic Geriatric Nursing Capacity (BAGNC) funded by the John A Hartford Foundation and the Nurse Faculty Scholar Program funded by the Robert Wood Johnson Foundation; the intensive mentoring is not focused solely on URM students and occurs once the student is either enrolled in a PhD program or is a junior faculty member. The Hillman Scholars Program for Nursing Innovation, funded by the Rita and Alex Hillman Foundation, supported students who selected a BSN to PhD program at one of three research-intensive universities (Greene, FitzPatrick, Romano, Aiken & Richmond, 2017). Although mentoring was offered throughout the BSN program, the students had already committed to pursue the PhD. Of the nursing Bridges to the Doctorate programs that have been described in the literature (Brandon, Collins-McNeil, Onsomu, & Powell, 2014; Kim et al, 2009) reports focus on program elements rather than the voices of the students explaining which strategies were effective. Although not currently federally funded, the UCLA-CDU Bridges to the Doctorate program continues to be one of few programs that focuses on aging and actively recruits and provides prementoring to URM pre-licensure students.

Based on the interviews, we believe that the pre-mentoring process was the most essential ingredient of our project. It offered students the ability to **reframe** professional aspirations and to see the profession of nursing in a new light. They felt empowered to make a difference through research even though they had not imagined themselves in that role. Students brought their own personal strengths and background and through pre-mentoring they were helped to devise language and strategies to navigate through detractors and mitigate risks, and finally to reframe their futures so they could **seize the opportunity** and enroll in and complete PhD studies.

Strengths and Limitations

The participants for this study were recruited from one university, which is a limitation. However, several of our findings have been reported in the literature previously. Additionally, we believe that the confidentiality of the interviews allowed the students to be candid in their responses about the strengths and challenges of our program. Further, we attempted to ascertain the trustworthiness of our findings and model by seeking input from diverse early-entry students who had completed PhD studies, one from our program and another from an early-entry program at another university. We incorporated their feedback into our final results and model.

Implications

Our study findings have implications for all levels of nursing education, for changing the diversity of the nursing workforce and for examining “nursing culture.” As for pre-licensure education, these students lacked knowledge about nursing science, research-focused doctoral degrees and PhD pathways including early-entry. This suggests the need for faculty to evaluate how and when these topics are incorporated into pre-licensure education. If we are going to increase the number of nurses with research doctorates and advance nursing science, information on these topics needs to be introduced early in the students’ coursework and to be reinforced throughout the pre-licensure program. The value of nursing science needs to be placed in the forefront of pre-licensure education.

As for doctoral education, faculty need to evaluate their strategies for recruiting and retaining early-entry students and those from URMGs. Our study suggests that providing knowledge and making the opportunity available are not sufficient. Self-doubts, competing responsibilities, cultural expectations and financial concerns seemed like insurmountable barriers, even to students who had envisioned careers in science. Helping students to reframe their views of nursing and how they could contribute to their own families and communities was essential. Giving students tools to address the barriers and experiences that allowed them to “feel the role” tipped the balance. In addition, our program had a topical focus, developing nursing science for older adults in minority populations. This approach, while uncommon, provided three advantages. First, it allowed us to emphasize the knowledge gaps that are critically important for nurses to respond to changing demographics. Second, the topic was of immediate relevance to the students once they understood the relationship between research and policy. Last, oour single focus helped students to build a common bond among cohorts that persisted. Cohort bonding has been identified as essential for recruiting and retaining early-entry and URMG students, particularly in settings where there is a dearth of faculty from URMGs (Peterson et al, 2015). Because of the strong student bond, new early-entry students knew they could seek out support and information about navigating the PhD program from past participants—a grand “paying it forward” effort.

As for nursing culture, findings suggest that perhaps it is time to re-examine our “nursing culture.” These students were warned off of early entry by pre-licensure faculty although there is no empirical evidence that clinical experience is essential for success as a scientist or for excellent research products. In fact early-entry students may have had an advantage because they are freer to ask probing questions about practices that appear self-evident to traditional students. Striving to change the attitudes projected to students by pre-licensure about doctoral education is essential for advancing our science. In addition, as evidenced by the rapid increase in nurses with practice doctorates and decrease in nurses with research-focused doctorates and by some state boards of nursing, our culture tends to be strongly pro-practice and anti-science. Examining why these two are viewed as mutually exclusive and taking action to reconcile the two points of view is essential for our future.

Finally, we would be remiss if we did not mention the issue of time. Admittedly, the mentoring program we implemented was time-intensive. It involved frequent, regularly scheduled meetings and activities taken to the students. During the project we learned some activities could be done virtually, which limited our travel time. We also learned to enlist

more advanced students as peer-advisors/tutors for new students which helped us use our time more wisely and helped the peer-advisors to hone their skills as mentors. Like all nurses in academic positions, we were chronically overextended. In the end, however, we all do what we see as valuable. Our (the authors) commitment to the value of pre-mentoring as a strategy for enhancing diversity among nurse scientists became progressively stronger as we saw students successfully moving into and adjusting to PhD studies and progressing.

Conclusion

Changing demographics and the homogeneity of nursing faculty across the US demands that we develop strategies to encourage younger, more diverse students to pursue PhD degrees in nursing. Through our research, we uncovered the "Seizing Opportunity" model based on the voices of early-entry PhD students who decided to pursue doctoral education. The model suggests that although many pre-licensure nursing students do not know about the possibility of pursuing a PhD in nursing that knowing this is not sufficient for deciding to enroll in a PhD program. Faculty mentors must not only plant the seed for pursuing a doctorate, but also understand the detractors and emphasize the facilitators for the individual student through prementoring which provides the modeling, support and academic advice students from URMGs need to successfully apply and transition into PhD studies.

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Highlights

- American Association of Colleges of Nursing (AACN), NIH among other organizations have policy statements on increasing the numbers of under-represented minority nursing scientists. This early-entry bridges to the doctorate program presents strategies for accomplishing this goal.
- Early pre-mentoring of pre-licensure students can prepare early-entry nursing students apply and transition into PhD studies.
- A model, “Seizing Opportunity” describes the process that URM early-entry students use to make the decision to pursue nursing PhD studies.

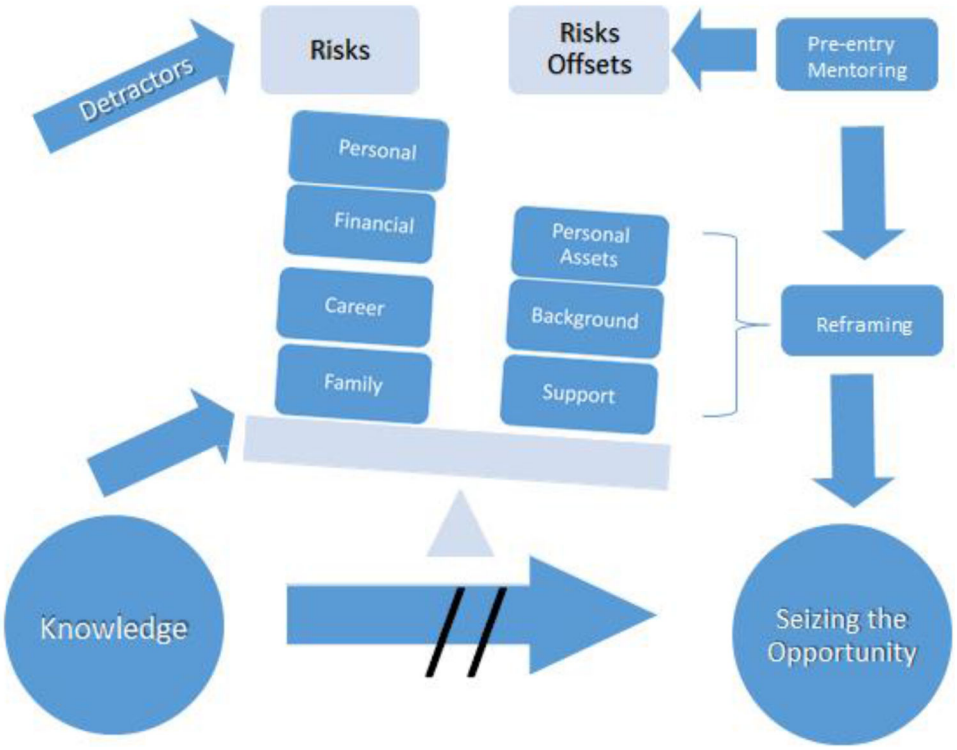

Figure.
Seizing Opportunity