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Similarities and differences in educational preparation of registered and enrolled nurses in Australia: An examination of curricula content

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ABSTRACT: *Background: Variations exist internationally in the types and numbers of nurses registered to practice. Whilst the United Kingdom has phased out second level nurses, countries such as Australia, New Zealand, Singapore and the United States have maintained a two level system. In Australia, the two levels of nurse authorised to practice are the registered nurse whom complete an undergraduate nursing degree, and enrolled nurse (EN) whom complete either a certificate or diploma programme. Recent changes to educational preparation and resulting scope of practice for ENs have resulted in increased confusion between roles and expectations of the different levels.* ***Aim:*** *This paper reports on findings of a study aimed at identifying differences in educational preparation of the different levels of nurse in Australia.* ***Method:*** *Course coordinators from nine organisations offering pre-registration nursing programmes completed self-reporting questionnaires designed to obtain information on types and lengths of courses, and details of curricula including course objectives, teaching and assessment methods and content areas.* ***Results:*** *Comparative analysis of survey responses identified similarities and differences between registered and EN programmes. Common areas included teaching and assessment methods, core theoretical units and general nursing skills. The diploma and degree programmes appear aligned in most theory and clinical skills. The main difference identified existed between skills taught in the two EN programmes.* ***Conclusions:*** *Findings further add to confusion regarding registered and ENs in Australia. Further research is required to determine expectations of employers and other major stakeholders with regard to the differences.*

KEYWORDS: registered nurse, enrolled nurse, nursing education, skills, role

Variations in nursing workforce configurations throughout the world make it difficult to determine the most appropriate skill mix to ensure safe and effective patient care whilst maintaining healthcare costs (Ayre, Gerdtz, Parker, & Nelson, 2007). Although countries such as Australia, Canada and the USA have maintained a two-tiered system involving registered nurses (RNs) and second level nurses (called enrolled nurses [ENs] in Canada and Australia and licenced practical nurses in the United States), others countries such as the United Kingdom have phased out ENs and utilise only one level of nurse (Heartfield & Gibson, 2005). The perception that both levels of nurse perform similar roles, yet have different recognition for the role, was the rationale given for phasing out EN training in the United Kingdom (Blay & Donoghue, 2006; Chang & Twinn, 1995; Dearnley, 2006; Gibson & Heartfield, 2003).

Currently, in Australia, individuals can register to practice as RNs or ENs, with each level requiring specific knowledge, skills and outcomes for the qualification (Australian Qualifications Framework Council, 2011). To meet these requirements, the RN must successfully complete an undergraduate or graduate entry degree and the EN, a certificate or diploma-level qualification (Nursing and Midwifery Board of Australia, 2010). Though it has been argued that the roles of RNs and ENs differ based on educational preparation and supervision they receive (Francis & Humphreys, 1999; Kenny & Duckett, 2005), changes to educational preparation of ENs have enabled them to work at higher levels and undertake work that was previously only performed by RNs. Introduction of enhanced scope of practice for all Australian nurses in 2006, in response to economic challenges and RN shortages (Milson-Hawke & Higgins, 2003), enabled both RNs and ENs to practice skills in any field in which they are educated, authorised and competent to perform (Australian Nursing and Midwifery Council, 2007; Nursing and Midwifery Board

of Australia, 2007). The role of ENs has since expanded to include many areas traditionally the domain of RNs, such as emergency departments, operating theatres and management (Heartfield & Gibson, 2005; Nankervis, Kenny, & Bish, 2008). Consequently, the national curriculum for ENs was redeveloped to address increasing knowledge and skills required (Department of Education Science and Training, 2007). This subsequently narrowed differences between the two levels of nurse, resulting in role overlap and confusion (Chaboyer et al., 2008; Deering, 2007). Deering (2007) suggests that the educational needs for RNs and ENs are similar as they both undertake many of the same functions.

Changes to educational preparation and roles of ENs have led to discourse within the discipline over differences between the two nursing levels. Whilst generally, RN degrees are undertaken at universities, and EN diplomas and certificates undertaken at Technical and Further Education Colleges (TAFEs) or registered training organisations (RTOs), there are several institutions (both university and TAFE) which offer RN degrees, and EN diplomas and certificates in Australia (Nursing and Midwifery Board of Australia, 2011). Requirements for accreditation of education programmes leading to nursing qualifications are set by the Australian Nursing and Midwifery Accreditation Council (Ryan, 2009a, 2009b). These requirements include key educational content, programme lengths and minimum hours of clinical experience required. The main differences in educational requirements for the two levels of nurse are duration of education, (36 months for RNs versus 12–18 months for ENs), amount of clinical experience (minimum of 800 hours for RNs and 400 hours for ENs), and type of institution (generally higher education provider for RNs versus TAFE or RTO for ENs).

No published research could be identified that compared educational curricula for RNs and ENs in Australia. This study aimed to identify similarities and differences in educational preparation of RNs and ENs in Victoria, Australia. It was expected the findings would provide better understandings of the skills and knowledge of the two levels of nurse on graduation and contribute to role expectations when using these nurses in the skill mix to meet health sector needs.

Methods

A cross-sectional survey design was used to compare educational preparation of RNs and ENs offered by Victorian (Australia) education providers. The survey was designed to gather data on programme lengths, teacher education, teaching and assessment methods, curriculum content and nursing skills included in the different educational programmes.

Participants

Participants were recruited from all Victorian educational providers accredited to offer nursing programmes to prepare RNs or ENs for practice. Selection criteria were: The programme was undertaken in Victoria and run for pre-registration students. Victoria was chosen as the state in which to undertake the project as it has a history of employing the most ENs of every state in Australia (Australian Institute of Health and Welfare, 2009; Nursing and Midwifery Board of Australia, 2013) and has 22% of all EN courses accredited in Australia (Nursing and Midwifery Board of Australia, 2011). At the time of the study, Victoria had 30 educational providers accredited to provide nursing education, 9 offering undergraduate degrees for RNs, and 26 certificate or diploma-level courses for ENs. Five organisations provided undergraduate education for both RNs and ENs. Courses accredited for re-entry to practice, overseas nurses' initial registration, postgraduate entry, double degrees and postgraduate courses were excluded.

Procedure

A self-report questionnaire was developed to obtain details of the educational provider (type and nursing programmes offered); programme details (e.g., teaching hours, teaching and assessment methods); and curriculum content (e.g., theoretical units, professional practice, clinical skills). Item selection and design of the curriculum content section was developed according to the Nursing and Midwifery Board and Australian Nursing and Midwifery Council (ANMC)

competency standards for registered and ENs, Australian Nursing and Midwifery Accreditation Council curriculum accreditation standards, and Australian Qualification Framework (AQF) standards for ENs (Australian Nursing and Midwifery Accreditation Council, 2011; Australian Nursing and Midwifery Council, 2002; Department of Education Science and Training, 2007; Nursing and Midwifery Board of Australia, 2006) These standards were chosen as they are the ones designated by the Nursing and Midwifery Board of Australia against which competency to practice for beginning graduate nurses is assessed for graduate nurses. They include broad aspects of nursing care such as: professional practice; critical thinking and analysis; collaborative and therapeutic practice; and provision and coordination of care. Specific areas of nursing care are listed in Tables 1 and 2. To ensure appropriateness of items in collecting data on course and curriculum data and confirm appropriateness of overall ITs design, the questionnaire was reviewed by experienced academics and by course coordinators at an interstate university, a local Victorian university and a local TAFE college. Feedback resulted in refinement of the original questionnaire to ensure clarity of questions and extra content was added to the survey to ensure it reflected the aims of the study. The final version enabled the same tool to be sent to educational providers that offered both pre-registration RN and EN programmes.

Table 1: Nursing education organisation characteristics

Characteristic	TAFE (5)	Uni (3)	RTO (1)
Course offered			
Certificate IV	1	0	1
Diploma	2	0	0
Cert. & dip.	2	0	0
Cert. & degree	0	1	0
Degree	0	2	0
Average no. students (all years)	81	601	110
Average no. teachers (F/T, P/T, casual)	18	30	5
Average student/ teacher ratio	1:5	1:20	1:22

Prior to conducting the survey, we obtained written permission from the Head of School or Chief Executive Officer of each organisations agreeing to participate; we obtained ethics approval from Monash University Human Research Ethics Committee. Questionnaires, along with an explanatory statement outlining the purpose of the survey, were forwarded to the coordinator of each pre-registration nursing programme. Return of the completed questionnaire to the researcher was taken as consent to participate.

Data analysis

Comparison of education methods, curriculum content and skills was expected to provide data by which to determine differences in educational preparation and outcomes of the different programmes. Educational methods are the means by which depth of knowledge and critical thinking skills are taught to students, so the researchers were keen to investigate whether differences existed in the educational and assessment methods. The educational background of educators is another factor which may influence the ability of the educator to teach higher order critical thinking skills, so this area was another examined by the research. Descriptive statistics were used to provide a depiction of participating educational providers and pre-registration programmes offered, and detailed comparisons of RN and EN curriculum across a range of variables including length of course, method of education, clinical skills taught and knowledge expected of each level. In addition, organisational factors (e.g., qualifications of educators, student–staff ratios) that may influence students' preparation was examined. As scope of practice and hence skill mix in Australia is influenced by the skills that nurses are authorised to perform, the skills taught to each level of nurse were compared.

Results

From the 16 education providers who agreed to participate, 9 completed the survey, with 1 education provider completing the survey for 2 programmes. The final response rate was 56%. Surveys were returned from three universities, five TAFE colleges and one RTO, located in both

Table 2: Theoretical content taught in all programmes

Professional practice areas	
ANMAC competency standards	Incident monitoring and reporting
Collaboration in multidisciplinary teams	Cultural competence
Comprehensive and accurate assessment prior to providing care	Cultural and religious sensitivity
Delegation of care – accountability and responsibilities	Professional code of ethics
Legal requirements for medication administration	OH&S legislation
Legal responsibility in duty of care, confidentiality, privacy acts	Patients rights in relation to health care
Legal studies – common law and nursing practice	Professional code of conduct
Life-long learning and professional responsibility	Resolving issues of moral conflict
Refusal of care/ change of care request processes	Social determinants of health
Requirements of statutory and professional regulation	Professional development needs
Strategies for promotion and protection of patient rights	Scope of practice
Responsibility and accountability for RN, ENs and unlicensed workers	
Critical thinking and analysis areas	
Accurate documentation	Quality improvement processes
Seeking feedback on practice	Development of nursing expertise
Evaluation of nursing activities	Evidence based practice
Reflective practice	
Collaborative and therapeutic practice areas	
Alternative communication methods for non-verbal patients	Continuity of care
Development of therapeutic relationships	Dealing with bullying/harassment
Environment factors influencing patient comfort	Cultural identity in health care
Effective communication techniques	Disability care
Facilitating individual decision making	Professional boundaries
No-lift/ manual handling policies	Mental health
Maintaining dignity during self-care deficits	Rehabilitation needs
Safe medication administration	Strategies to involve family in care
Situations individuals may find threatening, undignified	Standards of infection control
Independence promotion	Team work and negotiation skills
Use of open and closed questions	
Provision and coordination of care areas	
Assisting with activities of daily living	Documentation of care
Emergency management and routines	Health promotion
Implementation of care	Nursing history
Patient assessment techniques	Palliative care
Stress management – self-control in difficult conditions	Pain management
Patient education including illness prevention	Medication administration
Collaborative interventions with other health team members	Evaluation of nursing care
Identification of normal and abnormal assessments	Confidence and capability

regional and urban centres. Characteristics of the educational organisations are listed in Table 1. Variations were found in educational programmes taught by comparable educational institutions. Significantly higher student enrolments and numbers of educators were found in universities

compared to other providers. Student–teacher ratios have been linked with quality of education and may have an influence on the ability of students to refine critical thinking and analysis skills.

Educator qualifications differed between education providers with a much higher level expected for university staff than for other providers. Only universities employed doctorally-qualified staff. Universities also had a much higher proportion of staff with Masters-level qualifications (28 staff out of 89) compared with only three staff in TAFEs and no staff at the RTO having Masters qualifications. The numbers of educators employed by universities with postgraduate qualifications (excluding Masters) was 13 compared with 8 and 2 for TAFE colleges and RTO, respectively. Eighty-two per cent of TAFE educators and 60% of RTO staff held bachelor degrees as their highest qualifications. This may again reflect on the education level of the nurses, with higher qualified staff employed in universities to enable degree students to develop a greater degree of critical thinking and depth of knowledge than second level nurses. This is also reflected in the accreditation standards for nurses in Australia, where educators are expected to hold a qualification higher than the one they are educating the students to.

Programme details

Major differences were found in total theoretical hours between EN and RN programmes (see Figure 1). Whilst lengths of certificate, diploma and degree programmes differed (12 and 18 versus 36 months respectively), both diploma ENs and RNs had similar hours of face-to-face on-campus contact. Degree students undertook nearly 70% of their course through self-directed study, which significantly increased required theoretical content hours stated for the programmes. Self-directed study included preparation of assignments and study for examinations. EN programmes also required students to undertake self-directed study, but this time was not recorded as required theoretical content hours. The certificate programme had fewer contact hours than the other two programmes. Professional placement experience hours for the degree programmes were double those reported for the certificate or diploma programmes.

Common teaching methods included use of lectures, laboratory work, quizzes, directed group work and use of media such as compact discs (CDs) and data video discs (DVDs). Worksheets, student presentations and simulation exercises were used by all except one diploma programme. Notable differences in teaching methods were found between the EN (both certificate and diploma) and RN programmes, with fewer EN programmes using tutorials (43%), reading lists (43%), and on-line resources (57% for on-line modules and 29% for on-line discussions) compared to all RN programmes utilising these methods (100% for each method). The use of on-line resources and self-directed learning by all RN programmes was seen as a main difference between the RN and EN programmes.

A variety of assessment methods were common to all programmes, including assignments/essays, group presentations, clinical reports, oral presentations and practical exams. Also common to degree and diploma programmes was use of theoretically focussed examinations. The main differences between programmes were that 33% of RN programmes used individual presentations and worksheets compared to 86% of EN programmes, and one certificate and one diploma programme used on-line discussion as an assessment option compared to all Degree programmes using on-line discussions (29% of the EN programmes versus 100%).

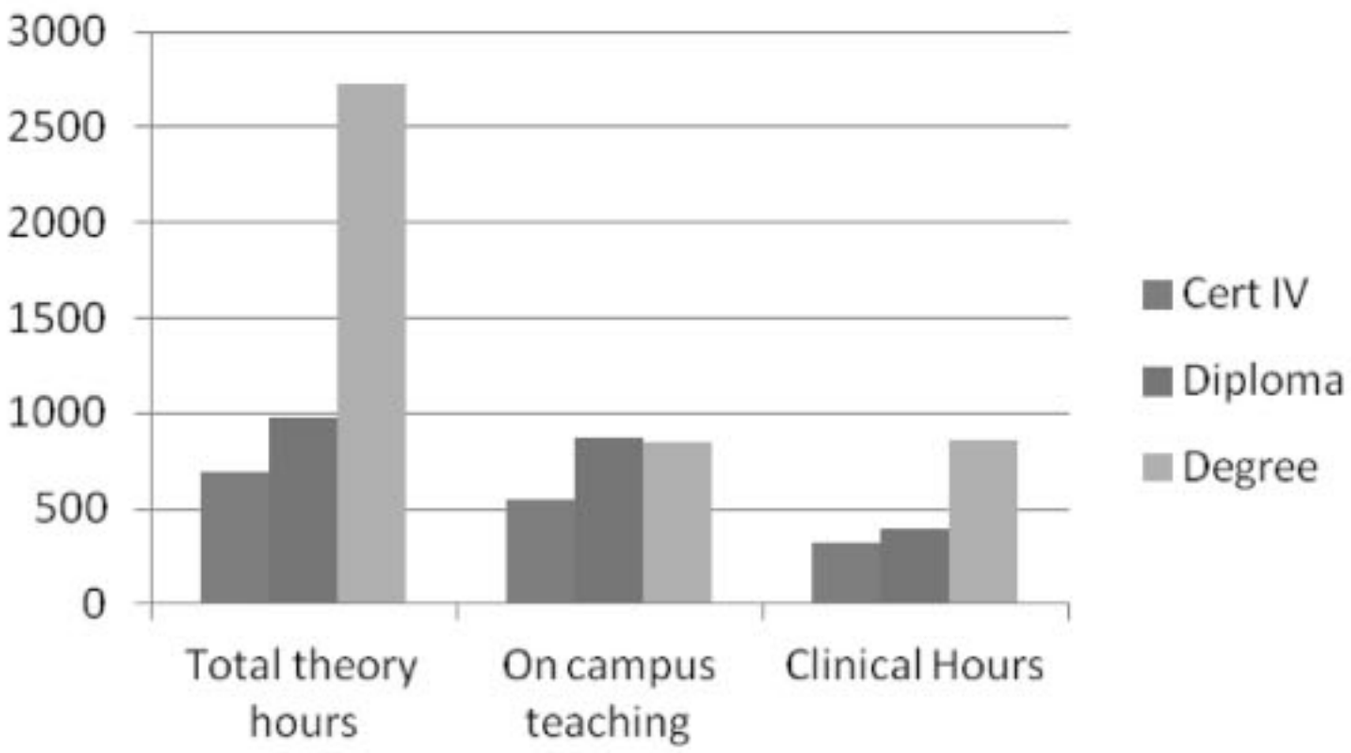

FIGURE 1: COMPARISON OF TEACHING HOURS BETWEEN PROGRAMMES

Curriculum content

Most core units in the nursing curricula were common to all three programmes, with all teaching anatomy and physiology, pathophysiology, pharmacology, mental health, nursing care, professional practice, legal and ethical studies, and communication and interpersonal skills. Health promotion, indigenous health and interprofessional practice were included by most programmes. Also common to 100% of degree and diploma programmes, but only 33% of certificate programmes, was nursing research. Differences were also noted for specific topics areas such as family and gender health, transcultural nursing, and children and adolescents which were identified by participants as being covered by an average of 25% of the RN programmes versus 68% of the EN programmes. Psychology and population health were not identified as being included in most programmes by participants, but could have been incorporated into other topics.

As shown in Table 2, an extensive list of theoretical content was common to all three programmes. Seven critical thinking and analysis content areas relating to documentation, quality assurance, reflective practice and evidence based practice were common to all three programmes. Collaborative and therapeutic practice content was very similar across all three programmes, with only minor variation on some topics.

Greater consistency was identified in content covered by degree programmes than either EN programme. Whilst most 'critical thinking and analysis' areas were

TABLE 3: PERCENTAGE OF PROGRAMMES COVERING SPECIFIED UNITS (CERT = CERTIFICATE, DIP = DIPLOMA)

	EN Cert. (*N* = 3)	EN Dip. (*N* = 4)	RN degree (*N* = 3)
Professional practice areas			
Alternative intervention strategies	67	100	100
Coordination of nursing and health care	67	100	67
Current developments that impact nursing practice	67	100	100
Individual health determination	67	100	100
Monitoring of other staff	67	50	100
Policy and guideline development	33	50	100
Organisational policies and guidelines	67	100	100
Resource allocation	67	75	67
Skill mix requirements for effective care	67	75	100
Undertaking clinical supervision	33	100	100
Critical thinking and analysis content			
Case reviews	67	75	100
Clinical audits	0	75	67
Critical analysis and application of research findings	0	100	100
Current knowledge of research in own field	67	100	100
Development of clinical practice guidelines	33	50	67
Nurse education of students, staff or others	33	50	100
Nursing support networks	67	75	100
Participating in meetings	100	100	33
Performance review processes	67	100	100
Precepting/coaching/instructing and mentoring	0	100	100
Academic writing	67	100	100
Writing literature reviews	0	100	100
Research methods	0	100	100
Role of nurse in contributing to research	67	100	100
Role models in nursing	67	100	100
Student supervision	33	100	33
Undertaking staff/student orientation	67	100	67
Collaborative and therapeutic practice content			
Information technology skills	67	100	100
Information provision to enable control of own health	100	75	100
Interprofessional practice	67	75	100
Providing spiritual care	67	100	100
Role of interpreters	67	100	100
Strategies to affirm individuals	67	100	100
Support networks for individuals/groups	67	100	100

(Continued)

Table 3: Continued

	EN Cert. (*N* = 3)	EN Dip. (*N* = 4)	RN degree (*N* = 3)
Provision and coordination of care content			
Agencies to assist with continuity of care	67	75	100
Clinical judgement	67	100	100
Crisis intervention	33	75	100
Development of goals for individual patient conditions	100	75	100
Development of nursing care plans	100	75	100
Epidemiology	67	75	100
Evaluation of individual health status and function	67	100	100
Gender health development	33	75	100
Identification of resources needed to achieve outcomes	100	75	100
Incorporating knowledge and research into care plans	33	100	100
Initiation of support services	100	75	100
Interpretation of data to identify health problems	67	75	100
Leadership	0	75	100
Lifespan education	67	100	100
Models of care delivery	67	100	100
Patient advocacy in planning nursing care	67	100	100
Referrals to other health providers	100	75	100
Supplementary information for nursing assessments	67	75	100
Technology in nursing and its uses	100	100	100
Time management skills	67	100	100
Use of quantitative and qualitative data to assess patient needs	33	75	100

reported as common to degree and diploma programmes, large differences were noted between certificate and diploma/degree programmes across all areas (see Table 3). No certificate programme included clinical audits, critical analysis and application of research findings, preceptorship or research methods and only one programme covered the development of clinical practice guidelines, nursing education, leadership or student supervision.

Clinical skills

An extensive array of general nursing care skills were taught across all programmes including management of chest pain, tracheostomy care, and basic life support (see Table 4). A total of nine oral medication skills were taught by all three programmes as were assessment of major systems (e.g., cardiac, respiratory, integumentary, neurological). Care of a stoma was the only 'wound management skill' reported as common to all programmes. 'Communication and interpersonal skills,' apart from counselling, were consistently covered across all programmes. Clinical skills are listed under six sub-headings for ease of comparison: Assessment, nursing care, specialist nursing, medication management, wound management, and communication and interpersonal skills.

Variations in skills taught were identified with increasing skill being taught with the increasing level of education. For example, ECG rhythm interpretation was taught in 33% of certificate programmes compared to 50% of diploma programmes and 100% of degree programmes (Table 5). Whilst 'general nursing care' was consistently taught across all programmes, two differences were identified between the programmes: Male catheterisation was not taught in certificate programmes, and bladder scanning was taught in 75% of the diploma programmes compared to 33% of the certificate programmes and none of the degree programmes.

Major differences were identified in the speciality nursing skills taught between the EN and RN programmes. No 'specialist nursing skill' areas were common to all three programmes. With the exception of mastectomy care, the majority of degree programmes consistently taught the other speciality skills listed.

'Medication management' differences were identified between certificate and diploma/degree programmes. Certificate programmes did not include and intravenous medications (IV) and

Table 4: Nursing skills taught in all programmes

Assessment skills	
Cardiac assessment	Neurological assessment
Nutritional assessment	ECG (12 lead) taking
Neurovascular observations	Pulse oximetry
Blood glucose monitoring	Vital sign measurement
Integumentary assessment	Respiratory assessment
Urinalysis/interpretation	Weight measurement
Nursing care skills	
Asepsis, hand hygiene and standard precautions	Activities of daily living – hygiene
Range of movement exercises	Pre and post operative care
Feeding assistance – oral	Feeding – enteral
Management of PEG tubes	NG tube insertion and removal
Breathing exercises	Bed making
Catheter care	TED stocking application
Patient positioning	Manual handling techniques
Management of chest pain	Fluid balance charts
Skin and pressure care	Ambulating patients
Tracheostomy suctioning/care	Basic life support
Specialist nursing skills	
Nil common to all	
Medication management skills	
Subcutaneous & intramuscular injection	Drug chart documentation
Enema and suppository administration	Insulin administration
Topical medication administration	Checking S8 and other drugs
Inhalant therapy	IV site assessment
Oxygen therapy	
Wound management skills	
Ostomy care	
Common communication/interpersonal skills	
Effective communication	Management of personal stress and self-care
History taking	Handover techniques
Conflict management	Documentation
Report writing	

only a percentage of the programmes covered oral medications IV cannulation was only taught in the RN programmes and not in any of the EN programmes.

Discussion

Results from this study identified similarities and differences between EN certificate and diploma programmes, and RN degree programmes offered by participating Victorian educational providers. Similarities between programmes included teaching and assessment methods. The wide variety of teaching methods used in all programmes support the work of McAllister (2001) who states that nursing curricula need to cater for a variety of learning styles and levels of students. This is due to the increasing variation in students entering nursing programmes, with increasing numbers of mature age and students from non-English speaking backgrounds (Carr, 2008). This variation in student entry is seen in both EN and RN programmes. The need to balance practical skills with academic demands also requires educators to use multiple methods of teaching and assessment (Carr, 2008; Hart et al., 2013). Other areas of similarity included specific content areas such as core theory units; general and specialist nursing skills; professional, collaborative and therapeutic practice; provision and coordination of care; and communication and interpersonal skills. These are similar content areas listed as requirements for Baccalaureate Nurse in the USA, which form the basis of nursing education (American Association of Colleges of Nursing, 2008). Despite similarities in assessment methods, the focus of assessment for the different sectors is seen to differ. The TAFE assessment system for ENs is viewed as criterion-based (outcomes based) and the degree programmes in higher education as norm-based (learning based) (Mitchell, 2011). The need to balance the teaching of practical skills and patient care along with academic thinking and an ability to challenge established healthcare norms is an influence in

Table 5: Percentage of programmes which teach specified skills (Cert = certificate, Dip = diploma)

	EN Cert.	EN Dip.	RN degree
Assessment skills			
Abdominal assessment	67	75	100
Geriatric assessment	67	100	67
Paediatric assessment	67	50	100
Patient assessment techniques	67	100	100
Primary and secondary survey	67	75	100
ECG rhythm interpretation	33	50	100
Chest X-ray interpretation	0	25	33
GCS assessment	67	100	100
Health screening	67	50	67
Triage	0	25	33
Arterial blood gas collection	0	25	67
Nursing care skills			
Bladder scanning	33	75	0
Bladder washout	67	50	33
Catheterisation female	67	100	100
Catheterisation male	0	50	67
Nasal suctioning	100	75	100
Oxygen humidification	67	100	100
Specialist nursing skills			
Advanced life support	0	0	100
Cervical collar application	0	0	67
CVAD access and management	0	0	67
Cytotoxic spill management	33	50	100
CPAP ventilation management	0	0	67
Mastectomy care	33	50	33
Seizure management	67	100	100
Oral and pharyngeal suctioning	33	75	100
UWSD management	67	100	100
Venepuncture	67	100	100
Medication management skills			
Blood product transfusion	33	75	100
CVAD medications	0	50	67
Intra-osseous infusions	0	25	33
IV additives	0	75	100
IV cannulation	0	0	100
IV medication administration	0	100	100
IV therapy & IV pumps	0	100	100
Narcotic infusions	33	100	100
Parenteral medications	33	100	100
Patient-controlled analgesia	33	100	100
Peak flow measurement	67	100	100
Syringe drivers	67	100	100
Wound management skills			
Aseptic dressing technique	100	75	100
Wound dressing selection	100	75	100
Care and removal of sutures, staples and drain tubes	100	75	100
Removal of plaster	0	0	67
Plaster care	33	50	100
Donning sterile gloves	100	75	100
Plaster cast application	0	0	2 of 3
Communication/interpersonal skills			
Interviewing techniques	67	100	100
Counselling	33	50	33

the difference in assessment focus. Whilst ENs work as associates to RNs and undertake patient care under RN's supervision, the movement of RN education to the tertiary level was aimed to assist in their ability to influence the development of nursing as a profession and thereby improve their status in healthcare (Carr, 2008).

Common to diploma and degree programmes were critical thinking and analytic skills; application of research findings; additional theory units that included health education, organisational policy, clinical supervision, and leadership; and advanced nursing skills such as venepuncture, IV therapy, care of UWSD, seizure management and medication administration. Close alignment between these two programmes reflects recent changes to the diploma programme to give greater emphasis to critical thinking, leadership, supervision and more advanced clinical skills (Department of Education Science and Training, 2007). Although the results identified similarities in course content, the present study did not determine if there were any differences in critical thinking skills nor depth of teaching of programme content, which has been argued to be the main difference between the different levels of nurse (Keogh, Myers, Kimberley, Twigg, & Davis, 2004), although differences in educator qualifications, teaching foci and programme lengths, may lead to differences in these areas. Nursing curricula

in Australia traditionally provide aims and objectives for each unit offered in the programme, but do not specify the depth of knowledge to be taught. As critical thinking is developed through self-directed learning, this may be influential on outcomes of the RN programmes which have a higher focus on teaching life-long learning skills (Cadorin et al., 2012). The number of clinical hours has also been found to have an influence on the metacognitive skills of nurses (American Association of Colleges of Nursing, 2008; Jacob, Sellick, & McKenna, 2012), and as this study found, the degree has double the number of clinical hours to the diploma, it is one means of RNs developing greater critical thinking.

Comparison of the three programmes identified a number of differences, particularly between the two types of EN programmes. Some of these differences can be attributed to variations in length of programmes (EN certificate 12 months, EN diploma 18 month, and RN degree 3 years), and organisational factors such as teaching (including self-directed study) and clinical hours (Jacob et al., 2012). The main difference between the two types of EN programmes was knowledge and skills covered in the diploma but not the certificate programme. Of particular note is the absence of IV administration and therapy, organisational policy, supervision, research, critical thinking and analysis, information technology (IT) skills and spiritual care. These exclusions may, in part, be due to stronger focus of the certificate programme on basic patient care (e.g., assisting with activities of daily living, monitoring health status, undertaking 'less complex' procedures) which is in line with the traditional role of the EN to assist with patient care under the supervision of a RN (Australian Institute of Health and Welfare, 2006), and the focus of vocational programmes on procedural training rather than conceptual knowledge and theoretical understanding (Melrose & Wishart, 2013).

Variations in training for ENs have resulted in different skill and knowledge levels for nurses accredited at the same level. This has resulted in greater confusion over role expectations, which has been found by several authors in Australia (Chaboyer et al., 2008; Gibson & Heartfield, 2003; McGilvray, 2012). Having both a certificate and a diploma programme for the one registration level produces a second level of EN (Hoodless & Burke, 2009), with one level more closely aligned to the traditional EN role and the other to that of the RN. The Australian Government has recently released a plan to fund government-subsidised places for EN training at diploma-level only (McGilvray, 2012). Accreditation of programmes to educate nurses to certificate level has been ceased in Australia which will see all future ENs educated at diploma-level as certificate programmes accreditation expire (Ryan, 2009a). This will help to decrease confusion over ENs' scope of practice, but whilst ENs with different educational preparation remain in the workforce, difficulty will likely be experienced by employers in determining skill mix for patient allocation. However, consequently this may increase confusion between the roles of diploma and degree prepared nurses.

Similarities in educational skills and knowledge identified in this study generally support the view of Deering (2007) who argued that both levels of nurse have similar educational needs as the roles are often comparable. The expanded EN role is being used in Australia to respond to the shortage of RNs, particularly in rural areas (Hoodless & Burke, 2009). This substitution of RNs with ENs was one reason for the demise of the EN in the UK, as similarities in roles and responsibilities, despite decreased career pathways and status, were seen as exploitation of ENs (Dearnley, 2006). Despite these similarities, differences that exist in RN degree programmes due to the qualifications of educators, programme lengths, increased clinical placement and emphasis on self-directed learning must have an influence on the depth of knowledge and critical thinking skills of these nurses. When determining skill mix in health services, employers must be aware of the differences that exist in education of the different levels of nurse, and the resulting differences in skills, depth of knowledge and critical thinking skills.

Limitations

Despite receiving approval from organisations for the study, only half of the course coordinators

chose to participate in the study. This both increases the chance of sample and researcher biases, and limits the extent to which the findings may be generalised to a wider audience. As such, the findings may not reflect the views of educators at other institutions. However, by comparing the results with the wider literature, some similarities and differences have been identified that reinforce the trustworthiness of the findings, whilst also demonstrating the contribution this study offers in terms of better understanding the educational preparation of the two levels of nurse educated in Australia. Although EN education has a standardised training package for the whole of Australia, this study was undertaken in only one state in Australia, and hence it may not be representative of the wider population. Furthermore, responses were dependent on respondents having good understanding of the whole of their educational programmes.

As mentioned previously, whilst the study examined curriculum content, it did not investigate differences in depth of learning and critical thinking which may be a significant difference between different nursing levels, although it did identify areas in the programmes that may result in these differences. Expectations of student learning during clinical experience were not explored, which may also contribute to differences in depth of learning and critical thinking of graduate nurses.

Conclusion

Changes to scope of practice guidelines and educational preparation have greatly enhanced abilities of ENs to function at higher levels within the health care system, undertaking aspects of nursing roles previously only held by RNs. The results of this study indicate greater similarity in curricula content between degree prepared RNs and ENs educated at diploma and degree nursing programmes than previously existed with EN educated at certificate level. Whilst RN programmes continue to cover more high acuity skills than diploma ENs, increasing similarities in education suggest that both nursing levels are being prepared for closer comparison of roles on graduation. Another major issue identified from this study was difference between certificate and diploma programmes, both of which prepare individuals for EN registration. Such difference has important educational and manpower implications. Whilst both level of ENs are employed in health services, supervising clinical RNs must be able to identify differences in scope of practice for the various levels of EN to enable safe patient allocation and effective workload distribution.

Recommendations

As critical thinking, patient assessment and high acuity skills are seen to be at higher levels in graduate RNs, care must be taken when changing skill mix to ensure that patient deterioration and complex care needs continue to be met. While ENs provide a supporting role to RNs in providing nursing care, the responsibility for supervision, critical thinking, managing complex and deteriorating patients remains with RNs. With the Australian Government's emphasis on caring for patients in their homes, the majority of patients being admitted to acute health services are at a high level of acuity. Further research is needed to assess how changes to skill mix in Australia influences patient care outcomes.

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