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Review Article

New Graduate Nurse Self-Perception of Their Readiness to Practice: An Integrative Systematised Review

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Abstract

Many New Graduate Nurses (NGNs) find the transition to practice stressful. We investigated what is known internationally in relation to NGN self-perceived readiness to practice. We undertook a systematised integrative review of literature published from 2015 to September 2023 in eight electronic databases. Inclusion criteria included articles related to NGNs self-perception of their readiness to practice; English language; full-text; published between 2015 and 2023; and primary research. Inductive thematic analysis was undertaken. Thirteen quantitative and five qualitative studies met the inclusion criteria. Five themes were generated: self-assessed confidence and competence; theoretical and emergent explanations of 'readiness'; preparing for transition and adapting to practice, barriers to and facilitators of transition, and regional variation in undergraduate education and training and conditions on employment. Internationally, NGNs express their self-perceived readiness to practice in reciprocal and refutational discourses. While the challenges associated with transition to practice are well-documented, less clear are the potential causes and optimal solutions. Many NGNs feel under-prepared for practice and over a quarter leave nursing within their first year. In a contemporary healthcare environment burdened by increased complexity and a critical shortage of nurses, we must better understand how to support our junior colleagues and ameliorate attrition rates. Given the jurisdictional differences in nurse education and conditions on employment, international evidence has limited applicability in the local context. In-country research, specifically mixed methods studies, are needed to best inform practice.

Introduction

The world is facing a critical shortage of nurses [1] and not only are we not training enough nurses to replace those that are leaving, over a quarter of those that we do train exit either before beginning or within their first year of practice [2,3]. For those who stay, the transition is tough with New Graduate Nurses (NGNs) experiencing the pressure of their emerging role from within and without- leaving them feeling overwhelmed and stressed [4]; anxious, insecure and inadequate [5]; and lacking in acceptance, respect, and sensitivity from their more senior colleagues [6]. Certainly, NGNs enter a clinical world very different to that they have previously known as a student [7]. As suggested by Christensen et al. [8]:

The unexpected reality of what it means to be a Registered Nurse, the presumption by those already registered as to the capabilities of

the new graduate and the unanticipated expanse of the Registered Nurse role are very real issues for the transitioning student nurse: page number 2786

This concept of reality / transition shock has been an unresolved constant in both the literature and the lived experience of NGNs for the last 50 years [5,9], but in the context of a contemporary healthcare environment dually burdened by increased complexity and a critical shortage of nurses, now more than ever we must better understand how to support our most junior colleagues. In order to do this, we must understand their perceptions of being ready to practice. This is an area lacking in the international and Irish literature. This review aimed to answer the central guiding question: What is known internationally in relation to NGN perceptions of their readiness to practice? The review was undertaken as part of a mixed methods PhD study examining NGN perceptions of their readiness to practice in an Irish context.

Methods

Design

An integrative review with inductive thematic analysis was chosen as the method to synthesise the literature. Common in nursing research, integrative review allows for the inclusion of a breadth and diversity of research [10-12]. The review followed the method described by de Souza et al. (2010) and the Preferred Reporting Items for Systematic Reviews and Meta-Analyses [13] statement (Figure 1 and supplemental file 1: PRISMA checklist). Ethical approval was not required to conduct this review. The review is however part of a PhD study which has received ethical approval by the Dublin City University Research Ethics Committee (DCUREC/2022/208).

Search Methods

A systematic search was conducted across the Academic Search Complete, CINAHL Complete, Education Research Complete, Medline, PsycINFO, Scopus, and Web of Science databases in July 2020, August 2021, and September 2023. To reduce bias against non-published research [14], a search was also conducted in the ProQuest Dissertation & Thesis database. Search terms and keywords were formulated by the authors who then consulted the institutional specialist librarian to ensure the inclusion of all relevant terms and keywords. Following a modified version of PICO (population, intervention, context, outcome), search and surrogate terms were divided into three groups: population (NGNs), context (self-perception), and outcome (practice readiness). Truncation symbols, Boolean operators, and database-specific subject headings and key words were used to search combinations of free text and controlled vocabulary terms, with results filtered using limiters and expanders (supplemental file 2). For the purpose of this review, a NGN was defined as ranging from a final semester student to an Registered General Nurse with up to two years' experience [15-19].

Inclusion and Exclusion Criteria

Inclusion criteria included articles related to NGNs self-perception of their readiness to practice; English language; full text available; published between 2015 and 2023; and primary research. Exclusion criteria included perceptions of NGN practice readiness by those other than NGNs (e.g., managers or educators); self-perception of one concept only (e.g., bullying, caring, decision making, empathy) and articles primarily examining the effect of preceptorship, clinical capstone experience, or an elective intervention such as a Transition Support Programme (TSP).

Search Outcome

The database search yielded a total of 10,569 articles, with a further 23 dissertations and thesis obtained from the ProQuest database. Duplicate records were removed (n = 100) and the remaining records were imported into EndNote 20. Articles were screened by title and abstract with 17 progressing to full text read. Following full text read, a further eight articles were excluded with reason (Figure 1). Of the nine articles and one PhD dissertation that progressed to review stage, a backwards search of the references and a forward search of the citations was conducted, resulting in a further eight articles for inclusion, giving a total of 18 sources for inclusion. The first author completed the selection process under the supervision of the second and third authors.

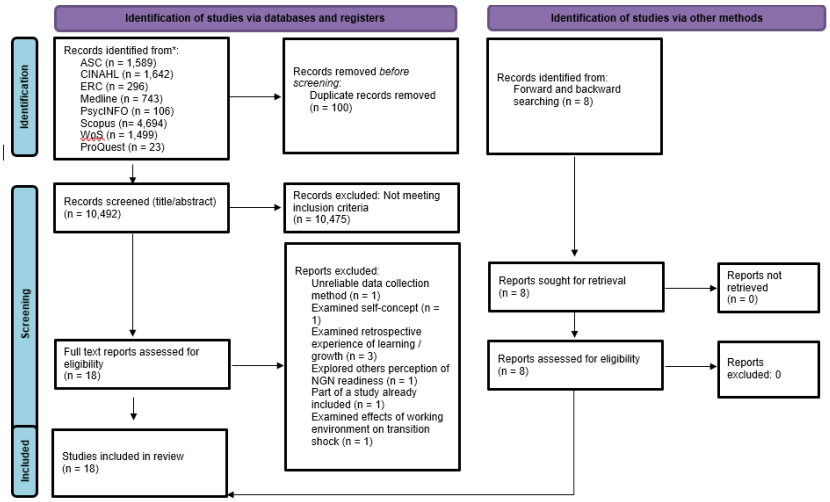

Figure 1: PRISMA chart.

Quality Appraisal

Each source was appraised using the Mixed Methods Appraisal Tool [19]. Scores ranged from 4/7 to 7/7 and all studies were deemed of a quality worthy of inclusion (supplemental file 3).

Data Abstraction and Synthesis

Once records for inclusion were identified, data extraction and synthesis commenced to subdivide, summarise, and organise the data. Data screening, extraction and analysis was conducted by the first author under the supervision of the second and third authors. As suggested by Braun and Clarke (2022, p. 9) [20] "coding quality is not dependent on multiple coders … Good coding can be achieved singly, or through collaboration … if it seeks to enhance reflexivity rather than consensus." General information and key findings from each study were extracted into tabular form (supplemental file 4) and through a process of first, second, and third order interpretation, initial key words, phrases and concepts were coalesced into five themes. This involved an initial read of all articles followed by a full detailed read with data extraction and a third read to generate initial codes and formulate tentative themes. The themes generated were self-assessed confidence and competence, theoretical and emergent explanations of 'readiness', preparing for transition and adapting to practice, barriers and facilitators of transition, and regional variations in undergraduate education and training and conditions on employment.

Results

Study Characteristics

A total of 6,588 NGNs from 22 countries were included in these studies. Respondents were mainly female, aged from under 20 to 62 years, and were either in the final stage of training or in their first year of practice (supplemental file 5). Ten studies reported participants previous healthcare experience. Of these, an average of 54% had prior healthcare experience. The respondents in three studies [16,21,22] undertook a TSP as a normal part of new graduate employment, including one study each from Australia, New Zealand, and Sweden. Thirteen studies employed a quantitative descriptive design, four utilised a qualitative descriptive design, and one a grounded theory design.

One study [22] utilised the Proff-Nurse SAS II [23,24], a 50-item questionnaire based on the Nurse Competence Scale (NCS) [25] and the original NCS [23]. Two studies [21,26] utilised the Casey-Fink Readiness for Practice Survey [27]. Three studies utilised the NCS [3,16,28]. Kuokkanen et al. [28] also utilised the Qualities of an Empowered Nurse (QEN) scale which assesses a nurses' moral principles, personal integrity, expertise, future orientation and sociability [29]. Three studies [18,30,31] utilised the Nurse Professional Competence Scale (NPC). One study [8] utilised The Clance IP Scale [32] and the Preparedness for Hospital Placement Questionnaire for Nursing (PHPQN). Cantlay et al. [32] utilised an investigator-developed online survey which included 37 5-point

Likert scale questions and four open-ended questions across three areas of perception of readiness for practice, clinical preparation for practice and theoretical preparation for clinical practice. Two studies [34,35] utilised the Work Readiness Scale - Registered Nurse (WRS-RN) with Li et al. [35] adopting the 37-item Chinese version and Almotairy et al. [34] adopting a 46-item version. Hallaran, Edge, Almost, and Tregunno [36] utilised an open-ended question as part of a wider study and four studies utilised either structured [37-39] or semi-structured interviews [17].

Theme 1: Self-assessed confidence and competence

Woods et al. [26] and Jamieson et al. (2019) [21] modified the Casey Fink Readiness for Practice Survey to norm with the Australian and New Zealand contexts respectively. Following confirmatory factor analysis Woods et al. [26] identified a three-factor set of subscales: professional identity, ethical practice, and systems of care, while Jamieson et al. [21] identified professional responsibilities, professional preparation and communication as sub-scales. With regard to clinical and relational skills, both studies asked final semester student nurses to identify three skills that cause most discomfort, with the top 10 reported. Similarly, in the study by Cantlay et al. [33] respondents were asked to list the top five skills that caused most discomfort (Table 1).

Woods et al. (2015) *n* (%)	**Jamieson et al. (2019) *n* (%)**	**Cantlay et al. (2017) *n* (%)**
Venepuncture: 57(50)	Bladder catheter insertion irrigation: 119(49)	Intravenous management: 16(33)
Assisting with intubation: 29(26)	Chest tube care: 59(24)	Wound care: 14 (29)
Care of a person experiencing physical trauma: 18(16)	Assessment skills: 22(9)	Indwelling catheter management: 12(24)
Insertion of Guedel airway: 17(15)	ECG monitoring / interpretation: 13(5)	Medication administration: 11(22)
Care of a person experiencing an acute respiratory event: 16(14)	NG tube care: 9(4)	Time management: 9(18)
Recognition of life-threatening shockable arrhythmias: 16(14)	Responding to an emergency changing patient condition: 9(4)	
Spinal stabilisation and spinal precautions: 15(13)	Charting documentation: 5(2)	
Care of a person experiencing a potential threat to airway: 14(12)	Giving verbal report: 1(0.4)	
Cardiac monitoring application and interpretation: 13(11)	IV therapy monitoring: 1(0.4)	
Insulin infusion: 11(10)	Tracheotomy care: 3(1)	

Table 1: Top skills / procedures that cause discomfort.

In relation to NGNs confidence / competence across 20 questions about practice skills, both Woods et al. [26] and Jamieson et al. [21] used a four-point Likert scale, reporting mean score and standard deviation and percentage indicating agreement / strong agreement respectively (Table 2). In these studies, most respondents felt comfortable / confident with most skills, however, in the study conducted by Jamieson et al. [21] a smaller majority felt comfortable caring for a dying patient, with 38% of respondents indicting discomfort with this skill.

	Woods et al. (2015)		Jamieson et al. (2019)	
	N = 113		N = 245	
Item	$\bar{x}$ (SD)	Subscale	Subscale	n (%)
I feel confident communicating with physicians.	2.96(0.74)	PI	Comm	229(93)

I am comfortable communicating with patients from diverse populations.	3.46(0.52)	EP	Comm	240(98)
I am comfortable delegating tasks to the nursing assistant.	2.97(0.6)	EP	Comm	209(85)
I have difficulty documenting care in the electronic medical record.	1.71(0.59)	SoC	PR	24(10)
I have difficulty prioritising patient care needs.	1.72(0.53)	SoC	PR	13(5)
My clinical instructor provided feedback about my readiness to assume an RN role.	3.35(0.71)	PI	PP	234(96)
I am confident in my ability to problem solve.	3.2(0.55)	PI	PP	239(98)
I feel overwhelmed by ethical issues in my patient care responsibilities.	1.97(0.63)	EP	PR	21(9)
I have difficulty recognising a significant change in my patient's condition.	1.83(0.74)	SoC	PR	3(1)
I have had opportunities to practice skills and procedures more than once.	3.03(0.85)	PI	PP	218(88)
I am comfortable asking for help.	3.5(0.61)	SoC	PR	243(99)
I use current evidence to make clinical decisions.	3.27(0.47)	EP	PR	241(98)
I am comfortable communicating and coordinating care with interdisciplinary team members.	3.19(0.53)	EP	Comm	241(98)
Simulations have helped me feel prepared for clinical practice.	2.63(0.85)	PI	PP	175(71)
Writing reflective journals/logs provided insights into my own clinical decision-making skills.	2.36(0.83)	EP	PP	191(78)
I feel comfortable knowing what to do for a dying patient.	2.94(0.74)	EP	PR	151(61)
I am comfortable taking action to solve problems	3.22(0.51)	EP	PR	237(97)
I feel confident identifying actual or potential safety risks to my patients.	3.25(0.5)	EP	PR	237(97)
I am satisfied with choosing nursing as a career.	3.62(0.58)	PI	PP	238(97)
I feel ready for the professional nursing role.	3.22(0.69)	PI	PP	235(96)
*Questions and order from original Casey Fink Readiness for Practice Survey© used to aid comparison Comm: communication, EP: ethical practice, PI: professional identity, PP: professional preparation, PR: professional responsibilities, SoC: systems of care.				

Table 2: Rating of confidence / competence with practice skills (adapted from Woods et al. [26] and Jamieson et al. [21].

Similar to findings by Woods et al. [26] and Jamieson et al. [21] Willman et al. [22] found that NGNs generally scored highest in the consultation, ethics, team working and cooperation, personal responsibility, patient assessment, and self-reflection items. Overall, the highest mean scores were in the 'clinical leadership' and 'cooperation and consultation' components of the ProffNurse SAS II© survey (Table 3). Willman et al. [22] also report the components and items rated lowest in self-assessed competence. These components and items were also scored as the ones in which participants had most need for additional training (Table 4).

Component: Item	$\bar{x}$ (SD)
Cooperation and consultation: I consult other professional experts when required	8.92 (1.82)
Ethical decision making: I act ethically when caring for the patients	8.51 (1.44)
Cooperation and consultation: I cooperate actively with other health professionals when coordinating patients' nursing care and treatment	8.32 (1.67)
Cooperation and consultation: I are cognisant of my medical knowledge is insufficient when assessing patients' health conditions	8.29 (1.85)
Ethical decision making: I maintain an ethical approach towards my colleagues	8.26 (1.62)
Clinical leadership: I take full responsibility for my own actions	8.19 (2.00)
Ethical decision making: I take patients' physical health needs into account when assessing and planning for the health and life situation of patients	8.07 (1.79)
Ethical decision making: I put emphasis on patients' own wishes when assessing and planning for nursing care and medical treatment	7.88 (1.81)
Ethical decision making: I take active responsibility for creating a good working environment	7.82 (1.77)
*: I have a supportive ongoing dialogue with patients about their needs and wishes	7.79 (1.69)

*: item excluded from Proff Nurse SAS I and II© due to low factor loading but listed for consideration in other contexts and larger studies [23].

Table 3: Highest mean scores for self-assessed competence (adapted from Willman et al., [22]).

Component: Item	SAC	NFFT
	$\bar{x}$ (SD)	$\bar{x}$ (SD)
*: I give health promotion advice and recommendations to patients by telephone	3.76 (2.41)	7.51 (2.50)
*: I assess patients' health needs by telephone	3.87 (2.52)	7.6 (2.31)
Direct clinical practice: I have knowledge of the interactions of various types of medication and what side effects they may cause	4.27 (1.94)	8.15 (2.05)
Professional development: I generate a creative learning environment for staff at my workplace	4.54 (2.52)	n/a
*: I report all incidents in accordance with the actual patient safety system	4.59 (2.50)	8.35 (2.02)
Professional development: I improve routines/systems that fail to meet the needs of patients at my workplace	4.71 (2.43)	7.14 (2.10)
Professional development: I participate in quality development at my workplace	4.73 (2.48)	n/a
Direct clinical practice: I exclude differential diagnoses when assessing patients' health conditions	4.93 (1.79)	7.77 (2.03)
Critical thinking: I have a vision of how nursing should be developed at my workplace	5.38 (2.12)	n/a

Direct clinical practice: I have knowledge of the effects of medication and treatment for the patients I am responsible for	5.52 (1.95)	7.72 (2.34)

*: item excluded from ProffNurse SAS I and II due to low factor loading but listed for consideration in other contexts and larger studies [23]. n/a: not in top 10 items in most, or least, need of further training.

Table 4: Lowest mean scores for self-assessed competence (SAC) and highest mean scores for need for further training (NFFT) (adapted from Willman et al., [22].

[18,30,31] utilised the NPC scale to assess NGN self-reported competence / confidence (Table 5). Overall, self-reported competence of graduating nursing students and NGNs with 3-6 months experience across these three studies was good. Kiekkas et al. [30] propose that this suggests students feel they could be better prepared to practice whereas Cantlay et al. [33] suggest it indicates that educational preparation was adequate and effective. Respondents in these three studies rated their self-assessed competence as highest in the area of value-based nursing care and lowest in the area of education and supervision of staff and students, with the remaining 6 competence areas scored variably (Table 6).

	Holowaychuk (2018)*	**Kiekkas et al. (2019)**	**Nilsson et al. (2019)**			
			Total	**Northern Europe**	**Central Europe**	**Southern Europe**
Nursing care	84.03	68.9 (9.9)	79.28 (8.86)	79.05 (8.04)	83.75 (0.75)	77.41 (8.33)
Value-based nursing care	91.59	81.4 (11.7)	86.68 (9.55)	86.62 (8.30)	87.67 (9.52)	86.27 (10.44)
Medical technical care	86.9	68.4 (11.3)	82.45 (9.38)	83.50 (8.26)	85.38 (10.04)	80.20 (9.44)
Teaching/learning support	82.7	74.7 (11.6)	81.05 (10.28)	79.55 (10.15)	83.38 (11.72)	81.15 (9.50)
Documentation and information technology	86.81	64.9 -15.6	82.38 (12.15)	84.49 (11.85)	81.49 (13.40)	80.95 (11.63)
Legislation in nursing and safety planning	85.1	80.4 (13.6)	75.76 (11.52)	75.34 (10.58)	81.27 (11.16)	74.49 (11.72)
Leadership and development in nursing	79.96	73.7 -11.2	78.02 (10.00)	75.61 (9.77)	82.13 (11.03)	78.28 (9.26)
Education and supervision of staff and students	64.9	63.3 -16.3	71.43 (15.40)	70.43 (15.20)	76.81 (15.63)	69.36 (14.80)

*Converted scores not available in text

Table 5: Comparison of self-reported competence across three studies using NPC scale.

	Holowaychuk (2018)	**Nilsson et al. (2019)**	**Kiekkas et al. (2019)**
1	Value-based nursing care	Value-based nursing care	Value-based nursing care
2	Medical technical care	Medical technical care	Legislation in nursing and safety planning
3	Documentation and information technology	Documentation and information technology	Teaching/learning support
4	Legislation in nursing and safety planning	Teaching/learning support	Leadership and development in nursing
5	Nursing care	Nursing care	Nursing care

6	Teaching/learning support	Leadership and development in nursing	Medical technical care
7	Leadership and development in nursing	Legislation in nursing and safety planning	Documentation and information technology
8	Education and supervision of staff and students	Education and supervision of staff and students	Education and supervision of staff and students

Table 6: Self-reported competence across eight areas in descending order of self-assessed competence.

The three studies each correlated self-reported competence differently. Kiekkas et al. [30] correlated self-reported competence with demographics, finding that older students scored significantly higher in the competency areas of 'medical and technical care' and 'documentation and information technology'; that male students scored significantly higher in 'education and supervision of staff and students'; and that students without previous professional nursing experience scored significantly higher in 'nursing care', 'value-based nursing care', 'teaching/learning and support', 'legislation in nursing and safety planning' and the theme of 'patient-related nursing'. Nilsson et al. [31] found statistically higher levels of self-reported competence in students from central Europe compared to students from southern and northern Europe in all competence areas except values-based nursing care. They suggest that this could be partially due to differing undergraduate programme structures, different expectations of students regarding the nature, scope and autonomy of the nursing role, or different expectations of nurses across countries.

Finally, Holowaychuk [18] examined the relationship between grouped direct acute care hours during the final clinical practicum of undergraduate education and self-reported competence during the third to sixth month of employment, finding a statistically significant moderate positive correlation across the competence areas of value-based nursing care, teaching, learning and support, documentation and information technology, leadership in and development of nursing, and education and supervision of staff / students. Similarly, Li et al. [35] found that average internship daily working hours and educational level were determinants of Personal Work Characteristics, suggesting that working longer provides an opportunity to increase and reinforce learning, which develops the necessary skills and confidence to control stress.

Lima et al. [35] assessed NGN competence using the NCS at four time points over the first year of practice (0, 3, 6, and 12 months). NGNs rated their competence as 'rather good' on commencement of practice, 'good' after 3 months, 'very good' at 6 months across all domains except therapeutic interventions and overall, and 'very good' in all domains and overall at 12 months. The exception here was 'ensuring quality', with less than 50% indicating a rating of 'very good' for this domain. In this study, respondents reported a statistically significant gain in competence between commencement and the three other time points, and between 3 months and 6 and 12 months. Gains in competence between 6 and 12 months were not statistically significant.

Kajander-Unkuri et al. [3] similarly utilised the NCS with graduating students in 10 European countries. Students rated their overall competence as being 'good' with the highest scores in the 'helping role' and 'managing situations' domains. Graduating student nurses reported the lowest competence in the areas of 'therapeutic interventions' and 'ensuring quality'. Kajander-Unkuri et al. [3] suggest that one reason for this may be that graduating nursing students still practice under their preceptor's supervision and do not independently care for the most critical and demanding patients. Graduating nursing students in Lithuania and Slovakia assessed their competence lower than those from other countries, while graduating nursing students in Iceland rated their competence highest (Table 7). Respondents in all 10 countries rated each domain and overall competence higher than the respondents in the study conducted by Lima et al. [16].

		Helping role	Teaching - coaching	Diagnostic function	Managing situations	Therapeutic interventions	Ensuring quality	Work role	Overall competence
Kajander-Unkuri et al., 2020	Czech Republic	59.3 (17.1)	61.3 (19.1)	63.6 (19.1)	69.1 (17.8)	63.3 (19.8)	56.5 (20.9)	68.7 (17.5)	64.1 (15.4)
	Finland	71.8 (13.9)	65.4 (14.9)	68.2 (16.0)	63.7 (17.4)	58.5 (18.0)	61.5 (17.9)	60.0 (16.0)	63.5 (13.8)
	Germany	69.1 (13.6)	62.6 (14.8)	67.7 (16.8)	71.5 (14.1)	59.4 (19.0)	58.9 (19.5)	66.2 (14.3)	65.1 (11.9)
	Iceland	75.2 (10.6)	66.3 (15.4)	75.6 (14.6)	71.9 (14.0)	68.3 (13.2)	66.9 (16.5)	66.6 (12.7)	69.1 (11.6)
	Ireland	71.7 (14.2)	63.7 (16.3)	66.6 (16.3)	65.8 (15.8)	60.9 (18.5)	61.7 (18.2)	60.1 (16.8)	63.6 (13.8)
	Italy	72.2 (14.0)	67.2 (15.9)	70.1 (16.1)	70.3 (16.4)	65.9 (16.8)	64.0 (18.2)	68.3 (16.6)	68.1 (14.1)
	Lithuania	55.6 (20.7)	47.3 (19.3)	47.0 (21.5)	52.1 (20.7)	37.0 (22.3)	55.3 (20.0)	53.7 (17.8)	50.0 (16.1)
	Portugal	73.7 (11.0)	67.1 (14.1)	66.1 (15.3)	66.3 (19.1)	66.8 (16.2)	66.6 (16.7)	63.6	66.7 (13.1)
	Slovakia	52.4 (17.4)	52.2 (18.3)	56.3 (19.0)	70.7 (15.4)	56.2 (18.2)	53.8 (18.3)	62.3 (17.6)	57 (15.9)
	Spain	77.4 (11.9)	65.9 (16.3)	67.4 (17.4)	65.7 (17.6)	63.9 (19.0)	70.0 (16.7)	66.3 (16.6)	63.4 (14.9)
Lima et al., (2016)	0 month	45.5 (13.1)	35.0 (14.3)	44.0 (13.6)	41.1 (12.8)	35.9 (13.5)	47.5 (14.6)	39.9 (11.4)	41.4 (10.3)
	3 month	65.5 (15.3)	57.4 (15.8)	62.9 (14.6)	60.0 (14.6)	57.8 (18.0)	62.0 (17.3)	62.0 (15.6)	62.2 (13.9)
	6 month	77.3 (10.9)	71.5 (13.0)	74.5 (12.8)	72.4 (12.8)	67.6 (15.2)	72.9 (16.6)	74.1 (14.6)	72.9 (12.1)
	12 month	84.4 (6.9)	76.2 (10.6)	79.2 (12.2)	76.4 (12.1)	73.4 (13.8)	73.7 (13.9)	76.6 (13.7)	76.7 (10.6)

Table 7: Comparison of self-reported competence across two studies using the NCS.

While Lima et al. [16] and Kajander-Unkuri et al., [3] assessed self-perceived competence across countries, Almotairy et al., (2022) examined the self-perception of nurses educated in another jurisdiction compared to local graduates finding that the mean score in the personal work characteristics dimension varies significantly and that local graduates had higher mean of personal work characteristics compared to foreign graduates.

Kuokkanen et al. [34] utilised the NCS as an independent dichotomous variable to divide NGNs into 'higher' and 'lower' competence groups according to median self-assessed competence score. These scores demonstrated a weak to moderate positive correlation with the five categories of the 'Qualities of an Empowered Nurse Scale' [29], namely moral principles, personal integrity, expertise, future orientedness, and sociability. Variables such as employment sector, age, job satisfaction, work schedule and quality of care in the work unit correlated positively with empowerment; with self-assessed competence having the strongest effect on NGNs empowerment.

Cantlay et al. [33] examined perceptions of practice readiness of graduates of an accelerated Master's programme for second-career students. The majority of graduates in this study had prior healthcare experience while 42% held a prior health sciences qualification. With this previous life, academic and work experience, graduates perceived themselves as being generally ready for practice. In relation to theoretical preparation for practice, 93% of respondents agreed or strongly agreed that they understood pathophysiology, could implement evidence-based nursing, and could use information to enhance care. Perceptions of their ability to meet patients emotional / psychological needs was evenly balanced (48% v 52%) while more respondents disagreed or strongly disagreed that they could 'meet the patients spiritual needs' (69% v 31%). With regard to clinical readiness, respondents rated most highly their ability to recognise their own limitations, assess and manage for risk/error, report incidents, and perform a comprehensive physical assessment. Less than half agreed / strongly agreed that they could respond effectively to clinical emergencies, recognise abnormal lab findings, or supervise care provided by others (Table 8). An open-ended question asked respondents the skills they felt most uncomfortable performing during the first two weeks of practice, the top five being intravenous management, wound care, catheter management, medication administration, and time management. Overall, respondents perceived themselves as most ready in foundational aspects of clinical practice.

Clinical skill	**N (%)**
Recognise personal clinical practice limitations	42 (87%)
Assess and manage for risk/error	41 (85%)
Report an incident that has the potential to	38 (79%)
Be 'detail' orientated in my practice	38 (79%)
Perform a comprehensive physical assessment	38 (79%)
Administer medications by common routes	38 (79%)
Communicate effectively with patients	37 (77%)
Work effectively within a health care team	37 (77%)
Assess and manage risk in patients	36 (75%)
Plan and evaluate nursing care	35 (73%)
Document a legally defensible account of care	33 (69%)
Prioritise patient needs	32 (67%)
Lake independent clinical decisions about required nursing care	31 (64%)
Provide direct care to a minimum of 4 patients	31 (64%)
Know when and how to contact a patients…	30 (62%)
Make decisions about patient care bases on assessment and testing data	29 (60%)
Educate patients about the condition or care	29 (60%)
Perform psychomotor skills	28 (58%)
Demonstrate effective team management	27 (56%)
Care for high acuity patients	27 (56%)
Respond effectively to clinical emergencies	23 (48%)
Recognise abnormal lab findings	20 (42%)
Supervise care provided by others	13 (27%)

Table 8: Self-reporting of clinical readiness (adapted from Cantlay et al. [33]).

Similar to [33], [36] found that NGNs felt underprepared for specific clinical skills (such as caring for central lines, initiating intravenous access, and phlebotomy) and other non-technical skills including having a full patient assignment, managing high patient acuity levels, communicating with physicians, or being placed in-charge. Likewise, participants in the study conducted by Ortiz [17] lacked confidence during their first year of practice, explaining that their confidence fluctuated depending on the nature of the situations to which they were exposed: "If I make a mistake here and there it hurts the confidence and vice versa if I do something well that helps the confidence. So, my confidence has been going up and down lately. It depends on the day" [17].

Christensen et al. [8] examined final year nursing students' feelings

of Imposter Phenomenon (IP) and its relation to perceptions of practice readiness in the United Kingdom, rural and urban Australia, and New Zealand. 45.1% of participants were classified as having moderate imposter phenomenon, 33.4% were classified as having frequently imposter feelings, and 8.3% were classified as often experiencing intense IP. Overall, Christensen et al. [8] found that 38.5% of their sample would classify themselves 'imposters'. A significant difference was found between the four sites for both IP and preparedness for practice, with reliable positive IP differences between New Zealand and Australian rural scores and between Australian urban and rural scores. Reliable positive differences were also found in preparedness to practice scores between New Zealand and Australia rural, New Zealand and UK scores, and New Zealand and Australia urban scores. A significant weak relationship between IP and preparedness for practice was found.

Theme 2: Theoretical and emergent explanations of 'readiness'

One of the challenges in explicating NGNs perceptions of their readiness to practice relates to the fact that 'practice-readiness' is such an ill-defined and nebulous concept [37,38]. Indeed, across the selected studies, practice readiness was viewed variably through many established and emergent lenses. Primarily, discussion centered on self-reported confidence and competence as a method of defining readiness [33]. However, competence is itself a nebulous concept [30] with bodies such as The Australian Nursing and Midwifery Accreditation Council [40] defining it as "the combination of skills, knowledge, attitudes, values and abilities that underpin effective and/or superior performance in a professional / occupational area", and the Nursing and Midwifery Board of Ireland [NMBI] [41,42] as "the attainment of knowledge, intellectual capacities, practice skills, integrity and professional and ethical values required for safe, accountable, and effective practice as a Registered Nurse." As such, competence is a dynamic, integrative, relational, impermanent, personal, and context dependent concept manifested through the nursing functions of helping, guiding, diagnosing, management, therapeutic interventions, quality assurance and professionalism [3,43]. Broader interpretations of competence were adopted by Kuokkanen et al. [28] who theoretically framed their study in the [44] model of empowerment, and by Christensen et al. [8] who examined feelings of imposterism.

NGNs in the study conducted by Cantlay et al. [33] defined readiness in terms of having a "realistic understanding of what you don't know" (p.39), asking for help, independence in basic clinical skills, exhibiting confidence, possessing a generalist foundation, providing safe care, and what the authors theme as "balancing a triad of doing, knowing, and being" (p.35). This reference to Duchscher [5] theory of transition shock and stages of role transition was also made by Ortiz [17] and Mellor and Gregoric [45]. Indeed, both studies found that far from being an 'all or nothing phenomenon' as described Duchscher [9,15], NGNs professional confidence varied over time, with one participant stating:

"I just think it takes a while, months, maybe even years, and I'm the perfect example of that. I need to take my own advice (chuckles) and say 'it's not going to happen overnight'. It just takes a long time and eventually it will get there [17]."

This allusion to the incremental development of knowledge, skill, confidence and competence was further framed by Lima et al. [16] in the Benner [46] model of skill acquisition, and by Draper [47] in van Gennep's [48] anthropological work on the rites of passage. Respondents in the study by Draper (2018) describe their transition as a liminal, variable and non-linear process of separation, transition, and incorporation as they travelled a capricious course from one identity to the next, with one participant offering "the time between waiting for your PIN and actually becoming a staff nurse…you are sort of…in like no man's land, waiting, because you are not a student and you are not a staff nurse" [47] while another suggested:

"The thing I probably did find most difficult, actually going up the ladder from HCA to student and then to a staff nurse. And that is the bit I found much harder because I would sometimes revert back from a student to a HCA and that was difficult for me [47]."

Theme 3: Preparing for transition and adapting to practice.

The nature and duration of clinical placement during undergraduate education influences preparedness for practice. In addition to the development of knowledge and skill, clinical placements help students gain insights into the limits of their ability [33,36]. More, longer, and a broader range of placement along with the opportunity to practice skills multiple times are seen as key [21,26,30] with respondents in the study conducted by Jamieson et al. [21] expressing preference for longer placements over a greater number of placements. NGNs suggest that clinical placements must more closely reflect the realities of practice including being assigned more difficult cases, working longer hours, and an increased case load [39]. While simulation is useful, class size, out-dated equipment, and lengthy time intervals between simulated practice and clinical placement reduce its effectiveness [21,26]. With regard to theoretical preparation, a higher ratio of nursing and bioscience modules is seen as important [21 26,30,33]

Overall, while participants in the study conducted by Jamieson et al. [21] commented that they received adequate undergraduate support to prepare them for practice, participants in the study conducted by McCalla-Graham and De Gagne [39] suggested that being prepared to the level of neophyte nurse did not mean they were fully prepared to function in their first year, citing non-

technical skills, decision making in ambiguous situations, and planning for worst-case scenarios as areas missing from their education and training. Writing reflective journals [21] and being assigned individual and group essays that develop critical thinking skills were considered helpful by some NGNs [30]. However, a majority of participants in the study conducted by Woods et al. [26] stated that reflective journals did not help.

While some NGNs expect to be welcomed to the ward with little need for personal preparation [26], promised support programmes and personnel are not always provided [36,45]. Where preceptorship is available, it is only truly useful when it is conducted by interested preceptors who are willing to teach and provide feedback, and this is not always the case [26,47]. Mellor and Gregoric [45] suggest that nobody can be relied upon to look out for the NGN, so every individual has to create their own environment of support. In this regard, emotional regulation and self-management, situational awareness, being mindful of others' perceptions, staying true to oneself, seeking support, and being proactive are seen as necessary ways of feeling, relating, and doing for NGNs [45].

Theme 4: Barriers to and facilitators of transition

Almotairy et al. [34] noted the influence that the country and university from which NGNs graduated, a second job while working as a nurse, whether nursing was the first career choice, whether the hospital was the first preference and the number of weekly working hours have, while Christensen et al. [8], Ortiz [17], and Draper [47] noted the clinical environment, interpersonal relationships, and availability of support and supervision as important. Mellor and Gregoric [45] suggest that complex hospital cultures are often more challenging to navigate than technical knowledge and individual skills. Indeed, many of the studies included in this review note the effect that work environment has on NGN self-perceived competence and transition to practice. These primarily focus on the process of professional socialisation, the realities of ward management, and realisation of professional responsibility [8]. One respondent in the study conducted by Draper [45] commented:

"I think it is because you are suddenly responsible. Before, somebody was there to guide you. I know you have still got someone to guide you, but before you were always working under somebody and now you are on your own."

Similarly, a respondent in the study conducted by McCalla-Graham and De Gagne [39] noted:

It's very stressful. It's a lot different than it was in nursing school [and] a lot different than it was in preceptorship, when you always had an experienced nurse…you could immediately go to and you had the time to take that time. Once you are out of orientation, you're the one [who] has to make that decision and with very limited experience to call on, it's stressful. Nursing school does not prepare you for that change.

Inadequate staffing, inconsistent educational opportunities, and incivility [22,36,39] are found to limit the NGNs opportunities to learn and to reflect in and on their practice. Participants in the study conducted by Ortiz [17] recounted negative experiences involving communicating with preceptors ("I did not have a good experience with preceptors at all! Just the fact of being yelled at instead of, 'no, this is the right way'") and with other members of the healthcare team ("…this doctor flipped out on me! This was one time where I felt I was right, so I defended myself… I don't think I could have done that a couple of months ago."). Inadequate feedback on performance can limit the NGNs ability to develop and gain insight [17,22]. One participant in the study conducted by Draper [47] noted their experience of preceptorship as "The time that I needed her most obviously she wasn't there and because the ward is so busy …you know, I felt really, how should I say it, at a loss." Conversely, Hallaran et al. [36] found that supportive and accepting clinical areas facilitate transition. One respondent in this study noted "They never made fun of my dumb questions or mistakes but always gently steered me in the right direction" while another stated "a supportive manager means the difference between staying at a job or quitting." [36].

Inadequate staffing levels have the dual effect of increasing nurse-to-patient ratios, further increasing NGN stress levels. Woods et al. [26] found that while 65% of respondents felt very confident caring for two patients at a time, only 48% expressed confidence caring for three patients, and 31% for four. Similarly, Jamieson et al. [21] found that while NGNs felt confident caring for two or three acute adult patients, caring for four or more patients was a concern. A disconnect between what has been learnt in undergraduate education and the actualities of clinical practice can further feelings of dissonance and lack of confidence within the NGN and increase conflict with ENs [8,17,36]. The complexity of care required also appears to influence NGNs' confidence and transition experience. Assigned responsibilities can be beyond the NGNs ability to cope [22] with unrealistic expectations of other staff being a source of stress [36,47]. In addition to the loss of learning opportunities, in situations where NGNs are not guided by a more experienced colleague limited self-insight and an unawareness of the unknown may create risk to patient safety [22]. One participant in the study conducted by Draper [47] commented on this increased responsibility and accountability: "There wasn't somebody at your shoulder…It's just a sudden realisation you know, the buck stops here."

It is unclear what effect age has on self-perceived readiness

to practice as refutational results are found across the studies included in this review. Jamieson et al. [21] and Lima et al. [16] found no correlation between age and levels of confidence; Woods et al. [26] found a small statistically significant inverse correlation between age and confidence in managing a three-patient assignment suggesting that confidence decreased with age; while both Kuokkanen et al [28] and Kajander-Unkuri et al. [3] found a positive correlation between age and levels of empowerment and competence respectively. Equally, Kiekkas et al. [30] found a significant difference in two of eight competence areas, (medical and technical care and documentation and information technology) where confidence scores increased with age. Kajander-Unkuri et al. [3] posit that the chronological age itself may not be the contributing factor rather it is the varying life experience that contributes to confidence in one's competence.

Indeed, Kajander-Unkuri et al. [3] found a significant positive correlation with previous experience and self-assessed competence. However, just as with age, results vary across studies with Kiekkas et al. [3] finding that those with previous professional experience felt less confident in nursing care, values-based nursing care, teaching/learning and support, legislation, and patient related nursing, concluding that differences in metacognitive insight may account for variances between these groups.

While Woods et al. [26] did not find any differences in relation to specific competences, a significant relationship was found between previous health care work experience and confidence caring for two and four patients. Draper [47] studied the experiences of Health Care Assistants (HCA) as they transitioned to the role of student nurses and eventually NGNs, identifying both benefits and disadvantages to this specific prior experience. Despite some of the challenges, such as colleagues having a higher expectation of their ability, NGNs noted that their familiarity with people, places and routines played an important role in facilitating transition. One participant in this study noted: "You know the routine; you know where things are. You know the procedures. You have seen things done time and time again, so I think that actually did help because you knew the way the ward worked" [47]. Similarly, Hallaran et al. [36] found that past experience on a unit, either as part of a clinical placement or while working as an unregulated health worker, positively contributed to NGNs feelings of confidence and acceptance. Kuokkanen et al. [28] did not find previous health care experience to have a statistically significant relationship with NGN level of empowerment.

Theme 5: Regional variation in undergraduate education and training and conditions on employment

Undergraduate theoretical and clinical preparation of students varies across regions. In Australian there is a minimum requirement for 800 hours of clinical placement [16,33], in New Zealand 1400 hours are required [8,21], while in the UK, Ireland, and other European countries delivering nurse education programmes in line with EU directives [49,50] there is a minimum requirement for 2,300 hours. Holowaychuk [18] studied the relationship between grouped direct acute care hours within a senior practicum course in U.S prelicensure nursing education and NGNs perception of professional competence during the third to sixth month of employment, finding a statistically significant moderate positive correlation in five of the eight categories of the NPC scale. However, Holowaychuk [18] suggests that this explains just 15.5% of the variability in the NGNs perception of professional competence with the other 84.5% of NGNs perception influenced by factors such as coping challenges, perceived knowledge deficits, difficulty managing conflict, and difficulty prioritising tasks amongst others.

The structure of clinical hours also differs across countries. Christensen et al. [8] describe how the Australian model allows students to pick and choose units of study meaning that students may have progressed through nearly half their programme with little or no clinical experience. This contrasts with models in Ireland, the UK, and New Zealand where clinical practice is interspersed throughout the full duration of the programme, with Irish student nurses completing a 36-week internship in the final year of their programme. Christensen et al. [8] suggest that increased clinical hours during undergraduate education does not necessarily mean that students are any better prepared for practice. This differs to the findings of Holowaychuk [18].

Factors other than the quantity of clinical exposure during undergraduate education may also play a role in NGN preparedness. Nilsson et al. [31] suggest that variation in self-assessed competence across Europe could be partially explained by the different structures and contents of the respective nursing programmes, students' different expectations regarding the scope of practice and autonomy, or expectations of experienced nurses and healthcare providers in different countries. Kajander-Unkuri et al. [3] equally propose that differences in nursing education are not alone sufficient to explain regional variation in NGN self-assessed competence. Issues in working conditions, the profession itself, remuneration, or workload may also impact on NGN perceptions of competence.

Discussion

Nursing students are unlike many others in that throughout their training they are expected to perform clinically as well as academically [2]. Indeed, as a process and product-based profession, the ultimate aim of any undergraduate general nurse education programme is to prepare the student for professional practice [1,51]. Once registered, NGNs are expected to be

safe, effective, and clinically competent life-long learners that contribute to care across contrasting clinical settings ranging from community to critical care. They are expected to work in the complexity of challenging clinical environments, changing demographics, and continual reform; to practice interdependently and autonomously; and to apply a breadth and kind of knowledge, a range and selectivity of skill, and insight, role, and context of competence to their practice [41]. This requirement to be "technically and organisationally competent in any clinical area where they happens to become employed" is a requirement asked of few other graduates in the same sense that it is asked of nurses [52].

Indeed, one of the challenges for us more experienced nurses in supporting transition to practice is in coming to a common understanding of what and where NGNs are expected to be ready for [37,38,52]. As evidenced from this review, this is no easy task. Nurse education programmes vary across jurisdictions, as do conceptions of practice readiness. Clinical environments, the ratio of nurses to population and patients [21,26,31], health expenditure, length of hospital stay, duration and level of undergraduate education, distribution and length of time in clinical practice as a student, scope of practice, and support on transition equally vary across jurisdictions. Additionally, the readiness of NGNs for practice may be influenced by factors such as relationships with other members of the interdisciplinary team [36,45], unit turnover rate, availability of experienced staff [22], and whether the NGN works in an environment that is sufficiently staffed [2], in a public or private facility [28], in acute or subacute clinical areas, or in a rural or urban setting [45]. Indeed, NGNs by their human nature vary themselves in relation to personality type, age, previous professional experience, competence, confidence, choice of nursing as a career, and personal preparation for transition to practice [36,39]. The length of time it takes to establish a new professional identity also varies from between six months to two years [5,17,18,21] and during this time NGNs both over and underestimate their ability [3,53].

Furthermore, when turning to the international evidence in an effort to inform local solutions we find that, amongst others, study scale, timing, methodology, data collection tools, interpretation, focus, and reporting of results also vary in sometimes reciprocal, but often refutational discourses. Even the concept of transition is viewed variably and is conceptually framed not just in the theories proposed by Kramer [9] and Duchscher [15], but also in ways of being [17,45], imposterism [8], empowerment [28], rites of passage [47], self-concept [5] and Benner's novice to expert model to name but a few [16].

While research into NGNs perception of their practice readiness across jurisdictions provides some insights, the combined effect of all these variables means that we are not truly comparing like with like. While we may discover whether NGNs feel ready or not to practice in their own jurisdiction, it does not tell us much about how ready those NGNs are to practice in other jurisdictions or how ready other NGNs are in other jurisdictions. Thus, country specific research is needed. As suggested by the WHO [1].

"Sustained success in improving nurse retention is likely to be the result of planned, sequenced, multi-policy interventions tailored to the local context. Retention should not be examined or addressed in isolation from the context of other features of the working and living conditions of nurses."

Indeed, given the rate of change in healthcare treatments and technology, it is near impossible for NGNs to commence practice having well-developed therapeutic intervention competence [16], and such research, conducted nationally at regular intervals, could be used to help inform the development of contemporaneous undergraduate degree programmes. This necessity for frequent reviewing of nurse education programmes was recognised by the Expert Review Body in Ireland [54] which recommended a review of the standards and requirements for undergraduate and postgraduate education programmes every five years to ensure that they are aligned with both national and global health priorities.

Evident in the literature is that NGNs do not just transition once, they transition multiple times and in many ways: socially, emotionally, personally, and professionally. Each of these transitions require relevant skills, experiences, capacities, attitudes, and beliefs. Equally evident is that while the majority of NGNs survive their transition how they do so is unclear, especially since, as suggested by Mellor and Gregoric [45], that the supports implemented by successful NGNs are self-initiated. Researching the attitudes and perceptions of NGNs at country level may provide us better insight into the multifactorial concept that is practice readiness [34].

Recommendations

While it is recognised that there is a need to do more to support NGNs in the immediate pre and post qualification period [22] few studies have actually examined NGN self-reported readiness to practice [21] and further research is needed in both a broad and specific sense. In particular, Christensen et al. [8], Holowaychuk [18] and Hallaran et al. [36] call for mixed methods studies to examine this phenomenon in more depth. These studies, they suggest, should use established scales normed to the population and developed over time in conjunction with key intersectoral stakeholders within the jurisdiction to better reflect the idiosyncratic realities of practice. Indeed, given the number of extraneous variables that may limit the applicability of research results from one country to the next, and the lack of primary research in the Irish context, more research is needed in Ireland to better inform policy and practice in this

jurisdiction. Such research may help us better define what a new graduate nurse is, what and where it is that NGNs are meant to be ready for, and what practice readiness actually means to us. Timing here is important to ensure that NGNs perceptions are captured across the timeframe of professional identity development from senior student to NGN [18,34].

The international evidence points to a differentiation between the attainment of specific competencies and competence in a general sense, such as caring for multiple patients simultaneously [3,21,26]. Future research in the Irish context should examine these variables. Self-reported competence also appears to be associated with the perceived quality of the undergraduate programme [30]. Given that undergraduate education consists of a broad range of inputs including the student, the curriculum, the academic and clinical educators, infrastructure and management, and clinical practice sites, these areas also require further examination.

Limitations

While this review may prove useful in synthesising the contemporary literature regarding NGN self-perceptions of practice readiness, it is – as is true for all studies – not without its limitations. Primarily, the intent of the review is perhaps one of the main limitations. As suggested by Holowaychuk [18] and Nilsson et al. [31], self-reported competence may be influenced by a number of variables that are not reported in the individual studies included in this review. Therefore, the picture presented here is equally incomplete. The broad range of countries included in this review provides a breadth of data but not necessarily a depth. Further country specific research is required to determine the practice readiness of NGNs in individual jurisdictions.

Practice readiness is a concept disparately defined by both novice and experienced nurses. A separate review into experienced nurses' perception of NGN practice readiness, or studies that include self-reported competence along with objective measurement of competence [3] may provide a more complete picture.

An additional limitation is the conduct of the review itself. As the review was written as part of a PhD, the first author conducted the review under the supervision of the second and third authors, hence a systematised as opposed to a fully systematic review was conducted. While systematised reviews are an acknowledged convention in postgraduate study [55], the lack of multiple reviewers may introduce a potential limitation.

Conclusion

The gap between nurse education and nurse practice is an acknowledged, enigmatic, and enduring elegy in both the literature and the lived experience of neophyte nurses. Having been the subject of significant study from varying viewpoints, this gap has in more recent years become synonymised and personified in the parenthetical practice readiness of NGNs. Itself a poorly defined and nebulous concept [37,38], NGN practice readiness is now a topical issue in the contemporary nursing literature [56]. Studies such as those presented here have attempted to explicate NGN readiness to transition to practice in terms of graduate attributes, competence versus competencies, the relationship of readiness to other factors such as age, and barriers and facilitators of transition. Certainly, while the concept of transition shock is well-documented, less well documented are the potential causes and optimal solutions – despite the wealth of literature on TSPs, preceptorship models, and clinical support personnel amongst others [4,6,37,57].

It is said that the fundamental aim of any undergraduate nurse education programme is to prepare the student for professional practice, but a more accurate description of undergraduate educations aim would be that it prepares the novice nurse for a minimum safe level of professional practice [3,8]. Undergraduate programmes simply cannot and are in no way designed to prepare students to be fully ready to practice in infinitely diverse settings, experiences, and expectations. As suggested by Darbyshire et al [52] the requirement to be "technically and organisationally competent in any clinical area where they happen to become employed" is a requirement asked of few other graduates in the same sense that it is asked of nurses. As a profession, we must recognise that graduates will never be wholly prepared for practice on any one particular unit and it is therefore up to the us – the more experienced educators, regulators, researchers, practitioners and policy makers to support and develop our novice registrants [28,58]. Before we can do this, we need to better understand NGNs perceptions of their own readiness to practice. This is an area lacking in both the international and Irish literature.

Relevance to Clinical Practice

Given the differences in nurse education and conditions on employment across jurisdictions, international evidence has limited applicability in the local context and in-country research, specifically mixed methods studies, are needed to best inform practice.

As undergraduate education consists of a broad range of inputs including the student, the curriculum, the academic and clinical educators, infrastructure and management, and clinical practice sites, these areas also require further examination.

Many NGNs feel under-prepared for practice. In a contemporary healthcare environment dually burdened by increased complexity and a critical shortage of nurses, we must better understand how to support our junior colleagues and ameliorate attrition rates at local level. Turning to the international evidence in an effort to inform local solutions may offer some insight but to truly address

the problem each health system needs data distinct to their own jurisdiction.

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