Qualified nurses rate new nursing graduates as lacking **skills** in key clinical areas

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Qualified nurses' rate new nursing graduates as lacking skills in key clinical areas

Abstract:

Aims and objectives. The aim of this study was to explore perceptions of qualified nurses on the abilities of newly registered nursing graduates to perform a variety of clinical skills.

Background. Evidence from the literature suggests that undergraduate nursing programs do not adequately prepare nursing students to be practice-ready on completion of their nursing courses.

Design. A descriptive quantitative design was used.

Methods. Participants were recruited through the Australian Nursing and Midwifery Federation, Victorian branch. A brief explanation of the study and a link to the survey were promoted in their monthly e-newsletter. A total of 245 qualified nurses in the state of Victoria, Australia participated in this study. A survey tool of 51 clinical skills and open-ended questions was used whereby participants were asked to rate new nursing graduates' abilities utilising a 5-point Likert scale.

Results. Overall participants rated new nursing graduates' abilities for undertaking clinical skills as good or very good in 35.3% of skills, 33.3% were rated as adequate and 31.4% rated as being performed poorly or very poorly. Of concern, essential clinical skills such as critical thinking and problem solving, working independently and assessment procedures were found to be poorly executed and affecting new RN graduates' competence.

Conclusion. The findings from this study can further serve as a reference for nursing education providers to enhance nursing curricula and work collaboratively with healthcare settings in preparing nurses to be competent, safe practitioners on completion of their studies.

Relevance to clinical practice. Identifying key areas in which new nursing graduates are not yet competent means that educational providers and educators from healthcare settings can focus on these skills in better preparing our nurses to be work-ready.

Key words: Quantitative, New nursing graduates, clinical skills, competence, questionnaire

Summary Box

What does this paper contribute to the wider global clinical community?

- This survey is a practical method of rating abilities of nursing graduates in specific key skill areas, and highlights areas that require further investigation.
- Findings indicate key skill areas in which new nursing graduates do not perform well during their first year of employment. By identifying these areas tertiary institutions and healthcare services can allocate resources to better prepare new nursing graduates.

INTRODUCTION

This research aimed to determine perceptions of qualified nurses employed in Victoria, Australia, on practice readiness of newly registered nursing graduates, focusing in particular on their abilities to undertake clinical skills. Internationally, debate around clinical performance of nursing graduates has been highlighted over the last two decades (Somerville et al. 2000, O'Connor et al. 2001, Wolff et al. 2010, Haddad et al. 2013, Theisen & Sandau 2013). Changes in healthcare, including increased acuity of care, greater use of technology and increased numbers of hospital admissions due to an ageing population and higher prevalence of chronic disease mean that the issue of nurse graduates' competence continues to escalate (Morrow 2009, Health Workforce Australia [HWA] 2014). This paper discusses the results of a survey in which qualified nurses rated abilities of new nursing graduates in a variety of clinical skills undertaken within the clinical setting.

BACKGROUND

The term clinical skills have been defined by National Health Service [NHS] Education for Scotland (2007) as any action performed by nurses involved in "direct patient care which impacts on clinical outcome in a measurable way" (P.11). Therefore the term 'clinical skills' used in this paper collectively refers to technical skills, such as clinical examination and invasive procedures; non – technical skills such as working as part of a team and communication; and cognitive skills such as critically thinking and decision-making (NHS Education for Scotland 2007). Teaching clinical skills are a fundamental component of all nurse education programs. In Australia, to qualify as registered nurses, students must successfully pass the academic requirements of a three year undergraduate

1 degree before becoming registered with the national registration body, the Australian Health
2 Practitioner Regulation Agency (AHPRA). These degrees provide a minimum of 800 hours of
3 workplace clinical practicum for all students in a variety of healthcare settings (HWA 2014).
4 Undergraduate nursing courses leading to qualifications for entry to practice in Australia must be
5 accredited by the Australian Nursing and Midwifery Accreditation Council (ANMAC) to ensure safe
6 patient evidenced-based practice (ANMAC 2013). This professional body monitors and promotes
7 high quality standards and consistency for nursing education in Australia by providing core
8 competency standards for tertiary education providers to use when developing nursing curricula
9 (ANMAC 2013, Nursing and Midwifery Board of Australia [NMBA] 2006). Despite these standards,
10 there are variations in the range of clinical skills taught across the tertiary nursing curricula in
11 Australia, leading to disparities in graduate outcomes (Crookes et al. 2010).

12
13 To assist with the transition from nursing student to qualified nurse, most newly registered nurses
14 seek employment in graduate nurse programs. In Australia, the majority of healthcare services offer
15 formalised twelve month work-based programs, which provide newly qualified registered nurses
16 with supportive learning environments (Healy & Howe 2012). Though these programs are not
17 mandatory, they are highly recommended as a means of assisting new graduates in their transition
18 from dependent to independent practitioner, and for supporting the acquisition and application of
19 clinical skills and competencies. Despite use of these programs, research exploring nursing graduates'
20 perceptions describe their first year of practice as challenging and identify that some graduates
21 struggle with performing clinical skills proficiently due to lack of exposure and practice in their
22 undergraduate nursing studies. (Clark & Holmes 2007, Cubit & Ryan 2011, Walker et al. 2013).

23
24 This paper forms part of a larger mixed methods study using an exploratory sequential design to
25 examine work readiness of newly registered nursing graduates. Phase one incorporated a qualitative
26 approach through interviews with Graduate Nurse Program Coordinators about challenges that new
27 nursing graduates experience in their first year of employment (XXX 2014, XXX 2015). The purpose
28 of this present paper is to report the quantitative findings of phase two, which surveyed qualified
29 nurses about their perceptions of new graduate nurses' (NGN) abilities related to various clinical
30 skills. 'Qualified nurses' is a global term used for all registered nurses (RN), enrolled nurses (EN) and
31 midwives who participated in this study. 'Nursing graduates' are defined in this paper as registered
32 nurses with no more than one year of experience in providing independent direct patient care whilst
33 employed in a general health care service.

METHODS

Design

A descriptive quantitative design was utilised in this study to address the following research question:

- To what extent do qualified nurses perceive that NGNs adequately perform specific clinical skills on commencement of employment?

Sample

In order to select individuals who were representative of the population, we undertook non-probabilistic, purposive sampling (Creswell & Plano Clark 2011). Registered nurses (RNs), enrolled nurses (ENs) and midwives engaged in practice in Victoria at the time of the study were recruited through the Australian Nursing and Midwifery Federation (ANMF) Victorian Branch. The ANMF is a healthcare union in Australia established under the Fair Work Act, run by nurses and midwives, to assist members with work issues, industrial issues or concerns (ANMF 2014). The ANMF Victorian Branch had 66,000 members in 2014 (ANMF 2014), which comprised 70% of all nurses and midwives (93,536) registered with the NMBA in Victoria in December 2013 (NMBA 2014). An invitation to participate was included in the ANMF monthly e-newsletter with a link to the on-line survey, and an explanation of the study was also provided. Qualified nurses used this link to access and complete the online survey, resulting in a final sample size of 245 participants for this study.

Instrument

An online questionnaire was designed by the researchers based on results from thematic analysis of data from phase one of this project, reported previously (XXX 2014, XXX 2015). In phase one, sixteen graduate nurse program coordinators from Victoria, Australia, were interviewed to obtain in-depth information on their perceptions of the strengths, weaknesses and challenges that nursing graduates commonly experience. The questionnaire was developed using Qualtrics® online survey software (Qualtrics 2014), and consisted of 51, five-point traditional Likert items, four open-ended response questions and eleven demographic questions. Demographic data were collected on the participant's age (categorised in 10 year age groups), gender (male, female or other), years registered as a nurse, the setting and country of their undergraduate nursing education, whether they had undertaken any postgraduate studies, their current role, clinical area, experience working as a mentor/preceptor to a nursing graduate/s within the last year, had undertaken or were

currently undertaking a formal graduate program and the type of healthcare setting in which they worked (metropolitan/regional/public/private) at the time of the study.

The questionnaire aimed to elicit data describing nurses' perceptions on new NGNs' abilities in seven key skill areas; routine physical assessment (seven items), technical skills (fifteen items), medication administration (six items), emergency procedures (three items), communication skills (seven items), preparedness for nursing practice (ten items) and coping with the work environment (three items). The response options for each Likert scale item ranged from; very poor, poor, adequate, good and very good, displaying a balanced number of positive and negative values (Polit & Beck 2012). The same Likert response options were used throughout the questionnaire although where it was considered that the clinical skills were not relevant to all clinical areas, questions also included the option 'Not Applicable'. An example of this is an advanced clinical skill such as; 'monitoring epidural infusions'.

Content validity of the questionnaire was determined by an expert panel, comprising nursing academics and clinicians with up-to-date credentials in clinical practice, research or both. The expert panel were asked to rate clarity and relevance on a four-point Likert scale, from 1 (not relevant) to 4 (highly relevant) for each individual question. The independent ratings of each expert's response were then compared to determine the degree of content validity for each question (Polit & Beck 2012). The panel were in agreement on the face validity of the questionnaire and reported a mean Individual Content Validity Index (I-CVI) of ≥ 0.88 exceeding the recommended value of ≥ 0.78 (Polit & Beck 2006). The questionnaire was pilot tested with a small sample of nurses ($n=12$) from eight different healthcare settings and two universities to assess its adequacy and feasibility (Polit & Beck 2012). Following this testing the questionnaire was considered to be usable, providing clear directions for participants (Fink 2013). The internal consistency/reliability of the tool was found to be high indicated by a Cronbach's Alpha of 0.964.

Procedure

Data collection commenced in September 2014, with monthly reminders sent out in the ANMF e-newsletters until data collection ceased in February 2015. Ethics approval was granted by Monash University Human Research Ethics Committee. All survey responses were anonymous. Consent to participate in this research was implied via completion of the questionnaire.

Data Analysis Strategy

Data were entered into SPSS (Version 20; SPSS, Chicago, IL, USA) and descriptive analyses was undertaken. Ordinal data were presented as medians (range one to five) and interquartile ranges (Boone & Boone 2012, Bettany-Saltikov & Whittaker 2013). Results are presented showing perceived ratings of NGNs' abilities on individual clinical skills as numbers and percentages. For ease of reporting, response options from the Likert items have been collapsed from five to three; poor/very poor, good/very good, and adequate.

RESULTS

A total number of 245 participants completed the fifty-one Likert scale questions in Part one of the online questionnaire on NGNs' abilities. Of these, $n=201$ (82%) completed Part two, the demographic data. Table 1 summarises the demographic characteristics of participants. The majority of participants were female (94%), and had been registered as nurses between 0-50 years, (mean 15.2 years, SD 14.0); 45% of participants were aged between 35 to 54 years, 59% had undertaken their nursing education in the university setting, 48% worked in a metropolitan healthcare setting and 67% worked in the public sector.

Insert Table 1 here

For each clinical skill listed in the questionnaire, participants were asked to rate their perceptions of newly registered nursing graduates' abilities on entry to the clinical setting. Table 2 presents the qualified nurses' responses on the abilities of new nursing graduates to undertake clinical skills. Clinical skills were grouped into the following five areas; routine physical assessment, basic technical clinical skills, advanced technical clinical skills, medication administration and emergency procedures. For routine physical assessment skills, manually taking vital signs was rated as the best performed skill, with 62% of participants rating NGNs as being good/very good in this area (median score 4.00, IQR 3,5). Conversely, only 14% of participants rated NGNs as being good/very good in undertaking focused assessments (using inspection, palpation, percussion, auscultation skills) (median score 2.00, IQR 2,3).

Insert Table 2 here

The second key area focused on technical aspects of the RN role, encompassing basic technical clinical skills undertaken on a regular basis in most healthcare settings. In this section participants were given the option to choose 'Not Applicable' if a clinical skill was not considered relevant to their clinical area. These clinical skills had a low percentage of participants (2-7%) describing them

as not applicable, indicating they were relevant to most clinical areas. Administering oxygen therapy, assisting patients with activities of daily living and maintaining infection control procedures were all rated by qualified nurses (52-58%) as clinical skills NGNs performed well, with a median score of 4.00 (IQR 3,5 and 3,4, respectively). Inserting indwelling urinary catheters was identified as being the least well executed, with only 13% of participants rating this clinical skill as being performed at a good/very good standard (median score 2.00, IQR 2,3).

Table 2 also highlights the more advanced technical clinical skills taught in undergraduate nursing education. Only one of these clinical skills, monitoring patient controlled analgesia (PCA) was rated as being performed adequately by NGNs, with 22% of participants describing performance in this skill as good/very good (median 3.00, IQR 2,3). The remaining six clinical skills in this group each had a median of 2.00, with only 5-16% of participants evaluating NGNs' abilities to undertake these clinical skills as good/very good.

Of the six clinical skills related to medication administration, the majority (53-60%) of qualified nurses ranked the clinical skills; adhering to the 'seven rights', calculating the right drug dosages, and administering subcutaneous and intramuscular injections as being performed well by NGNs (median score 4.00, IQR 3,4 and 3,5, respectively). The remaining three medication clinical skills were rated less well, with fewer (29-40%) participants describing these as being performed at a good/very good level (median score 3.00, IQR 2,4 and 3,4, respectively). In relation to emergency procedures, all three clinical skills were generally performed at an adequate level only (median score 3.00, IQR 2,4 and 3,4, respectively).

Table 3 presents participants' rating of NGNs' communication clinical skills. The highest rated clinical skill in this key area was 'interacting with patients/families/significant others', regarded by 51% as being performed at a good/very good level (median score 4.00, IQR 3, 4). The lowest rated clinical skill in this area was 'providing health education to patients' with just under a third (29%) of participants describing this as being performed at a good/very good level (median score 3.00, IQR 2, 4).

Insert Table 3 here

Table 4 illustrates qualified nurses' perspectives on NGNs' preparedness for practice, encompassing the non-technical aspects of a nurse's role. Approximately half of participants (44-59%) rated NGNs as being good/very good at working within their scope of practice, utilising organisational policies and guidelines, maintaining duty of care, confidentiality and privacy, and displaying professionalism

in their role as a nurse (median 4.00, IQR 3,4). The lowest ranked clinical skill in this section was 'working in charge on shifts where relevant', with only 11% rating NGNs' abilities as good/very good in this area (median 2.00, IQR 2, 3).

Insert Table 4 here

DISCUSSION

This research aimed to explore how qualified nurses rated NGNs' abilities to perform various clinical skills. Experiential research investigating perceptions of qualified nurses' in relation to NGNs' clinical skills has been limited, with most research focusing on the perceptions and expectations of the NGNs themselves (Halfer & Graf 2006, Candela & Bowles 2008, Kowalski & Cross 2010, Teoh et al. 2013, HWA 2014). Findings from this study indicated that eighteen of the fifty-one clinical skills were considered to be performed at a good or very good level by the majority of participants, and seventeen as adequate. Overall, these results indicate that NGNs are perceived by more experienced nurses as being safe and competent practitioners, although there are some areas of concern.

Our finding that basic technical clinical skills were rated as being performed adequately or well in 7 out of 8 clinical skills are supported by Lofmark et al. (2006) and Hickey (2009). Hickey (2009) found that 72% of preceptors in their US-based study reported new graduates are able to perform basic technical clinical skills most of the time. The majority of these clinical skills are taught in the first year of nursing, giving most nurses the time and opportunity to consolidate them by the time they graduate. Conversely, Wolff et al. (2010) and Romyn et al. (2009) found that experienced nurses perceived deficiencies in NGNs' performance in basic nursing procedures and physical assessment skills, with a perception among their participants that NGNs did not possess strong psychomotor skills (Romyn et al. 2009). Differences between these studies and ours may have been due to the methodology used as both these studies were qualitative in nature. Comments were highlighted from focus group discussions and individual clinical skills were not assessed.

In our study, nearly one third (31%) of clinical skills were rated by qualified nurses as poorly executed by NGNs. The majority of these clinical skills were related to the technical aspects of the role of the nurse, including six of the seven advanced clinical skills, and the clinical skill, *undertaking focused assessments*. These clinical skills are taught by tertiary education providers in laboratory/simulated settings and practised on real patients during clinical placements in healthcare settings. Clinical practice placement is an integral part of an undergraduate nurse's education. This is where students develop essential experience in the theory and practice of delivering quality

1 patient care under the supervision of registered and competent practitioners (Royal College of
2 Nursing [RCN] 2007, Department of Health [DOH] 2011). In Victoria, each nursing student is
3 allocated a minimum of 800 hours clinical practicum throughout their three years of study in a
4 variety of healthcare settings. An issue highlighted in the literature, is a lack of acute clinical
5 placements for the large numbers of healthcare students, with students sometimes out-numbering
6 nursing staff (Barnett et al. 2011, DOH 2011, Courtney-Pratt et al. 2013). This situation results in
7 students from various health disciplines competing for learning opportunities within the same group
8 of patients, limiting the number of occasions in which nursing students can practise their more
9 advanced clinical skills (Barnett et al. 2011, DOH 2011, Courtney-Pratt 2013).

10 Nursing students' clinical skill acquisition on clinical placements can also be compromised by an
11 increasingly demanding patient workload for supervising RNs (preceptors), leaving limited quality
12 time for one-on-one teaching (Stayt & Merriman 2013, Courtney-Pratt et al. 2013). Providing
13 supervision and support to nursing students in the clinical setting is seen as an additional
14 responsibility for preceptors, with the delivery of optimal patient care remaining their main priority
15 (Courtney-Pratt et al. 2013). Clinical placement issues such as these could explain why there are
16 concerns about the competence of NGNs, particularly in relation to advanced clinical skills. Student
17 numbers and clinical training requirements are predicted to increase, and strategic planning has
18 already commenced in this area with the establishment of the Clinical Placement Networks in
19 Victoria (DOH 2011). These networks are responsible for facilitating clinical placements, increasing
20 placement capacity, monitoring quality indicators and instigating quality improvement initiatives as
21 appropriate (DOH 2011). Further evaluation is required to determine if this planning is contributing
22 to a skilled and competent nursing workforce for the future.

23 A further contributing factor to practice readiness is the variation in undergraduate nursing curricula
24 between tertiary education providers. This issue also creates misperceptions among registered
25 nurses about the expected capabilities of NGNs because of inconsistencies in their clinical skill
26 repertoire (Clark & Holmes 2007, Crookes et al. 2010, Wolff et al. 2010). There is no prescribed core
27 skill set for registered nurses in Australia. The NMBA (2006) have published national competency
28 standards for registered nurses which provide a framework for assessing competence when
29 obtaining and retaining nursing registration and are used to assess nursing students whilst on clinical
30 placement (Australian Nursing Standards Assessment Tool [ANSAT] 2015). However, these
31 competencies are not directly translatable to a prescribed core clinical skillset for NGNs and can be
32 interpreted differently by different education providers (Crookes et al. 2010). These inconsistencies
33 may lead to NGNs not being practice-ready and more significantly, because of insufficient clinical

competence, may potentially lead to unsafe practice and poor patient care (Stayt & Merriman 2013). To dispel these inconsistencies, a core clinical skillset for all graduating nursing students needs to be established collaboratively between tertiary institutions, healthcare services and professional nursing organisations (Crookes et al. 2010). Midwifery Academics (Victoria) [MIDAC] (2010) has created a Victorian standardised clinical assessment tool for midwifery students using both clinical skills-based and Australian Nursing and Midwifery Accreditation Council competency-based clinical assessments. A learning tool has been developed which includes twenty-six clinical skills for student midwives to complete during their midwifery education (MIDAC 2010). A tool similar to this, developed specifically in consultation with all interested organisations for general nursing students to complete whilst undertaking their three year nursing course, would standardise NGNs competencies in core clinical skills on entry to practice. To be effective, these core clinical skills would need to be regularly reviewed for their currency in a continuously changing and evolving healthcare service (DOH 2011).

Most non-technical clinical skills were identified as being adequately performed in this study, although NGN's capacity to critically think and problem solve, described as a higher order thinking skill (Kantar 2014), were perceived to be performed poorly by 39% of participants. These findings concur with Chang et al (2011) who found that nurses with less than five years work experience had the lowest critical thinking ability. Importantly, Chang et al. (2011) identified a positive correlation between critical thinking ability and nursing competence, indicating the higher the nurses' critical thinking ability, the better their clinical competence. To improve the critical thinking abilities of nursing students and ultimately their competence in nursing, tertiary education providers need to invest more in pedagogical approaches to enhance this clinical skill in their programs (Chang et al. 2011).

Strengths and Limitations

This research encompassed a comprehensive set of clinical skills for qualified nurses to rate new nursing graduates' abilities. A study such as this has not previously been reported and provides insight into the clinical strengths and weaknesses of nursing graduates. These findings can be used to inform both educational providers and healthcare settings in developing programs to further assist nursing students/graduates in preparation for practice.

There are limitations inherent in this study. Firstly, this research was undertaken in one state of Australia and therefore findings may not be transferable to other states and internationally. Due to the non-probability sampling utilised in this research, where those with a particular interest in this

subject would most likely respond to the survey, the results are only related to the sample and cannot be generalised to the target population.

CONCLUSION & RELEVANCE TO PRACTICE

This research sought to explore the perspectives of qualified nurses in Victoria, Australia, on the abilities of nursing graduates in key clinical skill areas on commencement of employment in healthcare settings. Our findings demonstrate that while nursing graduates' abilities are rated as good or adequate in the majority of technical and non-technical clinical skills, there are still concerns related to their competence in some of the more advanced and higher order thinking skills required for the registered nurse role. Findings from this study will be of particular interest to tertiary education providers, healthcare settings, nursing educators and preceptors, who can devise pedagogical strategies to further develop these clinical skills in nursing students in both the academic and clinical placement settings. Further, a partnership needs to be established between education providers preparing new nurses, clinical nurses, healthcare settings that hire new nurses, and representatives of professional bodies to prescribe a standard set of core clinical skills and an expected level of competence for all new registered nurses on entry to practice. Study findings also suggest a need for continued use of work-based transition programs for nursing graduates in their first year of employment by all healthcare settings.

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1
2
3

Table 1 Demographic data for sample n=201			
	n	(%)	Missing data
Gender: Female	187	(94%)	2
Male	12	(6%)	
Age:			1
34 years and under	79	(40%)	
35 years to 54 years	90	(45%)	
55 years to 65 years and over	31	(16%)	
Years registered as a nurse (mean, standard deviation)	15.2	14.0	0
Setting of undergraduate nursing education:			0
University	119	(59%)	
Hospital	59	(29%)	
TAFE/CAE	23	(11%)	
Nursing education undertaken in Australia	193	(96%)	0
Undertaken or currently undertaking postgrad studies	113	(57%)	2
Current role:			9
Registered Nurse	71	(37%)	
Clinical manager (NUM, AUM)	25	(13%)	
Clinical education (CNS, CSN, CNE, GNPC)	51	(26%)	
Nurse Academic	4	(2%)	
Enrolled Nurse	26	(13%)	
Midwife	6	(3%)	
Hospital manager (Director, Nurse Coordinator)	9	(5%)	
Worked in the capacity of mentor/preceptor to a nursing graduate/s in the last 12 months.	107	(56%)	11
Undertaken or currently undertaking a formal graduate nurse program.	109	(57%)	11
Healthcare setting in which currently working:			
Metropolitan	68	(48%)	60
Regional/Rural	67	(45%)	
Both	6	(3%)	
Private	34	(30%)	89
Public	75	(67%)	
Both	3	(3%)	
Area of nursing currently working in:			14
Emergency Department	10	(5%)	
Intensive/Critical/Coronary Care Unit	9	(5%)	
Mental Health	4	(2%)	
Residential/Aged care	14	(7%)	
Community	9	(5%)	
Medical	26	(14%)	
Surgical	29	(15%)	
Education	16	(9%)	

Midwifery	12	(6%)
More than one	58	(31%)

Abbreviations= TAFE Technical And Further Education, CAE College of Advanced Education, NUM Nurse Unit Manager, AUM Associate Unit Manager, CNS Clinical Nurse Specialist, CSN Clinical Support Nurse, CNE Clinical Nurse Educator, GNPC Graduate Nurse Program Coordinator.

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Table 2 Qualified nurses' responses (n=245 nurses) on the abilities of new nursing graduates' in undertaking clinical skills on commencement of employment

Group of skills	Median* (IQR)	Poor/ Very Poor	Adequate	Good/ Very good	N/A**	Missing data
Routine physical Assessment						
Manually taking vital signs	4.00 (3,5)	7.7% (19)	30.6% (75)	61.6% (151)		0
Undertaking primary initial assessments	3.00 (2,4)	25.5% (62)	39.5% (96)	34.9% (85)		2
Undertaking secondary assessments (head to toe)	3.00 (2,4)	37.3% (91)	37.3% (91)	25.4% (62)		1
Undertaking focused assessments (using inspection, palpation, percussion, auscultation)	2.00 (2,3)	51.4% (126)	34.3% (84)	14.2% (35)		0
Undertaking mental status assessments using formal tools	3.00 (2,3)	45.1% (110)	41.0% (100)	14.0% (34)		1
Identifying normal and abnormal assessment results	3.00 (2,3)	26.9% (66)	46.9% (115)	26.1% (64)		0
Developing and implementing nursing care based on interpreted assessment data	3.00 (2,4)	39.1% (95)	42.4% (103)	18.5% (45)		2
Basic clinical skills-Regularly undertaken						
Undertaking routine wound management	3.00 (2,4)	25.5% (62)	40.3% (98)	32.1% (78)	2.1% (5)	2
Extracting blood by venepuncture	3.00 (2,3)	44.4% (107)	28.6% (69)	21.2% (51)	5.8% (14)	4
Inserting indwelling urinary catheter	2.00 (2,3)	50.8% (123)	32.6% (79)	13.2% (32)	3.3% (8)	3
Assisting patients with activities of daily living (eg feeding, ambulation, personal hygiene)	4.00 (3,5)	14.0% (34)	21.4% (52)	58.4% (142)	6.2% (15)	2
Maintaining infection control procedures	4.00 (3,4)	15.7% (38)	30.5% (74)	51.9% (126)	2.1% (5)	2
Administering Oxygen therapy	4.00 (3,4)	10.3% (25)	34.2% (83)	52.3% (127)	3.3% (8)	2
Administering and monitoring blood transfusions	3.00 (2,4)	27.7% (67)	36.0% (87)	30.6% (74)	5.8% (14)	3
Administering Intravenous Infusions	3.00 (3,4)	17.9% (43)	35.8% (86)	42% (101)	4.2% (10)	5
Advanced clinical skills						
Inserting intravenous cannulas	2.00 (1,2)	58.3% (141)	12.8% (31)	4.5% (11)	24.4% (59)	3
Inserting nasogastric tubes	2.00 (2,3)	58.6% (142)	22.7% (55)	9.5% (23)	9.1% (22)	3
Managing underwater seal drains	2.00 (2,3)	57.1% (137)	19.2% (46)	7.1% (17)	16.7% (40)	5
Interpreting normal and life threatening ECGs	2.00 (2,3)	64.2% (156)	23.5% (57)	5.0% (12)	7.4% (18)	2
Monitoring Patient Controlled Analgesia	3.00 (2,3)	32.2% (78)	35.1% (85)	21.9% (53)	10.7% (26)	3
Accessing and administering infusions through Central venous lines	2.00 (2,3)	45.5% (110)	24.0% (58)	16.1% (39)	14.5% (35)	3
Monitoring epidural infusions	2.00 (2,3)	50% (121)	15.3% (37)	8.7% (21)	26.0% (63)	3
Medication administration						
Adhering to the seven rights when administering medications	4.00 (3,5)	8.6% (21)	31.1% (76)	60.3% (147)		1

Calculating the right drug dosages	4.00 (3,4)	15.7% (38)	30.0% (73)	54.3% (132)		2
Understanding physiological responses to the medication administered	3.00 (2,4)	28.7% (70)	43.4% (106)	27.8% (68)		1
Administering subcutaneous and intramuscular injections	4.00 (3,4)	11.0% (27)	36.5% (89)	52.5% (128)		1
Medication knowledge, knowing the common medications used	3.00 (3,4)	22.6% (55)	44.9% (109)	32.5% (79)		2
Administering intravenous medications	3.00 (3,4)	16.0% (39)	44.3% (108)	39.8% (97)		1
Emergency Procedures						
Recognising and responding appropriately to deteriorating patients	3.00 (2,4)	34% (83)	34.4% (84)	31.2% (76)	0.4% (1)	1
Administering Basic Life Support	3.00 (3,4)	20.4% (50)	37.7% (92)	36.4% (89)	5.3% (13)	1
Understanding and following MET call/code Procedures	3.00 (3,4)	21% (51)	39.1% (95)	36.6% (89)	3.3% (8)	2

*Median is calculated out of 5; ** N/A applicable for clinical skills and emergency procedures only; Abbreviations: IQR=interquartile range, ECGs Electrocardiographs, MET Medical Emergency Team

Table 3 Qualified nurses' responses (n=245 nurses) on the abilities of new nursing graduates' communication skills on commencement of employment					
Group of skills	Median* (IQR)	Poor/ Very Poor	Adequate	Good/ Very good	Missing data
Communication skills					
Interacting with patients/families/significant others	4.00 (3,4)	17.3% (42)	31.6% (77)	51.2% (125)	1
Interacting with other health care team members	3.00 (3,4)	13.9% (34)	39.8% (97)	46.3% (113)	1
Documenting patient progress in patient notes	3.00 (3,4)	14.4% (35)	36.2% (88)	49.3% (120)	2
Communicating with managers/senior personnel	3.00 (3,4)	17.7% (43)	39.5% (96)	42.8% (104)	2
Providing health education to patients	3.00 (2,4)	37% (90)	34.2% (83)	28.8% (70)	2
Communicating patient changes and new information to colleagues in a timely fashion	3.00 (3,4)	23.9% (58)	38.3% (93)	37.9% (92)	2
Formally handing over patients in their care	3.00 (3,4)	21.3% (52)	44.3% (108)	34.4% (84)	1

*Median is calculated out of 5; Abbreviation= SD Standard Deviation, IQR Interquartile Range

Group of skills	Median* (IQR)	Poor/ Very Poor	Adequate	Good/ Very good	N/A**	Missing data
<i>Preparedness for practice</i>						
Caring for a full patient load	3.00 (2,3)	39.5% (96)	39.9% (97)	20.6% (50)		2
Working independently	3.00 (2,3)	41.0% (100)	36.1% (88)	22.9% (56)		1
Working as part of a team	3.00 (3,4)	16.4% (40)	37.7% (92)	45.9% (112)		1
Working in a timely manner	3.00 (2,3)	41.3% (101)	38.5% (94)	20.1% (49)		1
Working within their scope of practice	4.00 (3,4)	7.7% (19)	32.8% (80)	59.4% (145)		1
Providing leadership to nursing colleagues	2.00 (2,3)	51.3% (125)	33.6% (82)	15.2% (37)		1
Ability to critically think & problem solve	3.00 (2,3)	38.6% (94)	38.3% (93)	23.1% (56)		2
Utilising organisational policies and guidelines	4.00 (3,4)	20.3% (49)	34.3% (83)	45.4% (110)		3
Maintaining duty of care, confidentiality & privacy	4.00 (3,4)	9.8% (24)	30.9% (75)	59.3% (144)		2
Displaying professionalism in their role as a nurse	4.00 (3,4)	10.3% (25)	30.9% (75)	58.8% (143)		2
<i>Coping with the work environment</i>						
Balancing life style with the various shifts	3.00 (2,4)	31.5% (77)	36.9% (90)	30.7% (75)	0.8% (2)	1
Understanding the rostering process	3.00 (3,4)	23% (56)	36.1% (88)	39.7% (97)	1.2% (3)	1
Working in charge on shifts where relevant (eg. Residential aged care/Sub acute areas)	2.00 (2,3)	32.8% (80)	12.3% (30)	10.7% (26)	44.3%(108)	1

*Median is calculated out of 5; ** N/A applicable for coping with the work environment; Abbreviation= SD Standard Deviation, IQR Interquartile Range

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