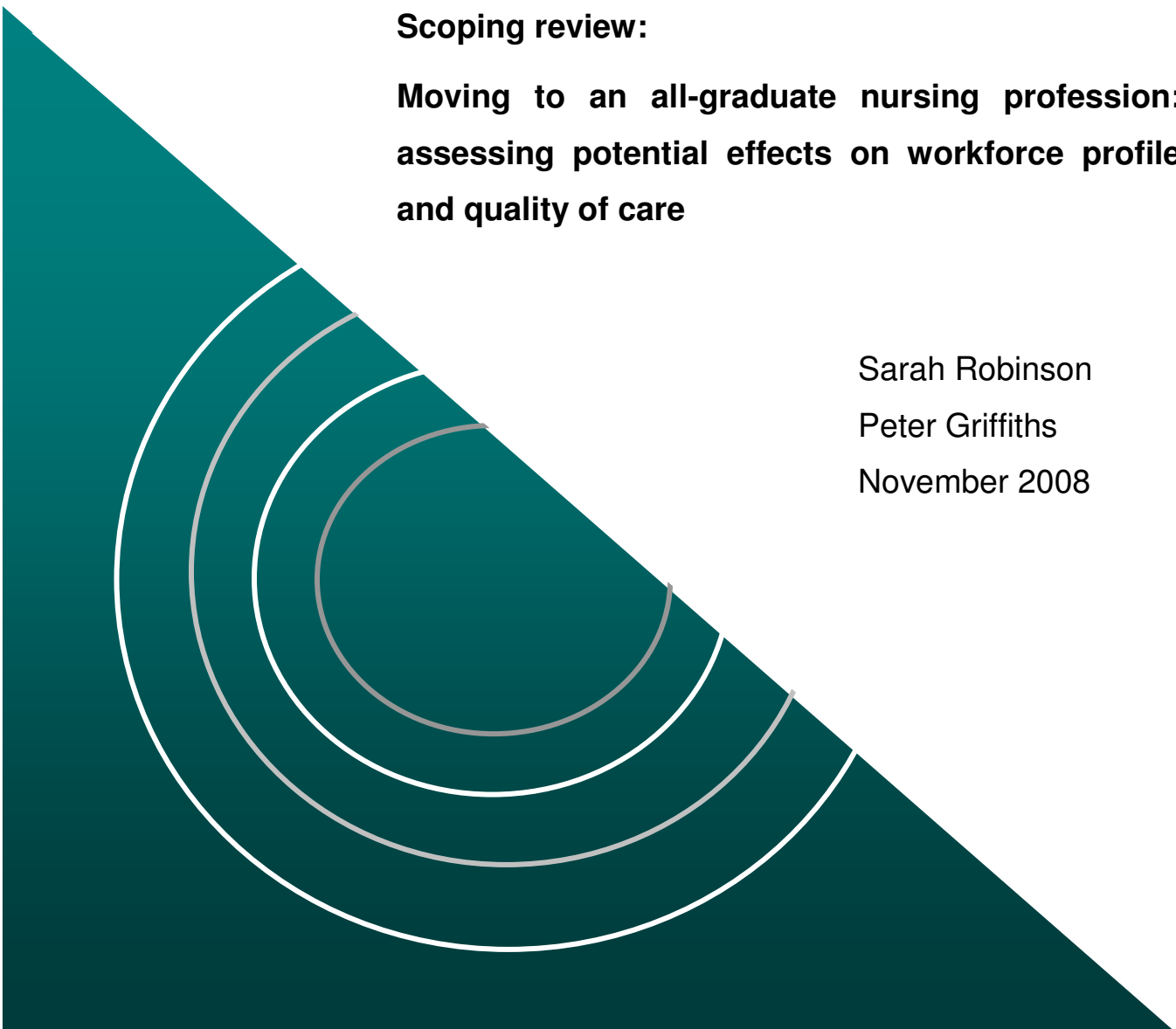


Scoping review:

**Moving to an all-graduate nursing profession:
assessing potential effects on workforce profile
and quality of care**

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Moving to an all-graduate nursing profession at registration: assessing potential effects on workforce profile and quality of care

This brief review assesses the evidence on the possible impacts of moving to graduate status at the point of registration as a nurse in England. It is the first topic to be investigated in the course of a project commissioned by the Department of Health and undertaken by the National Nursing Research Unit (NNRU) to assess the evidence on recommendations arising from Modernising Nursing Careers (Department of Health, 2006) and the streams of work that followed its publication. Section 1 outlines the context for the review and the methods adopted, Sections 2 and 3 summarise the evidence and Section 4 considers the implications of the key findings. Short summaries of each of the research studies reviewed are included in the Appendix.

1: Context and method

1.1 Context

Moving to an all-degree workforce at the point of registration is seen as one of the key actions in modernising nursing and has recently been advocated by the review of the NHS (Department of Health, 2008) and the NMC following a period of consultation (Nursing and Midwifery Council, 2008). Such a move, however, raises two main questions: what might be the impact on the size and profile of the nursing workforce and how might the quality of care delivered by nurses be affected. Both questions have been the subject of ongoing debates about the wisdom or otherwise of moving from the current situation of having a diploma and a degree route to registration to one in which the degree route only is offered (Robinson et al., 2003, Clinton et al., 2004) and members of the nursing profession remain divided on this issue (Robinson et al., 2003 Tweddell, 2008).

A final decision is yet to be taken by the Department of Health as to whether England should move towards an all-degree profession and thus follow the route taken in other parts of the UK. Given the arguments that have been advanced for and against such a move, it is important to assess whether evidence exists about potential impacts that it might have on the profile of the workforce and the quality of care and to identify not only possible advantages but also risks that would need to be addressed.

1.2 Method

The research team, working in conjunction with the project steering group, developed key questions arising from the literature and current policy concerns in relation to workforce profile and quality of care; these are set out in Sections 2 and 3. Our brief was not to undertake a full systematic review of every study undertaken on the subject but rather to: review contemporary studies with most relevance to current debates; take into account conclusions of reviews of earlier studies; and consider the implications of the evidence for the advantages and risks of moving to an all-degree workforce in England at the point of registration. We included North American studies as both the US and Canada offer more than one route to registration and debate the merits or otherwise of moving to an all-degree profession (Glaser, 2005, Taylor, 2008).

Ideally, to inform the current debate in England, comparisons of qualifiers from three-year degrees and three-year diplomas are needed. In the UK however, while nursing degrees have long been offered, these were until recently all four years in length and undertaken by a minority of nurses. Most other nurses qualified via three-year certificate courses in schools of nursing. When nurse education as a whole moved into higher education, the three-year diploma became the main route to registration. At the same time, second level training leading to the enrolled nurse qualification ceased. Some universities continued to offer four-year degrees, increasingly these were changed to three-year degrees and now this is the norm rather than four years.

Most studies in the UK, however, that have investigated outcomes from different programmes have included the four-year and not the three-year degree and some of these have also included nurses who have taken degrees after registration (Bartlett et al., 1999, Bartlett et al., 2000, Girot, 2000, Swindells and Willmott, 2003, While et al., 1998). While and colleagues compared senior students on four-year integrated degree courses with three year diploma and certificate course students (While et al., 1998). Bartlett and colleagues compared nurses graduating from a four-year degree with those from a three-year diploma at qualification, six months and one year (Bartlett et al., 1999, Bartlett et al., 2000). Studies by Girot and Swindells entailed cross-sectional comparisons of groups at different points in their career and both included people who had taken a degree after registration (Girot, 2000, Swindells and Willmott, 2003). Girot's study included first and final year students on a four-year degree, mature graduates who had taken a post-registration degree and non-graduates (Girot, 2000). In Swindell's study, the graduate group mainly comprised those who had taken a degree post-registration and the graduate and the diploma group included nurses from

various specialities as well as midwives (Swindells and Willmott, 2003) whereas the other studies included general/adult branch nurses only.

The only study we identified that studied outcomes for qualifiers from three-year degrees and diplomas is that undertaken by NNRU as part of the ongoing series of studies investigating the careers of cohorts of nurses qualifying from certificate, diploma and degree courses (Robinson et al., 2003, Clinton et al., 2004, Clinton et al., 2005, Robinson et al., 2006, Robinson and Bennett, 2007). This has included questionnaire surveys of certificate nurses followed from qualification to eight years, diploma and degree nurses followed to six years and an interview study of a sample of diplomates and graduates at seven years. This series of studies has differed from the others reviewed in that samples are drawn on a nationwide basis whereas the others reviewed have focused on one region or site.

As our recent review of nurse education in selected OECD countries has shown, few other countries offer more than one route to nurse registration (Robinson and Griffiths, 2007). Most European countries moved to three-year degrees for all nurses at the same time as moving nurse education into higher education, as did Australia and New Zealand. In countries that have maintained more than one route to registration, a four-year baccalaureate degree is offered alongside a two-year degree and a three-year diploma (US and Japan) and a three-year diploma (Canada). Of the 17 countries included in the review, five of the 12 European countries still offer second level training as do all of the five non-European countries (Australia, Canada, Japan, New Zealand and the US).

North American research studies compare outcomes for qualifiers from the four-year baccalaureate degree with those for qualifiers from the associate degree and/or diploma courses (Aiken et al., 2003, Estabrooks et al., 2005, Friese et al., 2008, Goode et al., 2002, Rambur et al., 2005, Sexton et al., 2008, Tourangeau et al., 2006). Moreover, unlike the UK where nurses specialise in a branch (adult, child mental health or learning disability) prior to registration, nurses in these countries qualify from generic programmes. Caution should therefore be exercised in making a direct 'read across' from the findings of these studies to a situation in which all nurses would take a three-year degree course. Considered as a whole, however, the studies provide a range of insights into the potential advantages and disadvantages of the move to an all-graduate profession from both an organizational and individual perspective and, as such, can be drawn upon to inform future decisions.

2: Assessing potential effects on the nursing workforce

Three aspects of the nursing workforce were identified as potentially being affected by a move to an all-graduate profession at the point of registration: recruitment; career aspirations and pathways; and satisfaction and retention.

2.1 Recruitment

Two inter-related questions are pertinent to the effect that a move to an all-graduate profession might have on recruitment:

1. What might be the effect on absolute numbers of qualifiers?
2. Might the current diversity of qualifiers be changed?

Numbers qualifying

We found little evidence as to whether degree level entry to the profession would have an absolute effect on the number of qualifiers either through the numbers wishing to start the course or the numbers failing to qualify.

Two studies suggest that some potential candidates for nursing might be deterred from undertaking a nursing degree (Arnold et al., 2003, Robinson and Bennett, 2007). On the other hand one of these studies also found that availability of degree courses had attracted some of the graduates since they desired graduate status and felt capable of degree level study (Robinson and Bennett, 2007).

Diversity of qualifiers

There is mixed evidence on the impact of graduate programmes on diversity.

The NNRU cohort studies of nationally representative samples of diploma course qualifiers and censuses of three-year degree course qualifiers suggest that adult branch graduates were younger on average than diplomates and less likely to have entered nursing without formal academic qualifications, to have children living at home, or to have worked full-time before entering nursing. Graduates were much more likely to have entered nursing with two or more A' levels (Clinton et al., 2004). There were no differences in the proportion of members of ethnic minority groups in the two groups of qualifiers (5% or less) and the graduate group had slightly fewer men than the diploma group. Bartlett and colleagues, however, found that the four-year degree course had a higher proportion of men than the diploma course (Bartlett et al., 1999).

2.2 Career aspirations and pathways

Questions include:

1. Do differences exist between the career aspirations of qualifiers from different routes to registration?
2. Do differences exist in career pathways followed?

Career aspirations

UK studies suggest that graduates may be more 'career-minded' than diplomates.

In two studies, graduates were more likely than diplomates to express certainty about their career plans at qualification (Bartlett et al., 1999, Robinson et al., 2003). In one of these studies, graduates were also more likely than diplomates to express certainty at subsequent time points and to specify a higher grade when asked to look forward to 18 months and three years (Robinson et al., 2003, Robinson et al., 2006).

One study found that graduates were more likely to cite opportunities for jobs and further study as factors influencing their desire to stay in nursing (Bartlett et al., 1999). Graduates in this study had more diverse career aspirations than diplomates; they were more likely to plan working overseas and twice as likely to consider careers in nursing education and research (Bartlett et al., 1999).

Career pathways

In terms of actual career pathways, findings from different studies do not provide a consistent picture.

The NNRU study found that up to three years, there were no significant differences between the two groups in terms of career pathways (Robinson et al., 2003). Swindells however, in a study which also included nurses with 10 years or more experience, found that graduates were more likely to hold what were referred to as positions of responsibility and 68% were in F grade posts compared with 15% of diplomates (Swindells and Willmott, 2003).

Upgrading to graduate status

A number of studies suggest that many diploma qualified nurses are positively motivated to undertake degree level studies and many do so. The absolute proportion undertaking or completing a degree is unclear.

The NNRU diploma cohort studies showed that 25% had begun a degree within three years of qualifying with many others taking degree level courses but undecided about committing to a full degree (National Nursing Research Unit, 2007). Swindell's study showed that nearly half of the 82% of diplomates planning further study intended to take a degree (Swindells and Willmott, 2003) and a figure of 61% is reported by Bartlett and colleagues (Bartlett et al., 1999). For diplomates in the NNRU seven-year study, degrees featured prominently in their plans/experiences of continuing education; half had completed or were nearing completion of a degree with the former attributing progress to having a degree (Robinson and Bennett, 2007). A US study (Delaney and Piscopo, 2007) also found that a main motive for associate degree and diploma nurses to upgrade to a BSN was career advancement, although they also report that there has been a decrease in numbers of associate degree qualifiers wanting to upgrade.

The NNRU seven-year study showed that awareness of the benefits of a degree emerged as a reason for the graduates opting for a degree course in the first place and that this had enhanced their progress to date and/or was likely to enhance the fulfilling of subsequent plans, although those who had progressed furthest in clinical posts (reaching G grades) were in fact those without degrees (Robinson and Bennett, 2007). Swindells and Wilmott (2003) also showed that 86% of directors of nursing said that a degree was required or was certainly advantageous for posts at grade at F and above in their own Trust.

2.3 Satisfaction and retention

Questions include

1. Are there differences in reported satisfaction levels of qualifiers from different courses?
2. Are there differences in intentions to stay in nursing and in actual retention between the different groups?

Satisfaction

There is mixed evidence on the job satisfaction of graduates with two UK studies pointing to lower satisfaction but US studies suggesting graduates are more satisfied.

UK studies of nurses in early career suggest that diplomates are more satisfied with their initial decision to choose nursing in that 71% would chose nursing again compared with 56% of graduates (Bartlett et al., 1999). The NNRU study (Robinson et al. 2003, Robinson et al. 2006) found that at six months the overall level of satisfaction

for both groups was similar, at 18 months the level had fallen for both groups and at three years diplomates were more satisfied overall than graduates. Graduates' growing disappointment was particularly marked in relation to aspects of continuing professional development with higher levels at six months, similar levels at 18 months but lower levels at three years. A similar pattern emerged over pay and grade in relation to level of responsibility and care delivery (reflecting on practice and providing good quality care).

US studies, however, indicate that for nurses who have been qualified for longer, baccalaureate degree qualifiers may be more satisfied than other groups (Rambur et al., 2005, Sexton et al., 2008).

Intentions about remaining in nursing

Several studies have examined intention to stay in nursing in the US and UK. Results are contradictory but the strongest evidence points to an initial high commitment to the profession followed by a decline of UK graduates.

For UK nurses in early career, then Bartlett and colleagues (Bartlett et al., 1999) found no differences in the mean length of time the two groups intended to stay in nursing when asked at qualification. The NNRU study however, found that when asked at qualification, graduates were more likely than diplomates to intend staying but at six months, 18 months and three years were less likely to do so (Robinson et al. 2003, Robinson et al. 2006). Two studies for groups of longer qualified nurses found no differences. Thus Swindells and Wilmott (2003) reported that 91% of graduates and diplomates in a UK study intended staying and in the US, Sexton and colleagues found no difference in intention to stay between baccalaureate and associate degree nurses in four different groups of length of experience (Sexton et al., 2008). The NNRU seven-year study respondents indicated that for some, obtaining a degree facilitated a planned or actual move out of nursing but there was no direct evidence of this (Robinson and Bennett, 2007).

Retention

There is little evidence to judge short-term and long-term retention of graduates.

A number of UK studies of nurses qualifying from four-year degrees reported that the majority remained in nursing (Winson, 1993); however, these studies did not include comparisons with other groups of qualifiers. The NNRU comparison of two groups (Robinson et al., 2003, Robinson et al., 2006) found no difference in retention over the first three years. An attempt to link retention to satisfaction in this study concluded that while it was often found to be associated with intentions to stay in nursing, it only

partially accounted for differences between the intentions of diplomates and graduates (Robinson et al., 2006).

A US study of nurses ranging from early to late career (Rambur et al., 2005), however, found that when baccalaureate and associate degree nurses in one rural state were compared, the former had started working as nurses at an earlier age, been employed for longer, had held more positions and, in the largest age cohort (40-54), were more likely to have been in their current positions for 10 years or more. The cross-sectional design of the study did not permit analysis of career drop outs and retirement.

3: Assessing effects on the quality of care

The research reviewed addresses two main questions pertinent to this issue:

1. Are there differences in the competencies of nurses qualifying through different routes to registration?
2. Is the proportion of degree qualified nurses in the nursing workforce associated with better patient outcomes?

3.1 Differences in competencies

Several studies have explored competencies of degree nurses compared with those with a lower qualification. The evidence suggests that those with a degree are at least as competent as those without but evidence for increased competence is scant and does not clearly apply to the outcomes of a three-year degree. Only one of these studies directly compares three-year degree programmes with a similar length diploma programme in the UK.

One UK study compared competencies of qualifiers from **three-year degrees** with those of qualifiers from the diploma course. No significant differences emerged between the two groups during the first three years after qualification when background variables were controlled for (Robinson et al., 2003, Clinton et al., 2005). Like most others, this study used self assessment and manager assessment. Other studies compared senior students or new qualifiers from four-year degree courses with those from diploma programmes and/or certificate programmes (Bartlett et al., 2000, While et al., 1998). One of these studies found that diplomates had higher self assessed scores for leadership than graduates at qualification and graduates had higher self assessed scores for professional development than diplomates at six months and one year; mentors' scores did not differ significantly for the two groups (Bartlett et al., 2000). The other study found that degree students outperformed others in clinical simulations of

information seeking and care planning skills, had higher quality nurse performance and, in interview, revealed a greater client focus (While et al., 1998).

Studies by Girot and Swindells compared groups at different time-points (Girot, 2000, Swindells and Willmott, 2003). Girot's study compared critical thinking and decision-making among four groups: first and final year students on a four-year degree; mature graduates who had taken a post-registration degree; and non-graduates (Girot, 2000). Findings revealed no differences in critical thinking. For decision-making however, mature graduates and, to a lesser extent, 4th year students scored higher than non-graduates. Graduates included in the study by Swindells had most likely taken a degree after registration (82%) and there was no indication as to the length of course taken by the pre-registration group (Swindells and Willmott, 2003). A comparison made by assessors of aspects of the graduates' critical thinking and clinical decision-making with those of a group of diplomates showed that graduates had a significantly higher overall score and higher scores in particular for those aspects concerned with cognitive ability, reflective practice ability; and professional practice. Graduates in this study perceived that the degree had enhanced their skills and increased their confidence (Swindells and Willmott, 2003).

The North American literature focuses on differences between nurses qualifying from the four-year baccalaureate programme compared with other routes to qualification (shorter degrees and diplomas); summaries of this research suggest that the four-year degree is associated with enhanced critical thinking and professionalism (Swindells and Willmott, 2003; Rambur, 2005). Another study also found an association between the baccalaureate degree and enhanced critical thinking (Brooks and Shepherd, 1992); the findings for professionalism, however showed a distinction between those members of the baccalaureate degree group who had taken the four-year generic course and those who had taken a shortened baccalaureate course after having qualified with an associate degree or a diploma and practised as a nurse. This latter group had higher scores for professionalism than the generic baccalaureate qualifiers, and the associate degree and diploma qualifiers. A study by Goode and colleagues found that senior nurses perceived baccalaureate nurses to have better critical thinking skills, being less task orientated and exhibiting more professional behaviours (Goode et al., 2002).

3.2 Differences in patient outcomes

Evidence for the impact of level of educational qualification of nurses on patient outcomes exclusively comes from large North American studies .

In a frequently cited paper based on nurse survey data and administrative data from hospitals in Pennsylvania, US, Aiken and colleagues (Aiken et al., 2003) found an

association between the proportion of the hospital nursing workforce educated to four-year baccalaureate degree level and risk adjusted mortality and failure to rescue in surgical patients. They reported that after adjusting for patient and hospital characteristics and nurse experience that a 10% increase in the proportion of nurses holding a baccalaureate degree was associated with a 5% decrease in likelihood of patients dying within 30 days of admission. This group reported similar findings for a study involving surgical oncology patients (Friese et al., 2008).

Two Canadian studies also reported associations between education level of nurses and patient outcomes. Estabrooks and colleagues (Estabrooks et al., 2005) found that lower mortality for patients with acute myocardial infarction, congestive heart failure, COPD, pneumonia or stroke was associated with four hospital nursing characteristics which included having a higher proportion educated to baccalaureate level. A study by Tourangeau and colleagues found that a 10% increase in the proportion of baccalaureate nurses was associated with nine fewer deaths for every 1000 discharged acute medical patients (Tourangeau et al., 2006).

4: Discussion and conclusions

4.1 The evidence

Several studies comparing the outcomes for degree prepared nurses with those for qualifiers from other routes exist. Considerable caution needs to be exercised in extrapolating from these studies to the likely outcomes of a situation in which all nurses qualify via a three-year degree course. All but one of the studies reviewed were based on qualifiers from four-year pre-registration degrees and some included qualifiers from post-registration degrees as well.

It is unlikely on grounds of time, cost and availability of comparator groups that further studies will be undertaken that compare outcomes for qualifiers from three-year degree courses with those for qualifiers from other routes. However, the studies reviewed here do provide a number of insights that may usefully inform debates and policy development if the proposals for an all-degree profession are implemented.

4.2 Effects on the workforce

Recruitment

We found no evidence to indicate what might be the impact of degree entry only on absolute numbers of qualifiers. There were suggestions that some groups might be more encouraged to apply while others might be deterred. In particular, some of those whom the diploma course successfully attracted, such as mature entrants who have raised families and/or worked elsewhere first, might be less likely to be recruited onto degree courses, as might those without formal academic qualifications.

Particular emphasis will need to be placed on strategies to encourage these groups to apply with availability of, for example, access courses, since they may not wish to pursue the route to registration of first working as a healthcare assistant and then upgrading through further courses. The financial implications of access courses both for providers and students will need to be considered. The impact on recruitment will need careful consideration by branch, for example mental health and adult nursing attract a higher proportion of students without formal academic qualifications than learning disability and children's nursing, and mental health nursing attracts a higher proportion of mature entrants than the other branches (Robinson and Murrells, 2001).

The potential impact of bursaries versus student grants on applications to nursing was outside the scope of this review and is being considered elsewhere. Further research into relative attrition of degree and diploma students from current three-year courses may provide insights into the needs of an all-degree student population. In drawing conclusions about the impact of all-degree on recruitment in comparison with outcomes in other countries, it should be noted that many other countries continue to offer second level training as a route into nursing from which an upgrade to registered nurse is possible.

Career aspirations and retention

There is some evidence that graduates may have higher career aspirations than diplomates/other groups. Studies of nurses in early career suggested that these higher aspirations may not be met. Other studies that included graduates at later career stages (most likely from four-year degrees) indicate that they achieve higher grades and have greater levels of satisfaction than other groups. It is possible therefore that graduates who remain in the profession subsequently benefit from the extra investment in their education. A move to an all-graduate profession may lead to all nurses having greater career aspirations. Considerable attention will need to be devoted to meeting

such aspirations especially, as one study indicated, a degree is a more readily transferable qualification than a diploma.

There was evidence that degrees are seen to be essential for career progress in nursing and that many diplomates were pursuing, or intending to pursue a degree. This has financial and time implications for individuals and organizations and raises the question that it may be more costly than everyone obtaining a degree at the point of registration. The impact on the existing diploma/certificate qualified workforce of a decision to move to an all-degree workforce at the point of registration will need careful assessment and management in terms of: access to CPD (particularly opportunities to gain degree-level qualifications); career progress; sustaining morale; and encouraging retention.

4.3 Effects on quality of care

The review considered studies that have reported higher levels of competences among degree prepared nurses and an association with better outcomes. Attention has been drawn to the fact that these were all based on qualifiers from four-year degrees and/or post-registration degrees and no significant differences were found in the study that was based on qualifiers from three-year degrees.

Evidence suggests that taking a four-year degree is associated with some enhanced competencies and that these may be enhanced by further experience. Although three and four-year degree qualifiers have both had to meet the same competency requirements of the statutory body, the additional year may have provided scope for consolidation and the development of, for example, critical thinking capabilities. Moreover, four-year degree students may have been taught in smaller groups than those taking three-year courses and this has enhanced their learning experiences (While et al., 1998).

Given that the path likely to be followed in England is that of the three-year degree, a supported period of consolidation after qualification may contribute to achieving the higher levels of competence that have been reported for four-year qualifiers. This has recently been recommended in the form of a foundation preceptorship year (Department of Health, 2008).

Some North American studies suggest improved outcomes are associated with a higher proportion of degree qualified nurses. Implications for the UK are not entirely clear for the following reasons. Firstly, conclusions of the earlier study by Aiken and colleagues have been contested with, for example, a re-analysis of the data to draw a different conclusion (Viterito, 2006). Secondly, it has been argued that a higher

proportion of baccalaureate nurses in the workforce does not necessarily mean that this is the causal factor for lower mortality rates in the hospitals studied, in particular since it is not necessarily these nurses who are delivering care to these patients (Lankshear et al., 2005). Thirdly, conclusions about the potential impact of a higher proportion of nurses educated via a four-year degree course cannot necessarily be extrapolated to having all nurses educated via a three-year degree course.

In summary, we conclude that the evidence base relating to the potential impact of a move to an all-degree workforce is unclear. The evidence that does exist provides insights into the potential advantages and risks entailed by having a degree route only to registration as a nurse.

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Research summaries

Aiken L, Clarke S, Cheung R, Sloane D, Silber D (2003) Educational levels of hospital nurses and surgical patient mortality. *Journal of the American Medical Association* 290 (12): 1617-1623

Country in which undertaken

US

Aims

To examine whether the proportion of hospital RNs educated at the baccalaureate level or higher is associated with risk-adjusted mortality and failure to rescue (deaths in surgical patients with serious complications).

Methods

Study design

Large, outcomes data sets derived from hospital discharge abstracts were merged with information on characteristics of the treating hospital (size, teaching status, level of technology), including data obtained from large scale surveys of nurses (educational level, nursing workload, nurse experience).

Study population, sample size and response rate

*Surgical discharge data from acute care general hospitals in Pennsylvania.

*Registered nurses in Pennsylvania: 50% random sample (52% (10,184) response)

*168 (80%) of the adult acute-care general hospitals operating in Pennsylvania in 1999 that had: reported surgical (general, orthopaedic and vascular) discharges; data on structural characteristics; and at least 10 nurse respondents to survey

Key variables/outcomes

Risk-adjusted patient mortality and failure to rescue within 30 days of admission of surgical patients associated with nurse educational level (hospital diploma, associate degree, bachelor's degree or higher).

Analysis

*Descriptive statistics to compare groups of hospitals.

*Logistic regression models to estimate effects of a 10% increase in the proportion of nurses who had a bachelor's degree or higher on patient mortality and failure to rescue, and to estimate effects of nurse staffing, nurse experience and surgeon board certification.

Results

*Proportion of RNS educated to baccalaureate degree or higher ranged from 0% to 77% across hospitals.

*After adjusting for patient characteristics and hospital structural characteristics for nurse staffing, nurse experience and whether patients' surgeon was board certified, a 10% increase in the proportion of nurses holding a baccalaureate degree was associated with a 5% decrease in likelihood of patients dying within 30 days of admission and the odds of failure to rescue (odds ratio 0.95; 95% CI, 0.91-0.99 in both cases).

*Decrease in mortality and failure to rescue rates also significantly associated with lower patient to nurse ratios but not to experience.

Conclusions/comment

Greater emphasis in national nurse workforce planning should be placed on ensuring a higher proportion of nurses are educated to baccalaureate level. Caution should be exercised when considering implications for UK, since US baccalaureate degree is four not three years in length.

Arnold J, Loan-Clarke J, Coombs C, Park J, Wilkinson A, Preston D (2003) Looking good? The attractiveness of the NHS as an employer to potential nursing and allied health profession staff. Business School, Loughborough University, Loughborough

Country in which undertaken

England and Wales

Aims

Multi aim study; the key one for the purpose of this review is: What are the perceived barriers to being attracted to a nursing or allied health professional (AHP) career in the NHS?

Methods

Study design

Stage 1: semi-structured individual and group interviews to identify issues. Stage 2: questionnaire survey to identify relative importance of issues

Study population, sample and response rate

*Groups of people not currently working as qualified nurses or AHPs: school pupils; mature students (on OU and access courses); students in training; assistants; those working in agencies and employing organizations in other sectors such as private and not for profit.

*Stage 1: Interviews. 231 people participated having been contacted via organizations, mainly in the East Midlands.

*Stage 2: questionnaires were distributed nationally via: NHS Careers Help Line; university training schools; professional associations; and agency employers (1125 responses). Format was typically Likert style questions e.g. strongly agree to strongly disagree.

Key variables/outcomes

*Stage 1 focused on aspects of perceptions, attitudes and intentions re the NHS.

*Stage 2: perceptions of the NHS, importance of various job features; perceived barriers to the NHS; attitudes to NHS and intentions to work in NHS.

*Question relevant to this review was whether 'not having the qualifications required to be accepted for training, was a barrier to those (54%) members of the sample who had expressed an interest in nursing in the NHS.

Analysis

Mean scores for each question and regression analysis for predictors of attitude (including perceived barriers) and intention to enter the NHS.

Results

Stage 1 interviews

High entry grades required for training was identified as a barrier to the NHS by school pupils and healthcare assistants, the latter also referred to difficulties in having to self fund through an access courses.

Ethnic minority respondents: Ways in which NHS could be made more attractive included less academic routes into the profession, shorter courses and financial aid.

Stage 2 questionnaire

*Mean score for lack of qualification as barriers was 3.39 for all but higher for those expressing an interest in nursing (3.58) than in physiotherapy (3.10) or radiotherapy (3.06).

Conclusions

For some groups of people who were not working as qualified nurses in the NHS but who expressed an interest in doing, lack of qualification required for training appeared to be a barrier to pursuing this course of action. If entry to nursing is through a degree route only, this barrier might be exacerbated.

Bartlett H, Simonite V, Westcott E, Taylor (2000) A comparison of the nursing competence of graduates and diplomates from UK nursing programmes. *Journal of Clinical Nursing* 9: 369-381

Country in which undertaken

England

Aims

To compare outcomes of two pre-registration nurse education programmes by examining the competencies of BA (Hons) adult nursing graduates and Project 2000 diplomates.

Methods

Study design

*Comparison of competencies using the Nursing Competencies Questionnaire (NCQ).

*Self assessment by nurses at qualification, 6 months and one year.

*Assessment by nurses' mentors/supervisors at qualification only.

Study population, sample size and response rate

*Qualifiers from 4-year nursing degree and 3-year nursing diploma course programmes.

*Graduate sample included all 81 students qualifying from 4-year BA (Hons) adult nursing degree course at Oxford Brookes University in 1996; questionnaires returned by 51 at qualification (63%), 42 at 6 months (52%) and 40 at one year (49%).

*Diplomate sample included all 41 adult branch qualifiers from a 3-year diploma course at an equivalent British university; questionnaires returned by 28 at qualification (68%), 25 at 6 months (61%) and 21 at one year (51%).

Key variables/outcomes

*78 competences organized into 8 constructs: leadership, professional development, assessment, planning, intervention, cognitive ability, social participation and ego strength. Respondents rated frequency of performing each competence: always, usually, occasionally, never.

Analysis

*Multivariate comparisons between graduates' (Gs) and diplomates' (Ds) mean scores at each time point.

*Longitudinal analysis of Gs and Ds mean scores for each construct.

*Multivariate comparison of mentors' scores between Gs. and Ds, and agreement between students' and mentors' scores.

Results

At specific time points:

At qualification, Ds had a significantly higher mean score than Gs for leadership.

At 6 months, Gs scored significantly higher for professional development, assessment and ego strength.

At 1 year, Gs had a significantly higher mean score for professional development.

Change over time:

Significant changes in mean scores during the first year for social participation, cognitive ability and ego strength but these did not differ for Gs and Ds.

For leadership, the difference observed at qualification reduced over time.

Mentors' scores:

No evidence that scores of mentors differed significantly between the groups of students and no evidence of differences between students' and mentors' scores.

Conclusions/comment

*A possible advantage associated with degree as opposed to diploma programmes is that Gs become more competent over time than Ds.

*Areas meriting attention during course and post qualification period include: developing leadership competences for Gs, continuing education opportunities for Ds and social awareness and participation for both groups. Increasing curriculum content likely to be limited by the move to 3 as opposed to 4 year degrees, hence period of preceptorship is important.

*Limitations of: two sites and lack of generalisability; extent to which self perceptions of competence are related to real life performance; respondent attrition over time and lack of patients' perceptions. Authors recommend replications with large, nationally representative samples.

Bartlett H, Hind P, Taylor H (1999) A comparison of the career aspirations of the degree and diploma graduates from UK nursing programmes. *Journal of Nursing Management* 7: 37-43

Country in which undertaken

England

Aims

To identify and compare the career aspirations of new graduates from nursing degree and diploma programmes

Methods

Study design

Questionnaires sent to degree and diploma nurses upon qualifying.

Study population, sample size and response rate

*Qualifiers from four-year nursing degree and three-year nursing diploma courses

*Graduate sample included all 81 students qualifying from four-year BA adult nursing degree course at Oxford Brookes University in 1996; response rate 63% (51).

*Diplomate sample included all 41 adult branch qualifiers from three-year diploma course at an equivalent English university; response rate 68% (28).

Key variables/outcomes

Demographic profile, immediate plans, future aspirations.

Analysis: Frequencies and tests of significance between the two groups.

Results

Demographic profile: 10% of graduates (Gs) and 4% of diplomates (Ds) were men.

Intentions about nursing:

* All intended to take up a nursing post upon graduation. Ds more confident in initial decision to enter nursing (71% would choose nursing again vs. 56% of Gs).

*Mean length of time intending to stay in nursing did not differ significantly (Ds 16.9 years and Gs 15.6 years).

*Factors influencing desire to stay in nursing was satisfaction (first for both groups) and then family (more Gs than Ds) and then salary (more Ds than Gs).

*Career minded: Gs more likely than Ds to cite job opportunities in nursing and opportunities for further study as factors influencing desire to stay in nursing.

Career plans:

*Both groups showed tendency towards hospital based clinical posts on graduation.

*Gs more definite over longer-term plans and more likely to plan working overseas (59% vs. 36%) and in broader range of destinations.

*Both groups equally likely to consider a career in management but Gs twice as likely to consider nursing education and nursing research.

Professional development

*Nearly all were planning further study, Ds more likely to specify courses related to nursing (93% vs. 75%) and to want to study locally (71% vs. 37%).

*61% of Ds considering a degree. Gs focusing on masters (52%) or PhD (4%).

*ENB clinical courses: Gs more likely than Ds to want to study ENB clinical courses, most likely because already have degree and want courses to consolidate and extend clinical skills.

Conclusions/comment

Findings raise implications for workforce planning, recruitment and retention; for example, facilitating wish to take the academic qualifications perceived as important in career progress and meeting more diverse career aspirations of graduates.

Brooks K, Shepherd J (1992) Professionalism versus general critical thinking abilities of senior nursing students in four types of nursing curricula. *Journal of Professional Nursing* 8 (2): 87-95

Country in which undertaken:

US

Aims

To investigate the relationship between professionalism and critical thinking abilities of senior nursing students in four types of nursing educational programmes.

Methods

Study design

To compare students on the four different programmes: three-year diploma; two-year associate degree; four-year generic baccalaureate degree; and upper division baccalaureate degree (students who take an associate degree or diploma and then a shortened baccalaureate course after a period of nursing). Professionalism was measured with the Health Care Professional Attitude Inventory (HCPAI) and critical thinking with the Watson-Glaser Critical thinking appraisal (WGCTA).

Study population, sample size and response rate

Population comprised senior nursing students on the four courses located in South eastern Pennsylvania. Fifty students were selected from each course, using convenience sampling methods.

Key variables/outcomes and analysis

Mean scores on the 80 test items of the WGCTA and the 36 items of the HCPAI, comparisons of mean scores for each programme, and inter-relationship between scores on the two measures for all students and each programme. Pearson Product-Moment Correlation Coefficient was used to explore correlations between scores and programmes.

Results

Upper division seniors scored highest for professionalism. Scores for generic programme seniors did not differ significantly from associate degree seniors. Diploma seniors showed the lowest level of professionalism. For critical thinking, seniors from generic and upper division programmes showed significantly higher levels than the other two groups. There was a moderate to strong positive correlation between critical thinking and professionalism for the combined sample, with the upper division seniors having the highest correlation when programmes were considered separately.

Conclusions/comment

That upper divisions seniors had highest levels of professionalism likely reflects their longer nursing experience. That upper division seniors achieved higher professionalism scores and showed almost identical critical thinking scores to the generic seniors suggests that the upper division route provides a baccalaureate alternative for associate and diploma nurses that is comparable with the generic programme. Similarities between generic and associate degree students raise questions about regarding the former as a professional level nurse and the latter as a technical level nurse. Caution is required in generalising findings since the study was exploratory, based in one state and sample was one of convenience.

Clinton M, Robinson S, Murrells T (2005) Assessing competency in nursing: a comparison of nurses prepared through degree and diploma programmes. *Journal of Clinical Nursing* 14(1): 82-94

Country in which undertaken

England

Aim

To investigate the competencies of qualifiers from three-year degree and three-year diploma programmes in England at one, two and three years after qualification.

Method

Study design

A cross-sectional survey to compare self-reported and line manager rated competencies of graduate and diplomate nurses. The Nursing Competencies Questionnaire (NCQ) was used to measure both overall and specific nursing competencies; this instrument was judged to be the best available at the time and had been assessed in several other studies.

Study population, ample size and response rate

Nurses from all four branches who had qualified from either a three-year degree or diploma course in England in 1998, 1999 or 2000 in universities which offered both courses. Line managers of respondents.

The NCQ was sent to 620 diplomates, 188 of whom responded (30%) and to 253 graduates, 166 of whom responded (66%). 51 of the diplomate line managers responded (27%) and 60 of the graduate line managers (36%).

Key variables/outcomes

Competence was measured in terms of eight constructs: leadership, professional development, assessment, planning, intervention, cognitive ability, social participation and Ego strength. Two additional constructs were developed, Research Awareness and Policy Awareness, both of which were identified as underlying the concept of 'graduateness'.

Analysis

Structural equation modelling using both maximum likelihood and bootstrap methods.

Results

Very little difference in overall competence and specific competencies of graduates and diplomates in the assessment made by nurses themselves and by their line managers.

Diplomates scored more highly than graduates in the constructs of Social Planning and Social participation; these differences became non-significant when controlling for background variables (year of qualification, time in current job, grade, branch and pre-nursing qualifications).

Conclusions/comment

The study indicated that graduates and diplomates in England who have qualified via three-year courses do not differ in their level of competence to any great extent as measured by the NCQ.

This study was robust in that it drew on national, random samples or censuses and included self report and line manager assessments. Findings should be interpreted with caution due to the size of the differences, the size of some of the samples and the limitations of the instrument used.

Clinton M, Robinson S, Murrells T (2004) Creating diversity in the healthcare workforce: the role of pre-registration nurse education in the UK. *Journal of Health Organization and Management* 18 (1): 16-24

Country in which undertaken

England

Aims

To ascertain diversity among qualifiers from the certificate, diploma and graduate routes to nurse registration.

Methods

Study design

Questionnaires containing sections on demographic profile, childcare activities and employment background sent at qualification to nationally representative samples of registered general nurses (RGNs) and adult branch diploma nurses and adult branch graduate nurses (3-year course).

Study population, sample size and response rate

*RGNs: half the sets qualifying from all colleges in 1990/91 in three geographically widespread areas purposively sampled for diversity of urban and rural setting and teaching and non-teaching hospitals. (N=1265) Response rate 87% (1015).

*Diplomates (Ds): One third sample of 1997/98 qualifiers obtained by stratifying sampling frame of 48 colleges by region, selecting an equal number of colleges from each and sampling intakes from each college (N=2109). Response rate 87% (1596)

*Graduates (Gs): Census of all qualifiers from three-year adult branch degree course in 2001 (N=104). Response rate 95% (99).

Key variables/outcomes

Comparison of the three groups in relation to: gender, age, ethnic group; and educational qualifications, childcare and employment prior to course entry.

Analysis

*Fisher's Exact test for statistical significance between cohorts

*Independent groups t-test to compare mean ages.

Results

*Small but not significant differences in the proportion of men and members of ethnic minority groups. Significant differences for age and background ($p < 0.001$) unless otherwise stated).

*Ds were: more than two years older on average than RGNs and Gs; less likely to be under 25 than the other two groups; and more likely to be aged 36-45 than RGNs or Gs ($p = 0.225$ NS). Ds more likely to have entered nursing without formal academic qualifications (20%) than RGNs (16%) or GS (11%).

*Ds were more likely than RGNs to have entered nursing with two or more A' levels or higher but much less likely than Gs.

*Ds more likely to have own or partner's children living with them than either RGNs or Gs ($p = 0.050$) and to have worked full-time before starting nursing than RGNs ($p = 0.002$) or Gs.

Conclusions/comment

The greater diversity of recruits on diploma course has not been sustained for those qualifying from three-year degree courses. The findings offer some support for the view that moving to all-graduate entry might discourage more mature candidates and those with lower academic qualifications to consider nursing as a possible career.

*Robust method in that drew on large, national random samples or censuses.

Delaney C, Piscopo B (2007) There really is a difference: nurses' experiences with transitioning from RNs to BSNs. *Journal of Professional Nursing* 23 (3) 167-173

Country in which undertaken

US

Aims

To describe and explore the experience that associate degree and diploma nursing graduates have when transitioning from RN to BSN.

Methods

Study design

Descriptive phenomenological approach employing taped face to face interviews with nurses who had completed the transition programme.

Study population, sample size and response rate

12 nurses with a variety of clinical backgrounds and age, completion of different transition programmes, and differing lengths of time since completion.

Key variables outcomes

Understanding of the experiences with transitioning from being RNs to becoming BSNs.

Analysis

Phenomenological analysis involving extracting significant statements, transposing these into formulated meanings and then collapsing these into eight themes. .

Results

*Main motives for taking the course were career advancement, role change, job security and love of learning.

*After course completion, nurses believed that they had better critical thinking skills, enhanced professionalism, and saw a direct relationship between their education and their approach to patient care.

*Findings included range of factors that facilitated the transition.

Conclusions

Recommendations made for nature of transition provision and for maximising potential of course graduates.

Estabrooks C, Midodzi W, Cummings G, Ricker K, Giovanetti P 92005) The impact of hospital nursing characteristics on 30-day mortality. *Nursing Research* 54 (2): 74-84

Country in which undertaken

Canada

Aims

To assess the relative effects and importance of nurse education and skill mix, continuity of care, and quality of work environment in predicting 30-day mortality after adjusting for institutional factors and individual patients' characteristics.

Methods

Study design

Patient outcome data were linked to patient demographic and comorbidity factors, institutional characteristics and hospital nursing characteristics.

Study population, sample size and response rate

*Hospitals: 49 acute care hospital in Alberta, Canada

*Patients: 18, 492 patients discharged for diagnoses of acute myocardial infarction, congestive heart failure, COPD, pneumonia or stroke during period April 1998-March 1999.

*Nurses: all registered nurses working in acute hospitals in Alberta were sent questionnaire in 1998/99, response rate 53% (6526).

Key variables/outcomes

*Hospital variables included: number of beds, teaching status and use of high technology.

*Nursing variables included: education level, skill mix, use of temporary/causal staff, perceptions of staffing inadequacy, quality of care, nurse work satisfaction, nurse-physician relationship, nurse autonomy, emotional abuse.

*Outcome variable: 30-day mortality.

Analysis

*Descriptive statistics for comparing hospital characteristics, hospital nursing characteristics and patient variables.

*Hierarchical generalized linear model (as opposed to single level modelling used in other similar studies) with a logit link function to partition the variance in patient mortality into two components (patient level and hospital level).

Results

*30 day mortality varied significantly across hospitals.

*After adjusting for patient co-morbidities, demographic factors and hospital factors in a fixed effects model, the odds ratios (95% CI) of the significant hospital nursing characteristics that predict 30-day mortality were:

0.81 (0.68-0.96) for higher nurse educational level (baccalaureate prepared).

0.83 (0.73-0.96) for richer nurse skill mix.

1.26 (1.09-1.47) for higher proportion of casual or temporary positions.

0.74 (0.60-0.91) for greater nurse-physician relationships.

Conclusions/comment

*Hospital nursing characteristics are an important consideration in efforts to reduce the risk of 30-day mortality of patients. The four that are associated with lower mortality are all modifiable conditions.

* A robust and large scale study. Limitations included: quality of administrative data; only including certain diagnostic groups of patients; issues concerning aggregation of data. .

Friese C, Lake E, Aiken L, Silber J, Scohalski J (2008) Hospital nurse practice environments and outcomes for surgical oncology patients. *Health Services Research* 43 (4): 1145-1163

Country in which undertaken

US

Aims

To determine the impact of the quality of the nurse practice environment, nurse staffing and educational levels on adverse outcomes for surgical oncology patients.

Methods

Study design

*Secondary analysis of cancer registry, inpatient claims, and large administrative and nursing survey data sets collected in Pennsylvania for 1998-99.

*Nurse staffing (patient to nurse ratio), educational preparation (proportion of nurses holding at least a bachelor's degree) and the practice environment (Practice Environment Scale of the Nursing Work Index) were calculated from survey data and aggregated to the hospital level.

*Nursing and hospital characteristics were then linked to patient outcomes to test the hypothesis that hospitals with more favourable environments would have better patient outcomes.

Study population, sample size and response rate

*Overall sampling frame for nurses and hospitals was the same as for the Aiken et al 2003 study.

*Patients: 25,957 patients who had a tumour registry record for cancers selected because of reliance on surgical excision as a critical part of tumour control.

Key variables/outcomes

*Nursing characteristics: nurse staffing, level of nurse education and nurse practice environment.

*Hospital characteristics (bed size, advanced procedures and teaching status, National Cancer Institute recognition).

*Outcome measures: 30-day mortality, complications and failure to rescue.

Analysis

*Bi-variate analysis to explore differences in patient characteristics and outcomes by hospital and nursing characteristics.

*Then estimated a series of Logistic regression models to predict the odds of 30-day mortality, complications and failure to rescue.

Results

*Nurse staffing and educational preparation of registered nurses were significantly associated with patient outcomes.

*Patients in hospitals with poor nurse practice environments had significantly increased odds of death and of failure to rescue.

Conclusions/comment

*This study is one of first to examine the predictive validity of the National Quality Forum's endorsed measure of the nurse practice environment.

*Improvements in the nurse practice environments could reduce adverse outcomes for hospitalized surgical oncology patients.

Girot, E (2000) Graduate nurses; critical thinkers or better decision makers? *Journal of Advanced Nursing* 31 (2): 288-297

Country in which undertaken

England

Aims

1. To evaluate development of critical thinking in individuals at different stages of the academic process in order to investigate the hypothesis that critical thinking skills are better developed in graduate than non-graduate nurses.
2. To evaluate effect of this development on practice through the second hypothesis; achievement of graduate status has a significant influence on decision-making in nursing practice.

Methods

Study design

A quasi-experimental, between subjects design was used to evaluate success of advanced academic study in the development of critical thinking and its application to practice on four different sizes of independent groups of subjects at different stages of the academic process.

Study population, sample size and response rate

*Degree course students, qualified graduate and non-graduate nurses.

*An opportunistic sample of 82 subjects comprising:

1. Control group of students (n=32) at two months into first year of four-year degree course and with no clinical experience to act as baseline for development of critical thinking (Response rate 100%).
2. Students in fourth year of degree programme (n=19) to identify any change in development of critical thinking and to determine their perception of effectiveness of their decision-making skills.
3. Mature graduate practitioners (n=17) who had recently completed four-year part-time post registration degree programme, chosen to illustrate practitioners who had completed academic process as well as having had clinical experience (mean 14 years). Sample size 24, response 17 (71%).
4. Mature non-graduate practitioners (n=15) completing a study skills programme after a considerable break. Chosen to illustrate experienced practitioners who were entering the academic process (mean experience 15 years).

Key variables/outcomes

*Differences in critical thinking between the four groups as measured by the Watson-Glaser Critical thinking appraisal.

*Difference in decision-making in practice between groups 2-4 as measured by each of the four sub-scales of the Clinical Decision-Making in Nursing Scale (A searching for alternatives and options; B canvassing of objectives and values; C evaluation and re-evaluation of consequences; and D search for information).

Analysis

*Series of one-way ANOVAS to analyse difference in critical thinking across all four groups and to ascertain differences between groups 2-4 within each of the four sub-scales of the CDMNS.

*Scheffe's post hoc test to make a full comparison on each of the three pairs.

*Non-parametric Spearman's rho to determine whether any relationship between critical thinking and decision-making in practice.

Results

Critical thinking skills:

No significant differences across the four groups and all groups had a low score (less than 25% of the total possible).

Decision-making in practice:

*Graduates vs. non graduates: Mean score for all questions and for sub scale A: mature graduates and to a lesser extent 4th year students scored significantly higher than non-graduates suggesting that exposure to the academic process alone influences overall decision-making as well as the ability to search for alternatives and options.

Subscale B: no significant differences.

Sub scales C and D: mature graduates scored significantly higher than non graduates.

*Mature graduates vs degree students: former scored significantly higher than latter for subscales A, C and D suggesting that abilities developed by the academic process are further enhanced by experience.

Relationship between development of critical thinking and decision-making in practice

No significant differences.

Conclusions/comment

Differences between graduates and non-graduates

The hypothesis that critical thinking skills are better developed in graduates than non graduates was rejected. The hypothesis that graduates are better than non-graduates at decision-making in practice was supported. Combination of graduate status and experience influences and develops decision-making skills in practice rather than either factor in isolation.

Recommendations

Higher education experience must further develop the student's reflexive and analytical skills and combine critical thinking with its application to the student's own practice. More work required to understand critical thinking and decision-making in practice and tools used to measure these. Longitudinal studies needed to avoid confounding variables between different groups in this study.

Comment

Contributes to understanding of different components of 'graduateness' and how to measure these. Caution exercised to generalisability given small samples and single site.

Goode C, Pinkerton S, McCausland M, Southward P, Graham R, Krsek C (2002) Documenting Chief Nursing Officers preference for BSN-prepared nurses. *Journal of Nursing Administration* 31 (92): 55-59

Country in which undertaken

US

Aims

To investigate aspects of Chief Nursing Officers' plans and views about BSN level nurses in their workforces.

Methods

Study design

Questionnaire sent to Chief Nursing Officers who were members of a consortium of academic health centres and their affiliates.

Study population, sample size and response rate

All CNOs (80) in the consortium, 44 responded (55% response rate).

Key variables/ outcomes

Information sought on: current educational nursing staff mix; whether goals held on this mix; whether their institutions differentiated practice by educational preparation, and perceived differences in practice between Associate degree/Diploma nurses and BSN and nurses with higher academic qualifications.

Analysis

Frequencies.

Results

*Centres had an average of 51% of staff holding a baccalaureate degree with a further 9% a higher degree.

*On average a higher proportion (71%) of BSN nurses was desired by the CNOs.

*43% of hospitals provided a salary differentiation for education and all CNOs said their institutions took the BSN qualification into account when appointing to higher level positions.

*71% perceived a difference in practice between BSN nurses and AD/Diploma nurses, most commonly in the former having better critical thinking skills, being less task orientated and exhibiting more professional behaviours.

Conclusions/comment

Concerns expressed that while CNO's prefer to employ BSNs, the supply of these nurses is decreasing due to constraints in providing courses and to a decline in the number of AD nurses taking course to upgrade to BSN level.

Rambur B, McInotsh B, Palumbo M, Reinier K (2005) Education as a determinant of career retention and job satisfaction among registered nurses. *Journal of Nursing Scholarship* 37 (2): 185-192

Country in which undertaken

US

Aims

To compare job satisfaction and career retention in two cohorts of registered nurse (RNs), those whose highest degrees were the associate degree (AD) or the bachelor's degree (BS) in nursing.

Methods

Study design

Survey of nurses which included a career satisfaction scale and questions drawn from the US health and retirement survey.

Study population, sample size and response rate

The population was the 6000 registered nurses in Vermont in 2002. Systematic sample of every second nurse was taken to reach sample size of 3000. Response rate 57% (n=1574). Following subsequent exclusions, the final sample was 379 AD RNs and 499 BS RNs.

Key variables/outcomes

Demographic profile, career history, job satisfaction.

Analysis

Comparison of two groups using descriptive and inferential statistics.

Results

*BS RNs started their nursing careers earlier, were employed longer, had held more positions, and in the largest age cohort (40-54) were more likely to have been in their current positions for 10 years.

*BS RNs scored significantly higher in job satisfaction related to: opportunity for autonomy and growth; job stress and physical demands; and job and organizational security.

*AD and BS RNs did not differ significantly in their satisfaction with supervision, career, continuing education, promotion opportunities, or pay and benefits.

Conclusions/comment

The study provides preliminary evidence that the additional investment in an entry level BS degree for nurses results in higher private returns for the individual and, from a societal perspective, higher rates of return in the form of a greater proportion of experienced nurses retained. Authors acknowledge the limitations of a cross-sectional analysis and that longitudinal studies are needed to assess career drop outs and retirements.

Authors do not comment whether differences in satisfaction and career experience might be associated with higher proportion of BS RNs working in magnet hospitals.

Robinson S, Bennett J (2007) *Career choices and constraints: influences on direction and retention in nursing*. National Nursing Research Unit, King's College London.

Country in which undertaken

England

Aims

The third aim of the study is relevant to the review: To explore whether views and experiences of qualifiers from the three-year diploma and three-year degree route to nurse registration differed at the seven-year point after qualification.

Methods

Study design

Semi-structured telephone interviews held with people who had been qualified for seven years from the diploma or degree route to qualification.

Study population, sample size and response rate

*Nationally representative sample of diplomates (1596) and census of graduates (57) who had qualified in 1997/8 and returned questionnaires sent six-years after qualifying (n=907, 38). (Both part of NNRU careers cohort studies).

*20 members of the diplomate and graduate populations were purposively sampled for: nursing or not; future intentions; and demographic profile. 13 diplomates and 15 graduates responded.

Key variables/outcomes

Reasons for choosing route; employment history, role of degree in progress, future intentions.

Analysis

Identification of four groups: likely stayers; ambivalent stayers; likely leavers; and leavers. Exploration of ways in which organizational and personal factors (including effects of route to registration) had influenced this outcome.

Results

****Recruitment***: reasons for attractiveness of degree route included: perception that would facilitate a nursing career; wanted and felt capable of obtaining degree level qualification; degree is a transferable qualification. Disadvantages of degree only route included deterring those not confident of ability to study at this level.

****Employment history***: degree facilitated progress, half the diplomates had taken/were taking a degree. Some concern that not having a degree would hinder further progress.

****Intentions***. For some, degree seen as facilitating future plans in nursing, for others, degree facilitated planned or actual move to another occupation.

Conclusions/comment

*Findings suggest that an increasing emphasis on nurses having degrees has both advantages and disadvantages for improving workforce capacity.

*Small scale study; should be regarded as indicative and meriting replication.

Robinson S, Murrells T (2001) Creating diversity in the nursing workforce. *Employing Nurses and Midwives* 59: 8-10 (November)

Country in which undertaken

England

Aims

To compare the demographic profile and educational background of qualifiers from the four branches of the diploma course.

Methods

Study design

Information was obtained from questionnaires sent to cohorts of each branch at the time of qualification. This was the first stage of a longitudinal study of the careers of the four groups.

Study population, sample size and response rate

Qualifiers from the four branches in 1997/8 from colleges in all regions of England. A census was taken of qualifiers from the learning disability and child branches and stratified random samples, selected to be nationally representative, of the adult branch (one third) and the mental health branch (two thirds). Response rates were: learning disability 85% (225), child 89% (634), adult 87% (1596) and mental health 82% (554).

Key variables/outcomes and analysis

Demographic variables included: age, sex, and ethnic group. Educational variables included: holding formal academic qualifications or not; highest academic qualification obtained.

Results

The proportion of men varied: child 5%, adult 8%, learning disability 22% and mental health 31%. Mental health diplomates were most likely to be over 30 at the time of qualification (39%), this figure fell to around a quarter for adult (26%) and learning disability (24%) diplomates and to 11% for child branch. A greater proportion of mental health diplomates were Asian or Black (10%) compared with 6% for learning disability and 3% for adult and child. Adult (20%) and mental health (19%) diplomates were more likely to have entered nursing without formal qualifications than either the learning disability (11%) or the child branch (8%). Mental health (14%) and learning disability (11%) diplomates were more likely to have entered nursing with a degree than adult (4%) or child branch (3%) diplomates.

Conclusions/comment

The mental health branch had the highest proportion of the groups specified in policy documents as a means of increasing diversity in the nursing workforce and the child branch had the least diverse profile. This is a robust study in that it is based on large, nationally representative samples/censuses and achieved high response rates to the questionnaire.

Robinson S, Murrells T, Clinton M (2006) Highly qualified and highly ambitious: implications for workforce retention of realising the career expectations of graduate nurses in England. *Human Resources Management Journal* 16 (3): 286-312

and

Robinson S, Murrells T, Hickey G, Clinton M, Tingle A (2003) *A tale of two courses: comparing careers and competencies of nurses prepared via three-year degree and three-year diploma courses*. National Nursing Research Unit, King's College London

Country in which undertaken

England

Aims

To compare the careers of graduate and diplomate nurses in relation to:

1. Career pathways followed including CPD
2. Career aspirations
3. Satisfaction with working life
4. Anticipated retention
5. Relationship between satisfaction and anticipated retention

Methods

Study design

*Comparison of questionnaire data obtained in the course of an existing longitudinal study of adult branch diplomates' careers with data from four cross-sectional cohorts of adult branch graduates selected to match time-points for which diplomate data available.

*Pilot cohorts recruited to test recruitment strategies and to develop questionnaires.

Study population, sample size and response rate

*Diplomates: A third of all those qualifying in 1997/98 were selected through a multi-stage approach to take part in the longitudinal study (2109). Respondents at each stage were: 1596 at qualification (76%), 1339 at 6 months (63%), 1117 at 18 months (53%) and 907 at 3 years (43%).

*Graduates. Census of graduates selected for the same time points. Respondents at each stage were: 99/232 (43%) at qualification, 111/221 (50%) at 6 months, 53/110 at 18 months, and 57/129 (44%) at 3 years.

Key variables/outcomes

*Event histories re nursing (jobs and courses) and non-nursing activities.

*Likelihood of nursing at 18 months, and at 3, 5 and 10 years after qualification.

*Reasons for starting training, plans to take courses, certainty about jobs hoped to hold and grades hoped to obtain by specified time-points.

*Satisfaction ratings for aspects of jobs using a 5 point Likert-type scale.

Analysis

*Diplomate data were weighted for unequal selection probabilities.

*Fisher's Exact test to test for differences between proportions.

*Unpaired independent groups, t tests for differences in mean scores.

*Logistic regression was used to predict intentions of staying in nursing.

Results

Career histories and CPD

*Majority of both groups were working in the NHS at 6 months, 18 months and 3 years and were equally likely to have reached the same grade at each of these time-points.

*Two groups were equally likely to have: completed courses at 18 months and 3 years; and not been able to start courses that they planned to do so by 18 months and 3 years.

Career aspirations

Gs were more likely than Ds to:

*have started nursing to gain a professional qualification and to have an occupation with career prospects;

*express certainty about career plans;

*hope to be working at a higher grade at future time-points;

*plan to undertake courses in the future.

Satisfaction

Gs and Ds had similar sources of satisfaction and dissatisfaction with aspects of working life but differed in that at 3 years: Ds had higher overall levels of satisfaction; and Gs had lower levels of satisfaction with pay and grade in relation to level of responsibility, all aspects of CPD, and opportunities to reflect on practice and provide good quality care.

Anticipated retention

At qualification, Gs were more likely than Ds to anticipate that they would be nursing at specified future time-points but at 6 months, 18 months and 3 years, the reverse was the case.

Relationship between satisfaction and anticipated retention

Satisfaction was often found associated with intentions of staying in nursing and occasionally partly accounted for differences between graduates and diplomates. Growing dissatisfaction of graduates contributed to some extent towards their lesser likelihood of remaining in nursing, but was insufficient to explain these findings.

Conclusions/comment

Benefits of moving to graduate status at the point of registration include the likelihood of a greater proportion of recruits with higher career expectations and ambitions. Risks include a workforce with lower levels of satisfaction and less likelihood of intending to remain in nursing.

Findings indicates that there needs to be a better fit between graduates' expectations and the opportunities, support and conditions offered by the NHS.

This study is the most comprehensive attempt to date to consider the impact that moving to graduate status at the point of registration might have on key workforce outcomes.

Modelling relationships between variables was limited by the cross-sectional nature of the graduate cohorts compared with the longitudinal diplomate cohort.

The 'at qualification' data for the two groups were separated by three years. Graduate cohorts at 18 months and 3 years were relatively small although not necessarily unrepresentative.

Contribution of unmet career expectations to anticipated retention could not be appropriately modelled

Same study showed that graduates are less diverse than diplomates at qualification and that there are no differences in competencies up to three years after qualification as measured by the Nursing Competencies Questionnaire.

Sexton K, Hunt C, Cox K, Teasley S, Carroll C (2008) Differentiating the workplace needs of nurses by academic preparation and years in nursing. *Journal of Professional Nursing* 24 (2): 105-108

Country in which undertaken

US

Aims

To determine if differences in work environment perceptions exist for nurses with different levels of academic preparation but similar years of experience.

Methods

Study design

Questionnaire survey of nurses.

Study population, sample size and response rate

Convenience sample of more than 5000 nurses employed in facilities located in rural and urban areas of the US. Participants recruited by nurse leadership between 2003 and 2005 and asked to complete two documents:

- 1) Demographic characteristics and current employment setting.
- 2) Individual Workload Perception Scale-Revised.

Key variables/outcomes

*Demographic profile.

*Nurse perceptions of manager, unit and peer support, workload and intentions to stay.

*Overall nurse satisfaction score.

Analysis

Mean values of work environment perceptions of the two groups were compared using univariate statistics for four categories of length of professional experience: 0-5 years, 6-10 years, 11-15 years and more than 15 years.

Results

*BS nurses reported similar or more positive work environment perceptions than did AD nurses across all levels of professional experience.

*Largest difference was among group of nurses with more than 15 years experience; the BS nurses in this group reported more positive perceptions of peer support, unit support, workload and overall nursing satisfaction.

*Intent to stay did not differ between the two groups in any of the four length of experience categories.

Conclusions/comment

Authors conclude that efforts to expand nurses' access to baccalaureate programmes may have positive implications for professional nursing and the work environment.

Authors do not comment as to whether different perceptions in work environments might be linked to higher proportion of BS nurses working in magnet hospitals.

Swindells C, Willmott S (2003) Degree vs. diploma education: increased value to practice. *British Journal of Nursing* 12 (18): 1096-1104

Additional information from Project summaries held at the Centre for Higher Education Research and Information

Country in which undertaken

England

Aims

To investigate the added value to practice of graduate education.

Methods

Study design

*Survey of nurse directors in the north-west region to determine the numbers for sampling and their views on the way forward for pre-registration education.

*Questionnaire survey of nursing and midwifery practitioners and their assessors that included a rating scale of performance.

*Semi structured interviews with 12 nursing and midwifery graduates.

Published results relate to scores given by assessors on grounds that study based on a quantitative framework that examines the objective characteristics and attributes of the sample groups rather than the subjective views of the nurses themselves.

Study population, sample size and response rate

*Directors of Nursing census of 53 (68% response) and Heads of Midwifery census 21 (78% response) in the North West region.

*Practitioners: 2893 nursing graduates working in acute (adult, mental health and paediatric) and community settings and 332 midwifery graduates practising in the region. Trusts stratified by size and random sample and proportions of the sample selected from within each: 209 graduate nurses and 65 graduate midwives. 82% of graduates had gained degree after registration and 18% before (not stated whether 3 or 4-year course). Post registration group more likely to have had more than 10 years of experience (58% vs.15%). Diplomates sampled in same way: 132 nursing diplomates and 42 diploma midwives.

*Assessors: senior experienced practitioners who had graduates and non-graduates working in their clinical team. 274 responded (72% rate for nurses and 78% for midwives).

Key variables/outcomes

*Assessors applied the tool to sampled graduates and diplomates. Tool had 42 items covering range of attributes and skills identified from literature review as components of critical thinking and clinical decision-making. Determined how frequently the graduate/diplomate performed each item using 4 point Likert scale.

*Practitioners asked to rate themselves on the same items and provide information on their educational qualifications, opinions and career aspirations.

Analysis

*Mean, probability and test of significance for comparing mean scores of the two groups on each of the 42 items. One tailed t test used to detect differences in means and standard deviations between two groups.

*21 items which were significantly different were subject to multivariate discriminate analysis to discriminate between the overall distribution and focus of performance of graduates and diplomates. Performances clustered to form centroids ie. the central focus of the groups' performance.

*Comparison of pre and post registration degree groups.

Results

Assessment by assessors

*Mean scores for graduates were higher than diplomas for all 42 items ($P < 0.05$) and significantly higher for 21 of these items ($P \geq 0.05$). For midwifery graduates this figure rose to 41.

*There was a positive centroid for Gs (0.349+) and a negative centroid for Ds (-0.588). i.e. majority of Gs is greater than 0 and majority of Ds is less than 0, thus overall performance of Gs better than that of Ds.

Specific items

The 21 items for which Gs scored higher than Ds fell into 3 main categories:

*Cognitive ability including critical thinking and informed decision making)

* Reflective practice ability (reflection in and on action, rationale for thoughts and behaviour, identifies future learning needs)

*Professional practice (including being a change agent, team working and leadership, accountability, networking and collaboration, extended level of competence, and confidence to challenge).

*Little difference between those who had obtained their degree via the pre- or post-registration routes. Differences that did exist were explained by amount and level of experience.

Career aspirations

*82% of Ds planned to take further qualifications, for 48% of them it would be at degree level.

*91% of Gs and similar figure of Ds intend to continue nursing.

*Gs more likely to hold posts of responsibility and 68% were in F graded posts compared with 15% of Ds.

*71% of heads of midwifery and 86% of directors of nursing stated that in their trusts, a degree was required or was advantageous for posts graded F and upwards. In most cases a degree was essential for posts at level G and above.

Assessment

Graduates thought that personal benefits of degree were in the enhancement of generic skill, cognitive skill, increased confidence and improved professional benefits.

Conclusions/comment

Provides evidence to support view that degree education adds value to practice. Graduate group performed significantly better in clinical practice than diplomates. This was not restricted to academic aspects of award, suggesting that having a degree adds value to clinical practice. Performance of pre and post registration graduates was only significant when years and level of experience taken into account, suggesting that level of experience and graduate education does add value to practice.

Three domains in which Gs were better than Ds are considered crucial to development of practice and authors recommend that nurses are trained at higher level than now.

Authors comment: Limitations: comparing cross sectional and longitudinal data, utilizing a wide range of staff to assess competencies, small cohort for diplomates, and limitations of competency measurement tool.

Tourangeau A, Doran S, McGillis Hall L, O' Brien Pallas L, Pringle D, Tu J, Cranley L (2006) Impact of hospital nursing care on 30 day mortality for acute medical patients. *Journal of Advanced Nursing* 57 (1): 32-44

Country in which undertaken

Canada

Aims

What are the nursing-related determinants of risk-adjusted mortality for acute medical patients in hospitals in Ontario, Canada?

Methods

Study design

Three sources of data used to create 19 hospital level variables: survey of nurses working in medical and combined medical-surgical units; patient discharge data; and hospital characteristic data. The nurse survey data were linked to the patient and hospital data to test the hypothesized model i.e. that lower 30 day mortality will be related to specified hospital characteristics.

Study population, sample size and response rate

Hospitals: All Ontario teaching and community hospitals existing in 2002-2003. After exclusions, sample included 9 teaching and 66 community hospitals.

Patients: four diagnostic groups of acute patients discharged over one year (April 2002 to March 2003). After exclusions, final sample consisted of 46,993 patients. Four data sources used to calculate risk and case mix adjusted 30-day mortality rates.

Nurses: all nurses employed in Ontario teaching and community acute care hospitals working in medical and combined medical-surgical clinical areas (n=5980) in two months of 2003. 65% (3886) responded to questionnaire which included standard measures of satisfaction, burnout, and nursing work index.

Key variables/outcomes

Nineteen variables, developed from the data sources, were included for predictors of the outcome variable of 30 day mortality. These included: nurse staffing levels and mix, experience, education, satisfaction, support, working relationships and hospital type.

Analysis

Descriptive statistics to summarize hospital level predictors and the outcome variable. Simultaneous and backward multiple regression models to identify variables associated with lower 30 day mortality.

Results

Lower rates associated with: hospitals that had: higher proportion of RNs, higher proportion of baccalaureate nurses, lower nurse staffing dose, higher nurse reported adequacy of staffing and resources and quality of care, higher use of care maps. Authors calculated that a 10% increase in proportion of baccalaureate prepared nurses was associated with nine fewer deaths for every 1000 discharged patients.

Conclusions/comment

Authors conclude that findings contribute to mounting evidence that structures and processes of hospital nursing care have an impact on patient mortality and survival. Recommendations included that hospitals aggressively seek to hire and retain baccalaureate prepared nurses to care for acute medical patients. Further research needed on determinants of mortality (55% of variance unexplained in this study).

While A, Fitzpatrick J, Roberts J (1998) An exploratory study of similarities and differences between senior students from different pre-registration nurse education courses. *Nurse Education Today* 18; 190-198

Country in which undertaken

England

Aims

To compare performance of senior student nurses on registered general nurse courses, diploma courses and integrated degree courses in relation to:

1. Nurses' attitudes, skills and competences and their effect on practice.
2. Quality of care for patients and clients.

Methods

Study design

Triangulation design using simulation, non-participant observation and interview.

Study population, sample size and response rate

Senior student nurses on three-year registered general nurse courses, three-year diploma courses and four-year integrated degree courses.

Sample selected from three institutions in South East England providing each type of programme so that potential bias of individual centres would be minimized. Participation invited from volunteers in last three months of course who were female, childless, Caucasian, under 25 and had achieved a certain level of secondary education. (RGN n=34, Diploma course n=34, integrated degree n=31). Information on numbers eligible and response rate not provided.

Key variables/outcomes

*Simulations: A) list of information required to plan care for a short, written client scenario. B) produce a care plan having viewed a video of a nurse-patient admission interview.

*Non-participant observation. Using a three domain scale designed for the study (physical, psycho-social and professional implications), a mean performance score calculated for each participant based on three sessions of 2.5 hours non-participant observation.

*Interview: semi-structured exploring: events considered significant to their practice; events considered important to their practice; events demonstrating high and low quality nursing care; perceptions of own strengths and weaknesses; and key people who had influenced their development as nurses.

Analysis

Comparisons between programmes (Kruskal-Wallis, Mann-Whitney U and Spearman's rank correlation coefficient tests) for the simulations and observations. Interviews were thematically coded for manifest and latent content.

Results

Comparisons showed similarities in strengths and weaknesses but also differences in outcomes which included:

Simulation and observation data

*Integrated degree students – more systematic approach to information seeking, better care planning skills and higher quality nurse performance.

*RGN students use of a model and the immediate role of the nurse to guide information seeking and better care planning skills and weaknesses in clinical nurse performance.

*Diploma students: weaknesses in information- seeking, care planning and clinical nurse performance.

*No significant differences between the clinical performance scores of RGN and diploma students.

Interview data

Suggested that degree students had a client focus in contrast to the professional focus of the RGN and diploma students.

Conclusions/comment

Main point is that highlighted key issues for nurse education per se as well as drawing attention to differences in the three programmes. All gained much from their programme of preparation and were able to demonstrate their nursing skills.

Findings suggested that some participants could refine their skills further.

Positive influences of educational programmes and practice environment as well as high quality role models from education and practice are critical to this process of equipping students with sound knowledge base and clinical proficiency with attitudes and values favourable to the professional nursing role.

Integrated degree and diploma held positive views about course.

Findings support strengthening of education-practice links; especially the continued development of the clinical liaison role for educationalists; and the having a period of preceptorship post qualification.

Authors observe that sample size was limited and that there was a potential confounding variable of resources being taken away from the RGN in the early days of the diploma course.

Also of note is that degree students were in their 4th year of study compared with the third year for the other two groups.
