Title: **Population health as a 'platform' for nurse education: A qualitative study of nursing leaders**

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Abstract

Background: Challenges to the sustainability of global healthcare systems are prompting a shift towards more population-focused models of care. Nurse educators need to develop courses that prepare students for population health practice. However, the educational approaches that can support this shift are poorly understood. Publication of new standards for nurse education by the United Kingdom's (UK) Nursing and Midwifery Council that place greater emphasis on population health presented an opportunity to seek nursing leaders' views on population health in nurse education.

Objectives: To assess the views of nursing leaders within a Scottish context on the connection between nurse education and population health for all students, evaluate what student nurses need to know to support population health practice, and draw insights from the UK for pre-registration programmes internationally.

Design: Qualitative interview study

Participants: Twenty-four nursing leaders from academic (n=15), practice (n=4) and regulatory (n=5) sectors

Methods: Semi-structured interviews were conducted face-to-face (n=21), by telephone (n=2) or Skype (n=1). Interviews were transcribed and analysed, using interview questions as structural themes, followed by thematic and content analyses.

Results: Nursing leaders encouraged rebalancing nurse education towards population health, suggesting that population health concepts should sit at the core of spiral curricula to enable students to (re)view learning through a population health lens. Seven outcomes were identified to equip student nurses for practice in any setting. These formed the mnemonic FULCRUM:

Find and interpret evidence; Understand the psychology of behavior and change; Link epidemiology to population health; Consider others and themselves in context; Recognise social determinants of health; Understand the impact of policy and politics on health; Motivate to encourage behaviour change.

Conclusions: FULCRUM can guide nurse educators globally to support preparation of graduate nurses for the significant shifts in healthcare delivery and service organization toward improving population outcomes.

Introduction

Globally, nurses are frequently the first to have contact with populations and advocate for their health. Educators have an important role in preparing nurses to work with diverse populations (Atherton et al. 2017), requiring appreciation of the social determinants of health (SDoH), social justice and health equity, and the knowledge to advocate for populations (Scheffer, Lasater, Atherton, & Kyle, 2019). Even in a country with universal healthcare, such as the United Kingdom (UK), populations may struggle to access healthcare, often leading to stark health disparities, such as lower than average life expectancies. Nurses must be actively involved in healthcare planning, politically engaged, and aware of health literacy needs to influence populations' access to such services (Institute of Medicine, 2010).

Health services in the UK, like many countries, have largely focused on hospital and illness care (Marvasti & Stafford, 2012; National Advisory Council on Nurse Education and Practice (NACNEP), 2016). Yet, there is growing global recognition of the ever-increasing demand for services and finite financial and human resources as well as the inability of an illness model to improve population health (Marvasti & Stafford; Storfjell, Winfield, & Saunders, 2017). As a result, there is need for healthcare systems to turn from a focus on illness care towards a renewed emphasis on improving health outcomes. The role of nurses in this transition and the extent to which they might contribute to new community-focused models of care is an growing area of debate (Atherton et al., 2017; Institute of Health Equity, 2013). In fact, US authors Storfjell, et al. advocate for a revolution in nursing education so that population-focused concepts are integrated into all programmes and are assessed as part of accreditation.

The Nursing and Midwifery Council (NMC), the UK regulator for education programmes, issued revised competencies for pre-registration nurse education in 2018. One notable new element is the second of seven 'platforms,' identifying explicit criteria that educators must demonstrably address in curricula (see Box 1). Platform 2 lists key elements of population health, and the expectation is that by the point of registration, all graduates will have a basic appreciation of population health.

The imperative to meaningfully integrate population health in nurse education is not unique to the UK; however, the UK may be the first to legislate that population health knowledge and skills be part of curricula. The new competencies must be integrated by late 2020 and offer an opportunity for nurse educators everywhere to learn from the challenges of the UK experience.

The National Health Service (NHS) provides universal healthcare, free at the point of use, to everyone across the UK. However, responsibility for healthcare delivery and organisation in Scotland is the devolved responsibility of the Scottish Government. This has resulted in marked differences between Scotland and the rest of the UK (rUK), including provision of financial bursaries for student nurses during education, a national body – NHS Education for Scotland (NES) – to oversee nurse education, and legislation to support integration of health and social care services and safe staffing. Exploring the implications of the new standards with nursing leaders across all schools of nursing in Scotland, as well as practice and regulatory leaders with responsibilities towards Scotland, provided a self-contained case study.

Although the UK competencies were new in 2018, the need for a stronger population focus was evident in UK initiatives and documents from the recent past. For example, the Chief Nursing Officer (CNO) for Scotland's *Nursing 2030 Vision* noted that preparing nurses for future needs and roles requires a focus on 'promoting health and wellbeing and tackling health inequalities' (Scottish Government, 2017, p. 12). Similarly, the CNO in England highlighted that 'a workforce fit for the future' needs to "tackle inequality and break down the barriers that are preventing too many from reaching their potential." (NHS England, 2019). The Royal College of Nursing (RCN) – the professional body for all nurses in the UK –also emphasised the crucial role that nurses play in public health, health promotion and protection, and encouraged nurses to seize opportunities to support people with more than their presenting condition to 'make every contact count' (2016).

By contrast in the US, where there is no universal health care, population health outcomes have been often poorer and health disparities more tenacious than in many other countries (Myers, Lasater, & Hansen, 2018). The advent of the Affordable Care Act (aka Obamacare) in 2010 underscored the need to strengthen the public health workforce and infrastructure (National Advisory Council on Nurse Education and Practice (NACNEP), 2016). The Quad Council (2018), comprised of four US organizations that support community/public health (C/PH), periodically updates competencies needed for three levels of C/PH practice, including novice practice. Presumably, population health content in baccalaureate programmes should equip new graduates to start careers in C/PH practice. However, what <u>every</u> new graduate needs to understand about population health to improve health outcomes was more intentionally laid out in other publications (Kub, Kulbok, Miner, & Merrill; NACNEP; Stornfjell, et

al., 2017). NACNEP has summarized the needs thus: “healthcare organizations need nurses capable of gathering and analysing population-level data, promoting wellness and disease prevention in the community, adopting and disseminating best practices for population health, and identifying patients who may benefit from greater outreach efforts to promote health screening and related primary care services” (p. 5).

Finally, a few authors have offered specific pedagogic strategies for integration of population health concepts and competencies, primarily through students’ community clinical experiences. For example, one US university took a comprehensive approach to reconstruct their advanced nurse practice curriculum, successfully engaging community partners (Myers, et al., 2018). Another recognised the variations of community clinical sites and developed a consistent framework so that regardless of where students had community clinical experiences, they could use the framework for applying population concepts (Valentine-Maher, Van Dyk, Actan, & Bliss, 2014). Clinical placements that represent vulnerable populations were the key to an interprofessional student placement to improve health outcomes in another university programme (Wros, Mathews, Voss, & Bookman, 2015).

The aims of the current study were to: (a) examine issues surrounding the inclusion of population health nursing content in the context of a universal healthcare system; and (b) provide input for nurse educators to turn nursing curricula toward future health education/practice. Specific objectives included:

1. To assess how UK academic, regulatory, and practice leaders perceive nursing’s support of and connection to population health;

2. To determine what UK leaders perceive all pre-registration nursing students need to know about population health practice;
3. To reflect on implications of insights from the UK for pre-registration programmes internationally.

Methods

Design

We conducted a qualitative study, interviewing nursing leaders in Scotland/rUK, which is especially useful to explore new concepts (Tolley, Ulin, Mack, Robinson, & Succop, 2016). Because the new nursing competencies were released the week before the study commenced, we chose an interview methodology to explore the study's aims and start a dialogue within the UK. By using semi-structured interview questions, we gave the participants a great deal of flexibility to explore their initial impressions. Interviews continued for six weeks.

Sample

A purposive sample of 24 nursing leaders were interviewed: 15 academic leaders (ALs), four practice leaders (PLs) and five regulatory leaders (RLs). It was deemed important to hear from deans/heads of school from all Scottish nursing programmes to gain a balanced and comprehensive view of what curriculum changes would mean to future students as well as nurse educators and administrators. Deans/heads of school were contacted by email to schedule interviews or designate others from their programmes. Additionally, practice leaders from the health system in Scotland and leaders from UK-wide regulatory bodies, most of which are headquartered in London, were also contacted to gain wide-ranging perspectives about the future of nursing education in Scotland and rUK. Recommendations for individual regulatory

and practice leader participants arose from the knowledge of two of this paper's authors who are seasoned nurse educators/researchers in Scotland. Many, if not all, of regulatory leaders had been academic leaders during their careers, and many of the academic leaders had been or still were practicing so a mixture of roles was evident among the sample. However, participants are designated throughout this paper by their current role.

Data Collection

Once participants responded, interview dates and times were scheduled, and participants were sent information sheets and consent forms. Consent included audiotaping and transcription of the interviews, which averaged around 40 minutes. Questions were semi-structured so some interviews took slightly different turns, depending on the participant and needed clarification. However, five main questions guided the interviews (see Box 2). Twenty-one interviews took place in person; one was conducted via Skype and two by telephone for those who could not meet in person. To ensure a uniform context for the interviews, a commonly accepted written definition of *population health* was shared at the beginning of each interview: "[population health is] the health outcomes of a group of individuals, including the distribution of such outcomes within the group" (Kindig & Stoddart, 2003, p. 380).

Data Analysis

As nurse leaders, the participants were deemed honest; no major contradictions were noted in the transcripts, affirming the data's credibility. Given the recency of the NMC competencies, participants' ideas were more likely their own than the result of discussions with others (Tolley, et al., 2016). As the transcription process unfolded, the experienced research team began individual immersion in the data (Tolley, et al.). Upon completion of transcription,

the team divided the five main interview questions for in-depth analysis. The foci of these questions became structural codes, a strategy that uses the questions from the data collection tool as codes and allows the research team to more efficiently structure and "bundle" the data for deeper exploration (Tolley, et al.).

Meetings among the researchers guided the analysis process where the data was discussed, often question by question. Each researcher brought his/her own interpretive strategy to the discussion after reading the transcripts. Their intuitive perspectives, as described by Marshall and Rossman (1999) (adapted from Crabtree and Miller, 1992), arose from the data and were shared and verified with the other researchers, resulting in themes and content analyses (Tolley et al., 2016). The data exploring the role of community-based clinical placements to support the *practice* of population health (Box 2 question 5) will be described in detail elsewhere. Our focus here is the development of population health nursing through curriculum design, educational strategies, and student learning outcomes.

Ethical approval

Ethical approval was received from the researchers' academic institutions; data were transcribed and reported anonymously. Individual participants were identified by codes, indicating the sector in which they are leaders and a number to enable tracking of quotations between participants (e.g., AL1 = Academic Leader 1; PL3 = Practice Leader 3).

Findings

Four themes were identified from the data: (1) participants' *initial reactions* to the new NMC standards; (2) *curriculum design* to incorporate population health concepts; (3)

educational strategies to promote population health in the curriculum; and (4) *student outcomes* to support population health practice.

Initial Reactions

Participants mostly thought colleagues would commit to the new standards because they reflect their current understanding of the nurse's role. Some academic leaders acknowledged they had not yet completely read the finalised standards; however, all but one of the practice and regulatory leaders had made contributions to the drafts during their development. Initial views about Platform 2 were overwhelmingly positive. AL15 offered this:

> *I think it's going to be very positive because it's all about impact and making a difference and I think, you know, it's probably going to encourage us to think more in a kind of macro/meso/micro way and possibly to conceptualize and communicate the impact of nursing, and measuring outcomes in particular.*

Several participants mentioned concerns of enabling better integration of population health concepts into nursing curricula and the healthcare culture in the UK, given the current emphasis on hospital care. PL2 mentioned the "*big emphasis on hospitals,*" in the NHS, saying: *"…that is what drives everybody's time and energy, partly because we've got targets and things like that, for how quickly people will be seen and treated."*

Curriculum design

Participants reflected on the extent to which population health should feature in the pre-registration nursing curriculum. The widely held consensus was that it should be a very notable component of contemporary programmes, whether contributing a marked proportion of teaching or being a concept that underpinned curricula. Participants recognised that the

focus on hospital care had become too heavy. Some referred to the change required for UK nurse education as a *paradigm shift* that required major change not only in approaches to teaching but also in educators' understanding of their roles and contemporary health service needs. Such a shift will require those who mentor or precept students to convey a different message as well. AL14 optimistically said: *"I think there is some shift happening, again I think what the NMC standards are proposing helps with some of that (shift)."*

At the heart of curriculum. Participants alluded to the idea of population health being at the core of curriculum. For some, this involved population health being a central priority from early on to emphasize its importance to practice. AL14 stated, "*I think it's pretty high as a priority, and I would place it very high as a priority actually…I am saying it's top priority."* And AL4 said: "*I would like the emphasis of all the education to be centered around population health, public health, promoting health…and all the skills that are required to perform that job well."*

Proportion of curriculum. On being asked what proportion of curriculum should be devoted to population health, the general indication was towards a high percentage. A majority of participants suggested 50% or higher. AL12, for example, indicated at least 50% and even up to 80%. AL12 further reflected that the suggestion of a high percentage was not rooted in evidence but rather something that would act as a clear indication of intent to encourage the paradigm shift from acute to population focus, *"No research-based judgment, just a target to push people's thinking."*

Educational strategies

Participants considered ways that pre-registration programmes could help students grasp the value of population health. Making population health meaningful to students was deemed far from straightforward. As AL13 noted, the concerns associated with the subject are not as immediate or apparent as for other more acute elements of nursing students' learning. What is required are innovative approaches that enable connections between students' practice, regardless of the setting, and population level outcomes. Three key strategies were identified, primarily focused on clinical placements, pedagogical approaches, and harnessing professional development and career opportunities.

Placements. Participants recognised the new potential for an increase in community-based placements, e.g., home care or social service organisations that would assist students make connections between their practice and people's lives. Students could then better understand the challenges of coping with health conditions or changing health behaviours in the realities of lived experiences. AL13 reflected that placements within community-based organisations provide opportunities for a 'paradigm shift' to:

> *really challenge (the students') perceptions, values about people, because when you see a person in hospital, the power generally is all held by professionals – largely – and when you take someone out of their social setting, that environment within which they operate, it's much easier to manage the condition, the treatment…*

AL9 suggested that community-based placements that were returned to during students' programmes would provide a more longitudinal view of how lives change: "*I know it's a bit difficult because they need to fit all these different components into the programme, but*

there could be a way that we actually get them to return to see what's changed or actually just repeat it."

Pedagogy. Participants highlighted the role of pedagogical approaches to facilitate a deep understanding of health promotion and illness prevention. Several approaches were suggested that returned to the idea of population health throughout the programme as there was a recognition that touching on the subject at only one point through the course would be insufficient. The spiral curriculum (Harden & Stamper, 1999) was discussed as one approach. As AL6 suggested: *"If you want that rounded individual at the end to be able to join-up all the dots, then I think you have to keep revisiting and building."*

The manner in which population health content should be delivered was also highlighted by AL3: *"You want to have these students really engaged in what they're learning so that they're not just superficially learning facts, that they're actually thinking and analyzing, because if you don't have critical thinking analytical nurses, then you're back to training automatons that are task-orientated."* Population health requires an interactive approach to encourage students to critically reflect on connections to their own practice.

A further pedagogical approach from AL5, closely linked to small group discussions, was the use of practical questions that tap into population issues around inclusion and exclusion. The example given encouraged students to consider accessibility of patient information:

> *Can they get (information) in other languages? Can they get it as an audio for people that would be discriminated against in getting the information? So they are expected to go out and find that information…to think about slogans that are used; whether they're*

suitable or not for that population. The colors that are used, get them to go out and have a look at the posters on the buses and, you know…does it include everybody?

Simulation was also noted as a strategy to help students connect population issues to their own practice and to connect theoretical ideas to nursing. As AL9 said:

I would really like to make sure that, as I said, not only do the students get the theory of what's actually health promotion etc., but actually, we then start to embed things like simulated practice, so they can actually get experience in trying to promote health in various ways.

Professional and career development. Healthcare is shifting how services are delivered, changing nurses' roles. AL1 suggested that highlighting new career development opportunities would encourage a recognition of the practical realities of engaging in population health, including in more acutely focused roles: *"…trying to encourage them to see other career opportunities, but also you might be an acutely focused person, but you still need to do population health type work."*

Student Outcomes

One question participants were asked to consider was what population health concepts every new graduate nurse needs to know regardless of their career goal, providing a focus on student outcomes at the point of programme completion. Many participants seemed surprised by the specificity of this question. This was unexpected given recent national and international dialogues about stronger emphases on upstream prevention across all contexts of care (NMC, 2018; Stornfjell, et al., 2017). However, AL7 was adamant that hospital nurses need an understanding about population health, saying:

…it is essential because that's where you are faced very often with the consequences of problems around population health… smoking, dietary choices, or lack of choices in many cases, lifestyle choices—so I think that's the first place where you might be offering some health advice or some intervention around behavioural change, and I think not to do that seems to me to be hugely remiss.

Using a content analysis strategy, the research team rank-ordered the frequency of responses to determine what curricular elements participants thought were most essential in pre-registration programmes, regardless of where students intend to practise or their specialty[1]. Many competencies were named by one or several participants, but these seven were most often mentioned. In descending order from more than one-half to one-third of the participants, they include:

Consider others and themselves in context. AL4 bluntly stated that students:

need to understand the person in that bed doesn't just exist as an entity in a bed, they are part of a larger system, whether it's a family system, an ecosystem, a population system…that person is part of something bigger and then (they need) an understanding of what that bigger thing is…to provide a context to understand the condition or the illness that's brought the person into hospital but also a context for the treatment that's applied and then a context for the discharge.

Having a more holistic understanding of health was seen to *"make for a more rounded, mature professional who can deal with the patient in front of them in a far more empathetic, thoughtful, discriminating way about how they might want to advise them in the future"* (RL3). PL4 further said: *"You can't have a meaningful relationship with that person unless you have*

some notion of the world in which they live, which can be incredibly messy and difficult."

Wrapped up in the larger context for many participants was the issue of self-awareness, ensuring that nursing students know how to care for themselves and their communities of origin: *"if they understood how to improve their own health and well-being, we think that would percolate out"* (PL2). AL11 further elaborated that being able to give *"positive health messages and role modelling"* were links between health deterrents and positive lifestyle behaviours, indicating that nurses need these skills.

Finally, AL8 explained:

> *every nurse graduate needs to understand that people spend most of their lives NOT* [our emphasis] *engaged with healthcare or illness care really, but that they live in families, in communities, and they get on with their everyday life. [You can't] help people without understanding where they're coming from and why they're like that.*

Understand the psychology of behaviour and change. Participants indicated that nurses must understand behaviour change to encourage lifestyle changes in others, further explicating that students may not recognise how challenging health behaviour change can be until they themselves must make a change. Some participants noted that most new graduates start in the hospital, but all nurses must be able to offer positive messages for change, regardless of the setting. AL7 gave this example, *"Every nurse should have an understanding of safe drinking, alcohol limits, and every nurse should have an understanding of a least (one) brief intervention around alcohol…trying to move people into thinking about what their choices might be."*

Recognise social determinants of health. Broadly, AL7 noted that nurses need *"an understanding of the variability of health outcomes across populations and why that happens,*

that circumstances, genetics, and environments that people find themselves in, have an impact upon their health and well-being across the lifespan." RL1 expressed: *"You can't be a graduate nurse without understanding determinants of health at a population level and how your interaction with an individual patient will be affected by what's going on in that community and…population."* AL4 added that nurses need to take it a step beyond recognition of the factors that determine health to: *"…really work with and understand how those systems work. So how does housing [sic] or the local authority organise and deliver their services?"*.

Understand the impact of policy and politics on health. Participants recognised that in nursing education, little attention is paid to policy and its impact on health. For students to be effective, they must grasp nursing's role on the political process: *"Student nurses need to know how policy is created and then the influence that policy will have on their practice"* (PL3). *"Every nurse should have an understanding that when they go to the polling station or the ballot box that they're making some choices about people's health and well-being"* (AL7). Others noted a need for nurses to actively advocate for health policy.

Link epidemiology to population health. Students learn about communicable and other diseases that have their etiology in health behaviours, such as cigarette smoking. But according to the participants, nurses need a broader view of epidemiology, extending to social causes of illness, such as housing (Atherton et al., 2017). For example, RL1 stated that students should *"be able to read, to a certain extent, epidemiology, or interpret epidemiology in order to identify what the major issues are that they have a contribution to make around and about."*

Motivate to encourage behaviour change. Participants talked about building relationships so that communication about SDoH and risk factors is possible. For example, AL13

elaborated about therapeutic relationships and how necessary but *"difficult (it is) to ask questions about many behaviours or many things, (such as) sexual history or alcohol consumption."* Several participants mentioned that nurses should be able to use Motivational Interviewing.

Find and interpret data and evidence An evidence-based approach is critical in population health. AL12 boldly stated: *"every nurse, irrespective of where they want to work, should have a knowledge, evidence-based understanding of how to interact, of advice to give, of referral, of agency, of care, of assessment and the relationships between some of those things."* To support this need, AL15 emphasized that evidence in the form of data would make *"population health much more visible than it currently is."*

Discussion

Publication of new standards for pre-registration nursing education in the UK that place greater emphasis on population health for every student presented an opportunity to learn from initial reflections of nursing leaders. Their insights are valuable to shift nurse education toward a greater population focus internationally as well as in the UK. Interviews with nursing leaders found that they were highly supportive of curricula with stronger population health foci. Leaders believed that nursing education must turn towards population health to overcome the significant challenges to the sustainability of resource-intensive hospital-based models of service delivery, to support shifts towards integrated health and social care, and to address limitations of illness-focused healthcare systems to promote health (Atherton, et al., 2017; Marvasti & Stafford, 2012). Unlike the competencies from the Quad Council (2018) in the US, it is not the intention of the UK to prepare new graduates to step directly or only into C/PH

practice but rather to prepare all new graduates to effectively use population health concepts wherever they practise in order to enhance health promotion, illness prevention, and improved population health outcomes. This intention aligns more closely with the NACNEP (2016) purposes.

What our study uniquely adds is an understanding – from the perspective of those who shape nurse education in Scotland and rUK – of the potentially translatable strategies that can support this population health requirement in nurse education. Specific aspects of curriculum design, educational strategies, and student outcomes were pinpointed by our interviewees as central. And indeed, these are noted in US recommendations as well (NACNEP, 2016; Quad Council, 2018).

Curricular design should pivot around population health concepts, and participants suggested that the balance of content should be towards population health. Using a spiral approach to curriculum design (Harden & Stamper, 1999; NACNEP, 2016) could enable educators to revisit core concepts through a population health lens, gradually scaffolding learning for students. In this way, students would be encouraged to think more analytically about approaches to health promotion and illness prevention and to reflect critically on their own role (Atherton, et al., 2017).

Educational strategies that shift students away from task-based competencies focused on psychomotor skills were noted as particularly appropriate. Placement opportunities that encourage students to see and shape SDoH through their role as motivators for health behaviour change and advocates for wider societal action could support the shift. In so doing, a refocus on population health might help the nursing profession overcome its tendency to silo

hospital-based nursing and community-based nursing (Mill, Astle, Ogilvie, & Gastaldo, 2010). This turn would potentially shift students' thinking away from ill individuals in service settings towards improving the health of populations in situ. Connecting students with community-based service organisations for clinical practice has been a particularly effective way to challenge students' understandings of the interaction between the SDoH and individuals' lives, the nursing role, and the extent to which they can influence change with individuals and communities (Wros, et al., 2015). Nurses as the largest group of health professionals have the potential to influence policy at higher levels, but they need experience in advocacy (Institute of Medicine, 2011; Myers et al., 2019).

Student outcomes of population-focused curricula include those closely aligned with population health practice (e.g., recognise SDoH) as well as core nursing competencies that could be enhanced through a population health lens (e.g., find and interpret evidence). Pre-registration programmes globally must determine what each new graduate should know about population health in the context of their geographic areas. While researchers have long recognised SDoH (Dahlgren & Whitehead, 1991), they have remained primarily in the sphere of public health until recently (NACNEP, 2016; Stornfjell, et al., 2017). Issues such as housing and employment play a critical role in the health of individuals and communities around the world, both in the present and longer-term. For example, research has uncovered a critical connection between adverse childhood experiences (ACEs) and chronic health conditions that have potential to shorten life (Felitti, et al., 1998).

To guide development of curricula, we have rearranged the most frequently noted outcomes to form the mnemonic FULCRUM:

Find and interpret evidence
Understand the psychology of behavior and change
Link epidemiology to population health
Consider others and themselves in context
Recognise social determinants of health
Understand the impact of policy and politics on health
Motivate to encourage behaviour change

FULCRUM offers a set of core outcomes to support educators globally to turn nurse education towards population health. These outcomes align with the US goals, outlined by NACNEP (2016) and a recent study that identified 14 key combined global and public health competencies for all new nurse graduates from a systematic review (Clark et al., 2016). One of the 14 was a narrower definition of health promotion/illness prevention than presented by Platform 2 of the NMC Standards, and of the remaining 13, only 'Travel and Migration' was missing from this study's data. The Clark, et al. study affirms the results from the current study. Further, future demands in light of demographic changes increasingly raise questions as to the sustainability of current approaches to healthcare (Beeknoo & Jones, 2017). These changes are not limited to the UK and US so have implications for all countries.

Strengths and Limitations

Our study has notable strengths. First, interviewing UK nursing leaders immediately after the publication of new standards for nurse education provided an opportunity to inform wider development of population-focused nurse education in Scotland and rUK. Second, including nursing leaders from three sectors with different perspectives enabled diverse insights. All participants knew about the new standards, but some had not accessed them recently so were not entirely clear on the details of Platform 2. However, to overcome this potential limitation, Platform 2 was only generally referenced during the interviews. Third,

using a single interviewer, a relative 'outsider' to nurse education in the UK, to conduct all interviews ensured consistency of approach. This also potentially resulted in more candor than might have been if 'insider' interviewers were guiding discussions, thereby highlighting an advantage of international collaboration in nurse education research.

Limitations include that only a few practice leaders were interviewed. It could have been helpful to hear from those who work more directly with students in their clinical placements. This would have allowed insight into their view of a population health perspective in hospital, as well as how nurses working in hospitals understand population health. However, at the time of data collection, very few practice leaders had knowledge about the new standards due to their recency. Finally, the example of Scotland as a case may not generalise to other parts of the UK or further afield due to differences in the educational and practice context.

Conclusion

Healthcare services in many developed countries are challenged by threats to their sustainability due to increasing prevalence of non-communicable disease, demographic trends, and rising delivery costs. A turn towards population health practice should move services from illness-focused, hospital-based models to a renewed emphasis on improving the health of populations where they live. However, this requires a substantial shift in the practice and education of nurses which has tended to silo population health and separate hospital-based and community-based care in practice.

Our study seized the opportunity presented by the new UK standards for nurse education that placed a greater focus on population health to examine academic, practice, and

regulatory nurse leaders' views on population health in curricula. Leaders supported a rebalancing of nurse education toward population health and suggested that population health concepts should sit at the core of spiral nursing curricula. This could enable students to continually build their understanding of population health and bridge existing divides between hospital and community care. FULCRUM was proposed as a mnemonic to guide nurse educators' integration of population health outcomes in nursing curricula and ensure graduate nurses are prepared for these current and future shifts in healthcare delivery and service organisation.

Footnote

[1] Pre-registration students in the UK select one of four practice specialties when they begin their nursing programmes: adult, child, mental health, or learning disability.

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Box 1. Platform Two—Health Promotion, Illness Prevention (NMC, 2018)

At the point of registration, the registered nurse will be able to:

2.1 understand and apply the aims and principles of health promotion, protection and improvement and the prevention of ill health when engaging with people
2.2 demonstrate knowledge of epidemiology, demography, genomics and the wider determinants of health, illness and wellbeing and apply this to an understanding of global patterns of health and wellbeing outcomes
2.3 understand the factors that may lead to inequalities in health outcomes
2.4 identify and use all appropriate opportunities, making reasonable adjustments when required, to discuss the impact of smoking, substance and alcohol use, sexual behaviours, diet and exercise on mental, physical and behavioural health and wellbeing, in the context of people's individual circumstances
2.5 promote and improve mental, physical, behavioural and other health related outcomes by understanding and explaining the principles, practice and evidence-base for health screening programmes
2.6 understand the importance of early years and childhood experiences and the possible impact on life choices, mental, physical and behavioural health and wellbeing
2.7 understand and explain the contribution of social influences, health literacy, individual circumstances, behaviours and lifestyle choices to mental, physical and behavioural health outcomes
2.8 explain and demonstrate the use of up to date approaches to behaviour change to enable people to use their strengths and expertise and make informed choices when managing their own health and making lifestyle adjustments
2.9 use appropriate communication skills and strength based approaches to support and enable people to make informed choices about their care to manage health challenges in order to have satisfying and fulfilling lives within the limitations caused by reduced capability, ill health and disability
2.10 provide information in accessible ways to help people understand and make decisions about their health, life choices, illness and care
2.11 promote health and prevent ill health by understanding and explaining to people the principles of pathogenesis, immunology and the evidence-base for immunisation, vaccination and herd immunity, and
2.12 protect health through understanding and applying the principles of infection prevention and control, including communicable disease surveillance and antimicrobial stewardship and resistance.

Box 2. Semi-structured interview questions

1. What are the attitudes of nurse educators in Scotland toward inclusion of population theory and clinical experience with populations?
2. How should academic programs frame population health as they seek to prepare nurses for the future? What priority should population health have in pre-registration curricula?
3. What does every graduate nurse need to know about population health regardless of their practice intentions?
4. What do nursing leaders think is needed to best prepare students to work with and support population health within the context of the NHS?
5. What could nursing students learn from third sector organizations? How could third sector organizations benefit from nursing students?