The impact of higher education for post-registration nurses on their subsequent clinical practice: an exploration of students’ views

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In recent years there has been a large increase in the number of qualified nurses in the United Kingdom, who have raised the academic level of their nursing qualification to diploma level or above. Correspondingly, there has been little research that assesses the value of post-registration education offered by universities. In particular, there is a paucity of research regarding the effects of courses on the subsequent clinical practice of participants. Studies of post-registration education appear to be small scale and limited in scope. This paper examines the views of diplomates as to the effect of a Diploma in Professional Studies in Nursing course on clinical practice. A questionnaire was sent to all nurses (n = 169), from the first seven cohorts, who successfully completed the course. A response rate of 66.8% (n = 113) was achieved. The respondents reported themselves to be more questioning, more able to apply research findings and to have a wider knowledge for practice following completion of the course. The findings are discussed, limitations of the study addressed and recommendations for further research are made.

Keywords: higher education, continuing professional education, impact evaluation, clinical practice, nursing

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INTRODUCTION
The value of nurses undertaking further study for academic qualifications is a current issue of concern. Developments in the education of pre- and post-registration nurses over the past decade have led to a general recognition of the need to raise the level of all first level nursing qualifications to at least diploma level in the United Kingdom (UK), particularly with the implementation of Project 2000 schemes in pre-registration education (United Kingdom Central Council for Nursing, Midwifery and Health Visiting, UKCC 1986). In addition, the nursing profession, has over the last decade debated the issue of continuing education for nurses. This has resulted in two major initiatives both of which emphasize the need for and importance of continuing education for post-registration nurses, (UKCC 1990, English National Board (ENB) 1991, UKCC 1994). The momentum of developments in this respect is gathering pace with substantial numbers of registered nurses still to achieve diploma level status.

The Diploma in Professional Studies in Nursing (DPSN), introduced by the former polytechnics and approved by the Council for National Academic Awards (CNAA) in the 1980s, has been part of a move to develop the academic standing of practitioners. The DPSN has been offered at Coventry University (formerly polytechnic) since 1988 and is aimed at first-level registered nurses. Between 1988 and 1990 the course was presented in an integrated format. Since then the course has been offered on a modular basis in line with current trends to modularise courses. The DPSN provides continuing educational opportunities for registered nurses, aimed at developing practitioners who are not only knowledgeable but who can assess, monitor and evaluate their own performance and that of others. The course also aims to advance nurses’ professional skills and knowledge related to nursing practice, teaching, management and research. With regard to nursing practice, the skills developed are intended to be intellectual/cognitive not clinical psychomotor skills, facilitating the student’s ability to address the complexities of practice. For many years, nationally, the DPSN course provided almost the only opportunity for continuing education for nurses in a higher education setting.

With the evident increase in demands in the 1990s for courses to demonstrate their ‘fitness for purpose’ (Humphreys 1996) it was felt opportune to evaluate the extent to which the course is achieving its aims.

This paper reports on part of a wider study which investigates the influence of the DPSN on clinical practice, career and personal development. This report will focus on those aspects pertaining to the perceived impact of the course on clinical practice.

LITERATURE REVIEW
One of the objectives of continuing education for nurses is to enhance the care received by patients and clients. Bariball et al. (1992) have identified that there is an ongoing theme in the literature that continuing professional education for nurses should lead to improvements in patient care. Waddell (1992) states that the main purpose of post-registration education should be to enhance clinical practice and thereby promote the health of the individual. Warmuth (1987) argued that continuing education is more than the acquisition of knowledge and its aim should be to change the practice of health professionals. Despite these observations there appears to be little evidence of attention being paid to the impact of post-registration courses on nursing practice. This has been highlighted as a surprising anomaly in a climate where accountability and quality assurance have assumed greater prominence (Bignell & Crotty 1988). In particular, Carlisle (1991) commented on the paucity of research that evaluates the value of post-registration degree level education and the effects, if any, on standards of patient care.

Whilst courses are traditionally evaluated summatively, there is little evidence of evaluation beyond the end of courses. Some evaluative work has been carried out in the United States of America (USA) (Heick 1981, Meservy & Monson 1987, Ferrell 1988), Australia (Pelletier et al. 1994) and the UK (Bignell & Crotty 1988, Hughes 1990, Fraser & Titherington 1991, Nightingale et al. 1992) but many findings would appear to be inconclusive. However, Bariball et al. (1992) conclude that no work on the impact of continuing education is entirely negative in its outcome and that the small number of studies undertaken demonstrate a range of beneficial effects of continuing education on clinical practice.

In the USA Waddell (1992) conducted a meta analysis of studies which investigated the effect of continuing education for nurses on clinical practice. A total of 95 studies were located and 34 were subjected to analysis. She concludes that:

From a practical standpoint we can now say that continuing nurse education is likely to result in improved nursing practice for more than three-quarters of the participants.

(Waddell 1992. p. 166)

One of the problems in applying the results of this research to the UK context is the difficulty in drawing comparisons between the two nurse education systems. In particular the USA has a long history of higher education provision for nurses whilst in the UK this is a more recent phenomenon.

Within the UK, studies have indicated that there may be some enhancement of clinical practice (Bignell & Crotty 1988, Hughes 1990, Nolan et al. 1995, Hogston 1995). Following evaluation of an ENB Course (ENB 923) there is

evidence to show there was an ‘increase in both the effectiveness and efficiency of the course members to improve both their clinical practice and their ability to enhance clinical care’ (Bignell & Crotty 1988). Hughes (1990) found that following an ENB continuing education course, development occurred in four areas. These were: improved clarity of the individual’s role in context to other team members; enhanced communication skills; awareness of current issues; and finally managers reported a positive impact on clinical practice. In the case of the study by Hughes (1990) the sample size was small (n = 11) and in the Bignell & Crotty (1988) study the sample size is not stated but the authors refer to their ‘small evaluative study’. These latter two studies relate to specific competency-based clinical courses based in individual colleges of nursing. However, Nolan et al.’s (1995) study of just over 600 nurses, managers and teachers evaluated the Welsh National Board’s (WNB) Framework for Continuing Education. Using a postal survey and in-depth interviews they attempted to identify the characteristics of a successful model of continuing professional education. Respondents in their study felt that, amongst a number of factors, continuing professional education (CPE) should encourage people to be more critical of nursing practice, apply research findings and enhance problem solving abilities. Hogston (1995) employed unstructured interviews to investigate 18 nurses’ perceptions of the impact of CPE on the quality of nursing care. Analysis indicated the CPE increased skills and helped to update, prioritize and rationalize practice.

As far as studies evaluating courses in higher education are concerned, four have been identified. Reid et al. (1987) sent questionnaires to 90 graduates from nursing degree courses in Northern Ireland including nine post-registration degree students. Of these nine, five responded and reported that undertaking their course improved their assessment skills, understanding of research, and overall knowledge. It is however, difficult to draw any conclusions from these results given the small numbers involved. Fraser & Titherington (1991) conducted a study investigating the career paths of 113 graduates from three post-registration nursing degree programmes in England. Although students were asked to evaluate the programmes, the main focus of the study was career pathways and as a result there is little evidence regarding their impact upon the clinical practice of participants. Another study by Nightingale et al. (1992) has attempted to assess the contribution to practice of the Diploma in Nursing (offered by London University). This again was a small study (n = 15) considering one cohort in one centre only. The overall scope of the study was also limited but 14 respondents felt that the course had changed their nursing practice, five of these cited the use of nursing models and others said the courses made them more confident and able to question practice (n = 4). Finally, a study commissioned by the Council for National Academic Awards (CNAA) (1993) reviewing its post-registration nursing courses in higher education found that almost all the course claimed to develop and enhance nursing practice but that this seemed to be attained in a generalized way by the incorporation of biological sciences, social sciences and nursing theory. Most courses seem to rest upon the assumption that the students will be able to integrate theory and practice by using examples of practice in discussions and assessed work. This evaluation was limited to an examination of course documents and workshops with course leaders. The student view did not form part of this review.

Given the lack of research considering the impact of higher education on nursing practice and the small scale nature of most of those studies that have been carried out, it would seem appropriate and timely to carry out more extensive studies.

THE STUDY

Methodology

The data reported here are part of a wider study which aimed to investigate the impact of a higher education course (DPSN) carried out at Coventry University, England, not only on clinical practice but on the personal and career development of course participants.

Research questions

The part of the study reported in this paper attempted to address the following research questions by examining the self-reported behaviour of participants:

- In what ways did participation in the DPSN course affect the way in which nurses carried out clinical practice?
- How far did participation in the DPSN course influence the students’ approach to nursing practice?
- What aspects of the course content were seen to be most valuable in developing the nursing practice of students?

In order to address these questions an exploratory study was conducted using a postal survey.

Research design

A 45-item questionnaire was designed to elicit both qualitative and quantitative data. The first 10 items related to biographical data and 16 further items addressed the influence of the course on clinical practice. The remaining items referred to aspects of personal and professional development. Various question formats were utilized including Likert style items, multiple option and open ended questions. Because of the two modes of course delivery (integrated and modular) different questions related to course content had to be utilized.
A pilot study was conducted using a sample of nurses who had completed similar courses in other institutions in order to confirm the reliability and validity of the instrument. A saturation sample of all past students \((n = 169)\) who had successfully completed the DPSN, from the first seven cohorts, were then sent the amended questionnaire. Participants who had not replied within 1 month were sent a reminder in order to increase the response rate. Questionnaires were allocated a code number in order to ensure confidentiality and participants were not required to provide information which could identify them as individuals. Additionally, only one member of the research team had access to the codes in order to facilitate the sending out of reminder letters.

**Results**

A total of 169 questionnaires were sent to diplomates. A response rate of 66.8\% \((n = 113)\) was achieved. Twenty-four (50\% response rate) were returned from the integrated course participants and 89 (73.5\% response rate) from the modular course participants. This is understandable as the participants on the integrated course were more likely to have changed addresses since leaving the university, as they made up the first three cohorts. This was illustrated by the fact that five were returned undelivered by the Post Office for this group. Given the difficulties of contacting people over the period of time covered by this study the response rate was considered to be particularly good.

**Sample description**

On entry to the course the mean length of time since obtaining first registration was 7.65 years with a range of 1–25 years. Professional qualifications held on entry to the course are set out in Figure 1.

The majority of respondents were registered general nurses. Most nurses had undertaken continuing education since registration, predominantly in the form of English National Board courses (e.g. ENB 998, Teaching and Assessing in Clinical Practice). However, 34\% had their registrable qualification only. A small minority held two registrable qualifications. The mean period since last studying for a professional qualification before entering the DPSN was 3.34 years with a range of 0–21 years. Some entered the DPSN directly from study on another course.

Figure 2 illustrates the distribution of clinical grades held by respondents on commencement of the course. The majority were grades E, F and G which are the grades which tend to represent the more experienced nurses at clinical level.

With regard to motivation to attend the DPSN course, the majority (109) of responses indicated that participants were self-motivated. A small minority of responses (8) also indicated that they had been advised to attend by their manager or employer.

**Developing clinical practice**

Participants were asked to consider the subject areas or modules within the course and to rank these in order of value in respect of the development of their clinical practice. Only the modular course is considered in this aspect of the analysis. A score was allocated to each rank according to its position, i.e. that ranked as most valuable scored 8 and that least 1. By adding up the scores from all respondents an overall total score was derived for each module (see Table 1). The ‘Legal and Ethical Issues’ module was ranked as most valuable; this was closely followed by the ‘Research’ module. ‘Biology’ was ranked clearly as least valuable.

In a follow-up open question respondents were asked to explain their response to their ranking of the modules. One respondent explained the value of the ‘Legal and Ethical Issues’ module in the following way:

I had given little thought to legal and ethical issues prior to undertaking this module. I now understand how important this is and take greater care in record keeping and only undertake tasks I feel I am competent to do.

Another stated:

This part of the course encouraged me to question how and why I deliver care and to examine the impact of the delivery of care on various aspects of the patient’s well-being.

In total 35 people commented specifically about the Legal and Ethical Issues module. The majority referred to the positive impact of the module. However, it is interesting to note that a small number declared that as a result of undertaking the module they were more cautious in their dealings with patients and relatives without necessarily improving their nursing practice.

With regard to the ‘Research’ module a respondent noted that this module ‘... made me question and evaluate treatments — especially leg ulcers’. Another stated that they had ‘... adopted a research based approach (whereas I never really looked at research prior to the DPSN — I didn’t understand it or appreciate its value, so ignored it)’.
Although the module ‘Health, Social Structure and Social Policy’ was ranked third most valuable it received particular comment from the respondents in the qualitative, open sections of the questionnaire. The following response was typical of comments relating to this module:

I believe studying health, social structure and social policy has altered my values and beliefs, i.e. especially when labelling, stereotyping patients, e.g. overdoses, alcoholics. I have begun to appreciate the impact society has on health. I have become more non-judgemental in my approach.

There were few explanations for the low ranking of the ‘Biology’ module but an indication is given by the following respondent:

The biology module, while interesting and relevant, did not have the same impact as the other modules, in causing me to think differently about my practice.

Table 1 Value of course content ranked by respondents (modular programme only)

<table>
<thead>
<tr>
<th>Module title</th>
<th>Score</th>
<th>Ranked position</th>
</tr>
</thead>
<tbody>
<tr>
<td>Legal and ethical issues</td>
<td>533</td>
<td>1</td>
</tr>
<tr>
<td>Research</td>
<td>489</td>
<td>2</td>
</tr>
<tr>
<td>Health, social structure &amp; social policy</td>
<td>422</td>
<td>3</td>
</tr>
<tr>
<td>Management in nursing</td>
<td>382</td>
<td>4</td>
</tr>
<tr>
<td>Theory &amp; practice of nursing</td>
<td>367</td>
<td>5</td>
</tr>
<tr>
<td>Psychology</td>
<td>344</td>
<td>6</td>
</tr>
<tr>
<td>Human biological studies</td>
<td>209</td>
<td>7</td>
</tr>
</tbody>
</table>

Table 2 Ranking of modules reported to have made respondents ‘think differently’ about practice

<table>
<thead>
<tr>
<th>Module title</th>
<th>Number identifying the module</th>
<th>Ranked position</th>
</tr>
</thead>
<tbody>
<tr>
<td>Legal and ethical issues</td>
<td>80</td>
<td>1</td>
</tr>
<tr>
<td>Research</td>
<td>79</td>
<td>2</td>
</tr>
<tr>
<td>Health, social structure &amp; social policy</td>
<td>72</td>
<td>3</td>
</tr>
<tr>
<td>Management in nursing</td>
<td>64</td>
<td>4</td>
</tr>
<tr>
<td>Psychology</td>
<td>62</td>
<td>5</td>
</tr>
<tr>
<td>Theory &amp; practice of nursing</td>
<td>54</td>
<td>6</td>
</tr>
<tr>
<td>Human biological studies</td>
<td>29</td>
<td>7</td>
</tr>
</tbody>
</table>

There were few explanations for the low ranking of the ‘Biology’ module but an indication is given by the following respondent:

The biology module, while interesting and relevant, did not have the same impact as the other modules, in causing me to think differently about my practice.

Thinking about practice

Additionally participants were asked to indicate if individual modules in the course had made them ‘think differently’ about their nursing practice. Table 2 shows the total number ‘yes’ responses for each module and the ranked position of the modules.

The ranking reflects that reported in the previous section dealing with the value of course content in developing clinical practice. Participants were again invited to explain their responses to this aspect of the survey. Comments were similar to those reported in previous paragraphs but some pointed to the value of the course in its entirety, for instance:

All the modules had an impact on the way I previously viewed nursing practice and the whole course gave me more confidence to ‘argue’ for changes in traditional practice.

Carrying out practice

Moving on from the ways in which the DPSN affected ‘thinking’ in practice, respondents were asked whether the DPSN had affected the way in which they ‘carried out’ their clinical practice. A total of 98 (86.7%) respondents reported that this was the case. Analysis of the reasons given by the respondents revealed nine themes (see Table 3). There were 196 separate points made by the 98 respondents to this question. Almost two-thirds of these were equally distributed among three of the themes. These were ‘the ability to apply research to practice’, ‘more questioning of practice’ and ‘possession of a wider knowledge for practice’.

Many respondents made the point that their practice was now more research-based, some gave particular examples illustrating the application of research to practice:

Clinically, the research module made me feel as if I too could be confident enough to change/improve certain practices.

Since completing the DPSN we have commenced a journal club examining areas of practice as a ward-based team — encouraging our colleagues to be research aware and research-based.

Forty-two responses referred to the way in which the course enabled them to question practice. A ward manager said:

The DPSN encouraged and enabled me to review critically the practices and routines within my area and unit wide. I now request research based rationales for new practices... Many staff now automatically question our work practices and patterns.

Another respondent stated that:
I have become more reflective in my practice and tend to think and question what I and my colleagues do.

The DPSN was also seen to provide a wider knowledge base for practice. One practice nurse described in detail how the work undertaken during the course had been presented to the primary health care team and was subsequently used to initiate `ways of addressing the prevention of osteoporosis’ within the practice setting. Many respondents referred to the effect of knowledge of the social sciences on practice:

Having never studied psychology or sociology I had more knowledge which helped me understand the actions and reactions of some patients and their relatives.

It gave me a broader knowledge of social and political issues surrounding health care, health and illness, and as such a greater ability to ‘understand’ the individuals and their problems.

Respondents were asked to agree or disagree with a series of statements related to the effects of the DPSN on their own clinical practice. Table 4 sets out the results for this section of the survey. In all aspects the majority agreed that the DPSN had a positive effect on the way in which they carried out nursing practice.

One respondent drew the distinction between being ‘better able’ to assess, plan and evaluate care as against the opportunity to carry this out in practice:

Personally I feel I am ‘better able’ to [assess, plan and evaluate care] as a result of undertaking the DPSN, but in practice it is not so easy... There seems to be support from colleagues and managers who have undertaken post-registration education but if not it is an uphill battle and very frustrating.

When questioned respondents cited time (63%), support from managers (56%) and lack of resources (64%) as being problematic when it came to applying their learning in the practice situation.

**DISCUSSION**

In the context of similar work this is one of the larger studies both in terms of overall numbers and cohorts involved. The results of this study support the findings of evaluations of both single courses (Bignell & Crotty 1988, Hughes 1990) and continuing professional education in general (Nolan et al. 1995, Hogston 1995). There also seems to be little difference between the results of this study and that of others irrespective of whether the courses were offered in higher education (Reid et al. 1987) or professional education settings such as colleges of nursing (Bignell & Crotty 1988). This strongly indicates that CPE is of benefit to clinical practice.

With regard to course content those areas which were identified to be of most value were those which receive little coverage in the pre-registration courses undertaken by respondents. Thus, legal and ethical issues, research, and sociology and social policy were identified as the most valuable. In contrast, biology, which formed a significant part of the curriculum of registered general nurse certificate courses, was seen as less valuable in this post-registration context.

The utilization of research in enabling practitioners to question the actions of themselves and others was a

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**Table 3**  Impact of the DPSN on clinical practice

<table>
<thead>
<tr>
<th>Theme</th>
<th>Number of responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application of research to practice</td>
<td>43</td>
</tr>
<tr>
<td>Wider knowledge for practice</td>
<td>43</td>
</tr>
<tr>
<td>More questioning of practice</td>
<td>42</td>
</tr>
<tr>
<td>Increased confidence</td>
<td>14</td>
</tr>
<tr>
<td>More assertive/challenging of practice</td>
<td>10</td>
</tr>
<tr>
<td>Improved teaching skills</td>
<td>10</td>
</tr>
<tr>
<td>More understanding of patient’s viewpoint</td>
<td>9</td>
</tr>
<tr>
<td>Improved management practice</td>
<td>6</td>
</tr>
<tr>
<td>Others</td>
<td>19</td>
</tr>
</tbody>
</table>

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**Table 4** Affect of DPSN on specific aspects of clinical practice

<table>
<thead>
<tr>
<th>Aspect of clinical practice affected</th>
<th>Agree (%)</th>
<th>Uncertain (%)</th>
<th>Disagree (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I am better able to assess patients</td>
<td>71% (79)</td>
<td>14% (16)</td>
<td>15% (17)</td>
</tr>
<tr>
<td>I am better able to plan patient care</td>
<td>67% (75)</td>
<td>18% (20)</td>
<td>15% (17)</td>
</tr>
<tr>
<td>I give better quality care</td>
<td>78% (87)</td>
<td>13% (14)</td>
<td>9% (11)</td>
</tr>
<tr>
<td>I am more able to evaluate care</td>
<td>82% (92)</td>
<td>9% (11)</td>
<td>8% (9)</td>
</tr>
<tr>
<td>I am better able to apply research to practice</td>
<td>90% (101)</td>
<td>8% (9)</td>
<td>2% (2)</td>
</tr>
</tbody>
</table>
recurring theme throughout, particularly in the open questions where respondents had opportunity to comment in more detail. This may be indicative of the increasing emphasis on research-based care within healthcare settings in the UK (National Health Service Management Executive 1993, Department of Health 1993), but also from a wider realization within the nursing profession of the value of informing practice through research.

Within nursing there has also been an ongoing debate regarding the relevance of the social sciences, and sociology in particular, to nursing practice (Cooke 1993, Sharp 1994, 1996, Porter 1995, 1997). The majority of the respondents in this study considered social science to be a very valuable aspect of the course and gave examples of how it led to a wider knowledge for practice. The results of this study support the case for the continued inclusion of the social sciences within nursing courses.

Results indicate that the respondents perceive themselves to be more questioning, more able to apply research findings and have a wider knowledge for practice following participation in and completion of the DPSN. This is supported by the work of Reid et al. (1987) and Nolan et al. (1995) in the UK and by Pelletier et al. (1994) in Australia. From the student perspective there is a strong view that the course has a positive effect on practice but a significant number of factors including time, lack of management support and limited resources seem to inhibit their ability to introduce change into practice. These findings may prove useful to managers who are in a position to capitalize on students’ motivation by creating an appropriate environment in which they can optimize the effect of the course on practice.

Study limitations

Whilst the sample size in this study and the number of cohorts is greater than in most previous studies there are some points which should be taken into account. This study is restricted to one particular course in one institution and therefore the results cannot be generalized. However, the course under consideration is very similar to those offered at other universities (CNNA 1993) so conclusions from this study will be of value to teachers and managers in other parts of the UK.

The study is also limited by the fact that it only considers the students’ view. Other significant people such as patients and managers have equally valuable contributions to make regarding the impact of the course on clinical nursing practice. The retrospective nature of this evaluation may have made it difficult for individuals to isolate the effect of the course on their practice. This is particularly so as many nurses have gone on to undertake other courses and continuing education activity following the DPSN. One student in particular pointed to this as a difficulty:

I am sure that my clinical practice has been affected by doing the DPSN. It is difficult to say exactly how as I completed it over 3 years ago and have had a lot of new experiences since then.

To a certain extent the application of these results is restricted because the respondents were, in the main, registered general nurses working in acute areas and they may have a particular view of continuing professional education. The overwhelming majority of respondents attended the course through their own volition and will have invested time, emotional and possibly financial resources in the course. Because of this they may have felt the need to emphasize the positive aspects of the course in order to justify their investment. However, the respondents in the main presented a balanced view of their experience indicating both positive and negative aspects. Also, the fact that these results are similar to those from previous studies supports the validity of the findings (Bignell & Crotty 1988, Hughes 1990, Hogston 1995).

CONCLUSION

This study has provided yet more support for the view that continuing professional education for nurses has a positive impact on clinical practice. The strength of the evidence from this study is given particular weight by the fact that the survey was conducted over a number of cohorts and included a larger total sample than many of the previous studies in this area. It was also undertaken following completion of the course, thus giving respondents the opportunity to reflect on its impact on their practice over time. The two substantial findings from this study are first, that the vast majority of respondents reported that the DPSN had positively effected the way in which they carried out their clinical practice. Second, legal and ethical issues, research and social sciences were valued above the biological sciences in enabling participants to develop, think about and act differently in practice. Given the findings of this and similar studies it would now be opportune to undertake research in the clinical setting that would examine the observable effect of CPE on clinical practice. This seems to be inevitable given the move toward evidence-based practice in health care.

Acknowledgements

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