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Nursing knowledge and the expansion of day surgery in the United Kingdom

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Abstract

Background: The amount of surgery undertaken within United Kingdom Day Surgery Units has risen considerably over the past 15–20 years. Throughout this pioneering era, nursing roles and responsibilities within the modern surgical environment have developed although have largely shadowed medical advances. Evidence based nursing knowledge appears to have contributed very little to the recent success of day surgery. This may be due, in part, to the lack of attention given to modern surgical practices within current pre-registration nurse education programmes of study.
Aim: The aim of this educational audit was to evaluate the consideration given to modern surgical practices in the programmes of study of recently qualified staff nurses employed within Day Surgery Units in the United Kingdom in order to gauge the extent of the challenge.
Method: A postal audit was designed and sent to $n = 247$ Day Surgery Units. The audit was intended to elicit information from the staff nurses regarding their experiences of modern, elective day surgery during their nurse education programmes of study.
Results: Two hundred and seventy seven staff nurses responded revealing that the level of attention to day surgery practices within pre-registration programmes was extremely low. The professions' actual and potential theoretical contribution to modern surgical practices was virtually nil. Their experience of pre-operative nursing intervention appeared mainly to involve the teaching of traditional surgical in-patients nursing skills. The inclusion of modern surgical practices into the theoretical assignments within the programmes of study was very limited. Once qualified, the vast majority of staff nurses experienced no additional formal education for their new role.
Conclusions: The results are discussed in relation to the re-focusing of pre-registration nurse education, changing clinical roles and the future of nursing within the modern surgical arena.
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Keywords: Ambulatory surgery; Nurse education; Clinical research; Nursing roles

1. Day surgery: a new era of surgical nursing intervention

The amount of day surgery being undertaken in the United Kingdom has risen considerably over the past two decades [1]. Currently, the government is seeking to increase the average level of day surgery activity still further from 60–65 to 75% of all elective surgery [2,3]. Three central strategies to aid expansion are currently being pursued (i) encouragement to increase current capacity, (ii) building of new treatment centres (formally diagnostic and treatment centres) and (iii) the introduction of National Tariffs. Firstly, wide differences in day surgery activity exist throughout the United Kingdom. If all the Day Surgery Units were as efficient as the best performers 120,000 more day-case procedures could be undertaken in day surgery facilities [4]. Efforts are therefore being made to help encourage Day Surgery Units to enhance their potential [5,6]. Secondly, the United Kingdom government is currently in the process of commissioning the building of new treatment centres both within the N.H.S. and the independent sector [7,8]. Treatment centres are new dedicated Day Surgery Units, generally built away from the acute hospital services. Approximately, 60–80 treatment centres are planned for England by the end of 2005 and a further 100 by 2006 [9]. Thirdly, alongside such expansion, National

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Tariffs or 'Payment by Results' for surgery undertaken is being planned. "It will mean that N.H.S. organisations are paid more fairly for the treatment they provide. Money will be linked directly to patients and patient choice so the more productive and efficient an N.H.S. Trust, the more it will benefit from extra resources" ([6] p. 61). The more efficient N.H.S. Trusts who undertake more day surgery will thereby be more financially rewarded. National Tariffs will be phased in over the next few years and be fully operational by 2008. "In particular, the Department (DoH), with the N.H.S., will look to develop incentives that help to reduce unnecessary hospitalisation" ([8] p. 69).

This rapid change in surgical healthcare delivery has ensured a major shift of emphasis in surgical nursing intervention [10]. Intermediate, elective surgical episodes once requiring lengthy hospital admission are fast disappearing from the in-patient ward, never to return, e.g. inguinal hernia repair, varicose vein stripping, cataract extraction, cholecystectomy and many more [11]. (Intermediate, elective surgery is defined here as planned uncomplicated surgery under general anaesthesia, which can be undertaken in an operating theatre in less than 1 h). Six years ago the British Association of Day Surgery recommended that at least 50% of all cholecystectomy surgery should be possible in day-case facilities [11]. The extensive physical pre- and post-operative nursing interventions once required by patients undergoing cholecystectomy are now becoming obsolete. This progress will inexorably lead over the next decade to the ever greater transfer of in-patient surgical procedures to day surgery facilities, e.g. hip replacement, prostatectomy and haemorrhoidectomy [12–14] and a constant decrease in the need for a considerable amount of physical surgical nursing intervention. Together with cost savings to be made from greater efficiency [15], National Tariff incentives and patients as willing accomplices to this surgical revolution [16,17] the further expansion of day surgery is inevitable.

In order to accommodate such a shift in surgical healthcare delivery the majority of nurses currently employed in Day Surgery Units within the United Kingdom undertake a multi-skilled role [18–21]. The adoption of numerous quasi-medical tasks by the profession is vital to ensure the safe and efficient throughput of patients in the limited time available. Much of this work is dominated by medical protocols in order to guarantee medical fitness for surgery [22–26]. Although such tasks are vital, an unfortunate consequence of such a rapidly changing medical agenda is that evidence based 'nursing knowledge' has contributed very little to the success of day surgery [27]. However, nursing knowledge may have a considerable part to play in the future as many challenging issues, which have the potential to be influenced by the application of nursing knowledge remain, e.g. pain management [28–32], psycho-educational intervention [33–37], nurse-led pre-assessment [38,39] and post-operative care [40,41].

The lack of awareness of the potentially valuable contribution nursing can afford day surgery practices may be due, in part, to the lack of attention given to modern surgical practices within current pre-registration nurse education programmes of study (modern surgical practices are defined here as the care and treatment provided to patients who spend 24 h or less in hospital surgical facility). Much consideration is given to traditional in-patient care within current pre-registration nurse education programmes of study although, as highlighted, such intervention now forms a far smaller element of the surgical nurses' clinical role. If nurse educators, in collaboration with clinical colleagues, do not expose students new to the nursing profession to the potential contribution nursing knowledge can offer this new surgical era, from where is the evidence for effective surgical nursing fit for the 21st century to arise? If the current trend continues the profession is destined merely to follow in the wake of day surgical advances, accumulating devolved medical tasks and re-labelling them as surgical nursing intervention with little or no discrimination in-between. The current United Kingdom government desires a large number of student nurses to be educated to help achieve their N.H.S. reforms [5,42]. Some of these longstanding reforms do not have the promotion of nursing knowledge as a central feature. For example, between 4000 and 5000 nurses, physiotherapists and operating department assistants will be appointed over the next decade, depending upon demand, as surgical assistants [43]. It could be argued that we are currently engaged in educating additional nurses today for many of them to be undertaking doctor's roles tomorrow.

In light of such expansion, an accurate evaluation of the position of nurse education in the United Kingdom in relation to the exposure of student nurses to modern surgical practices is required as a baseline from which to approach the challenge. The aim of this educational audit was therefore to evaluate the consideration given to modern surgical practices in the programmes of study of recently qualified staff nurses currently employed within the day surgery clinical environment, i.e. nurses who have qualified within the last 5 years (1999–Autumn 2004). The rationale being that new surgical nursing knowledge will not emerge while modern, surgical practices remain largely absent from programmes of study. The above specific time frame was chosen as it encompassed the period in which the 'Making a Difference' document was launched and implemented [44]. This document was designed to complement the N.H.S. strategy for the future [2].

2. Methodology

2.1. Literature review

In order to facilitate the study a literature search was undertaken employing the following nursing databases—RCN, Kings Fund, British Nursing Index and Cumulative Index of Nursing and Allied Health Literature (CINAHL). The following keywords were used with each database—day surgery and nurse education, surgery and nurse education, peri-operative care and nurse education, pre-operative care

and nurse education, post-operative care and nurse education and surgery and nursing curriculum.

Very little literature was uncovered. It would appear that aside from overarching reports such as Project 2000, Fitness for Practice and Making a Difference' [44–46] little or no specific clinical research has been undertaken to inform nursing curricula of the necessary modern surgical nursing skills and knowledge pertinent for the 21st century. Indeed, it has been argued that much of the rationale regarding the implementation of the initial Project 2000 programme was not sufficiently evidence based [47]. The implementation of Project 2000 originated from two main sources both of whom argued, alongside other issues, for the abolition of nurses as apprentices and a move towards a more 'knowledgeable doer' [45,48]. Although both are very laudable issues, there appears to have been a distinct lack of research evidence from the outset concerning, modern clinical practices. The Making a Difference document was designed to succeed the reforms of Project 2000 [46] and generate a modern, nursing curriculum intended to help deliver the N.H.S. Plan of healthcare reform [2]. Within the Making a Difference document there is only one very brief mention given to modern surgery within the context of surgical nursing and meagre overall reference to nursing research per se [49].

No nursing research was uncovered to help inform the pre-registration nurse education programmes of study but a number of studies have highlighted post-qualifying nursing roles within modern surgery, i.e. extended roles and nursing within pre-assessment clinics. Firstly, extended nursing roles in modern surgery are developing in anaesthesia [50–52], laparoscopy [53] and surgery [54,55]. The development and extension of nursing roles is a central theme in the N.H.S. Plan [2,5,56] as nurses are viewed as a flexible workforce who can undertake additional medical skills. Secondly, the pre-assessment of patients is a vital pre-requisite for successful, safe day surgery [57–59]. Courses are being designed for nurses to learn the skills required in the pre-assessment clinics and thereby help to improve day surgery efficiency [60]. However, extended roles and the gaining of pre-assessment skills both embrace devolved medical tasks [23,26,38,61–65]. Unfortunately, the exposition of nursing knowledge is again not considered although some studies have demonstrated the value of nursing skills in the pre-assessment clinic [39,66]. Largely, it is the interpersonal skills of the nurse that have contributed to the patients' positive experiences [67]. Nevertheless, interpersonal skills, the provision of information and psychological aspects of care remain peripheral issues delivered on an ad hoc basis and marginalised by other essential medical tasks.

2.2. Materials and participants

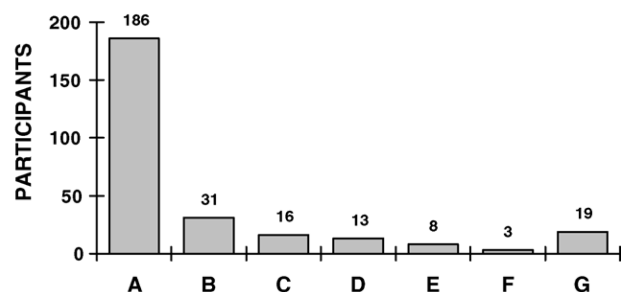
An audit form was constructed to gain an overview of the exposure to day-case surgical practices within the respondents pre-registration nurse education programmes of study. The items were brief and straightforward with the focus upon the amount of attention given to modern, day surgery practices within their recent programmes of study, i.e. theoretical content, assignments, type of surgical intervention taught, clinical placements in day surgery, post-qualifying studies and country of pre-registration study. The audit did not discriminate between diploma and degree pre-registration education. Items were designed with the flexibility to gain all responses. For example, "Approximately, how many hours were spent while in the School of Nursing during your pre-registration education specifically studying day surgery practices? (Answer) 1, 2, 3, 4, 5, 6 or more hours." The audit form was purposely kept brief and uncomplicated to aid the response rate.

The educational audit form was sent to Day Surgery Units ($n = 247$) within the United Kingdom utilising the addresses freely available via public access media. Day surgery managers were invited to question the staff nurses employed within their Day Surgery Units, respond to the audit and return it in the pre-paid envelope provided. Only staff nurses who had qualified since 1999 and Autumn 2004 were invited to complete the audit, as previously explained, this is the period in which the 'Making a Difference' document was implemented.

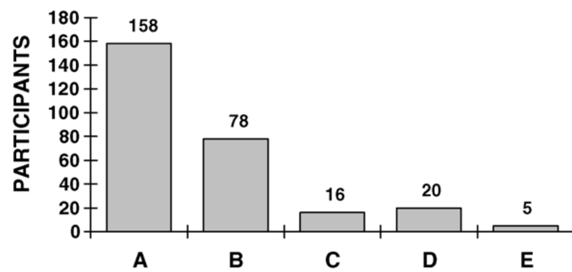
3. Results

A response rate of 42% was achieved. As there were frequently several staff nurses employed within individual Day Surgery Units who met the criteria, the final number of respondents was $n = 277$. A total of 58% ($n = 158$) respondents did not have the experience of a day surgery placement during their nurse education programme whereas 43% ($n = 119$) did have the benefit of a placement.

Sixty-seven percent ($n = 186$) experienced no theoretical input into modern day surgery nursing practices at any time throughput their 3 year programmes (Graph 1). Respondents were also invited to specify, which phrase best described the post-operative care taught throughout their programmes of study. The choices ranged from 'Traditional in-patients post-operative care' through to 'Day surgery post-operative care' (Graph 2). The majority (57% or $n = 158$) indicated



Graph 1. Theoretical input into day surgery practices during pre-registration nurse education. (A) None, (B) 1 h, (C) 2 h, (D) 3 h, (E) 4 h, (F) 5 h and (G) 6 h or more hours.

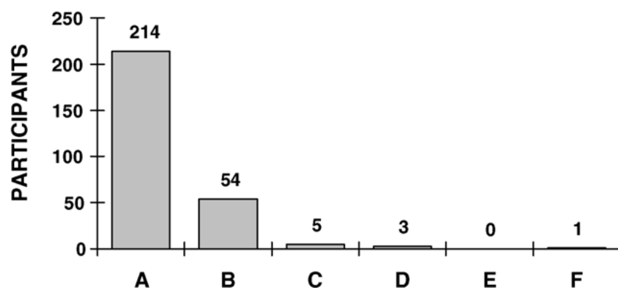


Graph 2. Post-operative nursing intervention taught during pre-registration nurse education. (A) Traditional in-patient post-operative intervention, (B) in and out-patient post-operative intervention, (C) traditional in-patient and day surgery patient post-operative intervention, (D) traditional in-patient, out-patient and day surgery post-operative intervention and (E) day surgery post-operative intervention.

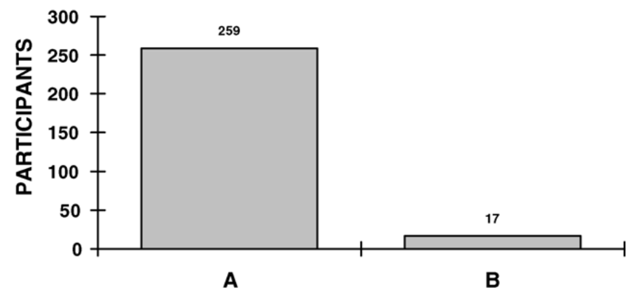
they had received 'Traditional in-patient care' only. The second largest group at 28% ($n = 78$) was 'In-patient and out-patient post-operative care' (Graph 2). Therefore, 85% ($n = 236$) of all post-operative nursing intervention taught to this group of staff nurses, currently employed within the day surgery environment, concerned in-patient and out-patient post-operative care only. Consequently, 85% of respondents received no instruction on post-operative day surgery nursing intervention.

Respondents were also asked to indicate the number of theoretical assignments presented throughout their 3 year programme of study that had encompassed modern day surgery practices. Seventy-seven percent ($n = 214$) indicated they had undertaken no theoretical assignments relating to day-case surgery followed by 20% ($n = 54$) who had undertaken only one such assignment. This indicates that 97% ($n = 268$) of staff nurses currently employed within the day surgery clinical environment, who responded to this educational audit, had undertaken no theoretical assignments (or a minimal number) relating to nursing practices in modern day surgery (Graph 3). Of note is the one staff nurse who had experienced six theoretical assignments during his/her programme of study. However, this nurse had undertaken his/her programme of study outside the European Union.

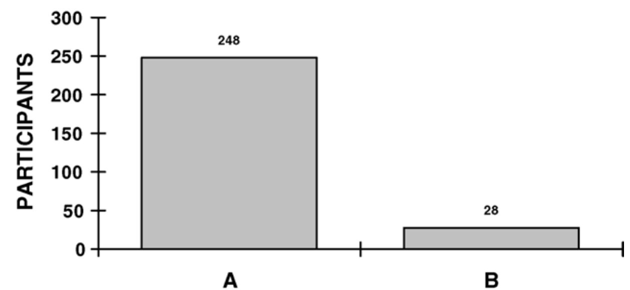
The vast majority of respondents (94% or $n = 260$) had undertaken their nurse education within the United Kingdom



Graph 3. Day surgery theoretical assignments undertaken during pre-registration nurse education. (A) None, (B) one theoretical assignment, (C) two theoretical assignments, (D) three theoretical assignments, (E) four or five theoretical assignments and (F) six or more theoretical assignments.



Graph 4. Country where pre-registration nurse education programme undertaken. (A) United Kingdom and (B) outside European Union.



Graph 5. Formal post-qualifying day-case surgery education. (A) None and (B) some (specific to day surgery).

with $n = 17$ staff nurses undertaking it outside the European Union (Graph 4). Finally, the respondents were requested to indicate what formal programmes of education, specifically relating to day surgery practices, they had undertaken since becoming a qualified nurse and practicing within the day surgery environment. Ninety percent ($n = 248$) had undertaken no formal post-qualifying programme of study relating specifically to day surgery practices (Graph 5).

4. Discussion

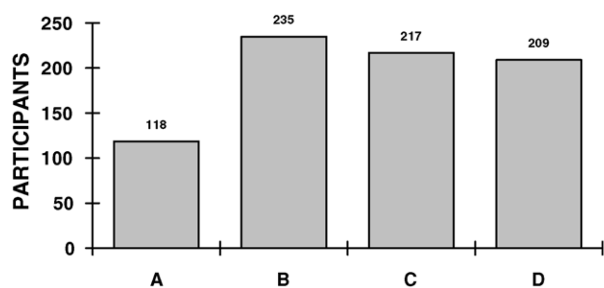
The aim of this audit was to evaluate the consideration given to modern surgical practices in the programmes of study of recently qualified staff nurses currently employed within the day surgery clinical environment. The results reveal a less than ideal representation of current pre-registration nurse education programmes of study in the United Kingdom in relation to the preparation of nurses for the modern, day surgery environment. The issues these results raise will be considered under the following subheadings of nurse education, clinical nursing roles and the future of surgical nursing within modern, elective surgery.

4.1. Nurse education

Pre-registration diploma and degree programmes of study clearly cannot include all aspects of nursing, as the length of such programmes would be prohibitive. Surgical nursing is changing and will never return to previous ways. Programmes of study, which primarily focus upon traditional surgical

nursing intervention, are now obsolete. Traditional surgical nursing intervention is defined here as (i) pre-operatively—a patient admitted in advance of the day of surgery and requiring much physical, social and psychological aspects of care and (ii) post-operatively—a patient who remains in hospital for more than 24 h requiring much physical, social and psychological aspects of care. As stated previously, this type of patient is now in the minority as the current United Kingdom government plans for 75% of all adult, elective surgery to be transferred to day surgery facilities [2]. Current 3 year programmes of study in which two-thirds of nurses are not receiving any theoretical insight into the nursing challenges confronting day surgery may be considered by many as unacceptable.

On a more positive note, 43% of the staff nurses experienced a day surgery placement during their programme of study. With 85% experiencing no day surgery post-operative management, 79% virtually no theory and 77% no specific assignments, is 43% gaining a placement truly concerned with day surgery enhancement or merely a convenient clinical placement within a very congested clinical placement programme (Graph 6). The staff nurses who responded to this educational audit were manifestly not prepared for their new roles in modern surgery—clinically or theoretically. It is recognised that nursing is diverse and many surgical patients will still require the traditional surgical nursing skills, highlighted above. However, programmes of study must remain clinically updated and gain greater flexibility in order to avoid the issues raised here. The development of modern day surgery and the potential contribution the nursing profession can offer must become an integral part of all pre-registration nurse education programmes. Based on the results of this educational audit, the priorities within surgical nurse education programmes must be completely reversed. The majority of pre- and post-operative nurse education should now be concerned with modern surgical practices and patients who experience 24 h or less in hospital. The minority of pre- and post-operative nurse education should be concerned with in-patient surgical practices and patients who experience 48 h or more in hospital. Theoretical assignments throughout all programmes of study must also reflect this changing emphasis. A greater emphasis must be placed upon the generation and utilisation of clinical research into modern, surgical nursing practices to prevent the profession falling even further behind in this day surgery revolution.



Graph 6. Day surgery clinical placement in comparison with theoretical exposure. (A) Number of students experiencing a day surgery placement. (B) Number of students experiencing NO theoretical post-operative management in modern surgery. (C) Number of students experiencing little or NO theoretical issues relating to modern surgery. (D) Number of students experiencing NO assignments relating to modern surgery.

4.2. Clinical nursing roles

Only 43% of the staff nurses who responded to this educational audit experienced a clinical placement within day surgery during their 3 year programme of study. Many transferable skills will certainly have been acquired during other clinical placements although numerous aspects within modern surgery are unique because of the limited time available on the day of surgery, i.e. rapid recovery from anaesthesia [68–70], post-operative pain management [31] and early discharge following surgery [68,71–74]. Undoubtedly, extensive clinical supervision and clinical mentorship will have also occurred during the period since qualification. Programmes of a more formal nature are undeniably lacking, as 90% of respondents had undertaken no post-qualifying course in day surgery. Many respondents commented that this was not due to a lack of motivation but a shortage of finances and the limited number of courses available. In a comprehensive report undertaken to evaluate day surgery services [75] it was stated that insufficient funds were available for post-qualifying day surgery nursing studies and more should be made accessible. Since the publication of the report, such financial resources have evidently not emerged. Such limited resources available for post-qualifying nursing staff only seeks to reaffirm the crucial importance of pro-active and clinically dynamic pre-registration programmes of study.

Almost 80% of staff nurses experienced very little or no theoretical input into modern, day surgery nursing practices, e.g. extended roles, multi-skilling, pre-assessment, pain management. Likewise, little or no relevant political healthcare issues with the potential to impact greatly upon future surgical nursing intervention could have been conveyed, e.g. expansion of Treatment Centres, National Tariffs. With no theoretical insight into modern surgical practice, no overview of the changing political agenda and almost no post-qualifying education it is completely understandable why evidence based ‘nursing knowledge’ has currently contributed very little to the success of day surgery. Many recently qualified nurses have clearly not been exposed to such issues. Prior to the acceptance of nursing students to any Day Surgery Unit in the United Kingdom it may be of great benefit if the clinical staff enquire about the theoretical component within the student’s curriculum in relation to modern surgical practices. Additionally, this enquiry should extend to the number of theoretical assignments associated with modern surgery.

It has been recommended that nurse education should become more flexible and consider developing more distance learning packages, especially for post-qualifying courses [76,77] or more web-based learning approaches [78]. Such

programmes have indeed started to emerge although not without their problems [79]. Innovative distance learning programmes in modern day surgery have also been commenced in response to the issues raised above [59]. A central feature of day surgery is the utilisation of pre-assessment clinics where nurses require a number of additional skills, e.g. interpretation of electro-cardiographs (ECG), purpose and calculation of body mass index (BMI), purpose and calculation of the American Society of Anesthesiologists (ASA) scoring system, unique patient information requirements, etc. The Modernisation Agency produced a high-quality learning resource containing extensive information plus a compact disc for tuition purposes [59]. This distance learning resource has (i) evidently not yet reached the day surgery staff within this educational audit and (ii) is only concerned with exposure to the largely medically orientated tasks of pre-assessment. Although nurses require such instruction for this role, such initiatives again do little to champion nursing knowledge and enable the profession to deliver a valued and lasting contribution to modern, surgical nursing practices well into the 21st century.

4.3. Future of nursing within the modern surgical environment

The current United Kingdom government plans to reduce the waiting time for in-patient surgery to 6 months by December 2005 and remove all waiting time completely by 2008 [8,80]. In an effort to achieve this target, dedicated day surgery facilities are being expanded and new treatment centres built [7]. The additional treatment centres planned for the end of 2005 will treating an extra 250,000 patients per year [80]. While nurses employed within treatment centres will predominantly remain in the familiar multi-skilled day surgery role, future employment may be based on a competency rating scale, i.e. ability to perform such tasks as venipuncture, cannulation, electro-cardiograph (ECG) reading, etc. [9]. Additionally, other ways in which nurses can be employed are being explored, as stated above [9,43,81]. It is suggested that nurses should welcome such change as new opportunities will become available, i.e. convenient working hours, scope for extended roles, improved continuity of patient care, new well-equipped clinical environments and the possible introduction of new 'school term' contracts [9,82]. All such developments intrinsically signify the continued adoption of quasi-medical tasks with, again, seemingly little or no input from nursing knowledge regarding the most effective nursing intervention for the modern surgical patient.

From the evidence gained in the present study, two main challenges will arise when modern treatment centres become more widespread and nurses are increasingly delivering care in the manner described [8]. Firstly, how will nurses be educated to undertake the extended roles suggested, i.e. anaesthetic care, electro-cardiograph reading, venipuncture and cannulation? This educational audit indicates that inadequate education currently exists for day surgery within pre- and post-qualifying programmes prior to further expansion. The distance learning programmes presently offered appear so far to have made little impact. Secondly, considerable evidence suggests that pain management following day surgery [28–32,83], pre- and post-operative psycho-educational intervention [33–37,84], nurse-led pre-assessment clinics [38,39,85] and post-operative primary care [40,41,86] remain challenging issues in need of improvement. Exposure to day surgery practices was extremely limited in pre-registration programmes and 90% of staff nurses had undertaken no formal education in day surgery since qualification. Such challenges to the patients' experiences of day surgery will inevitably remain or even increase with this planned expansion if nurses are predestined always to undertake such quasi-medical duties and nursing knowledge, with the potential to contribute to modern surgical practices, is overlooked.

5. Conclusion

Staff nurses who qualified during the period between 1999 and Autumn 2004 were invited to respond to an educational audit concerning their exposure to modern surgical practices during their 3 year pre-registration programmes of study. Very little evidence of dynamic, clinically realistic programmes of study, which equipped the nurses for practice in the modern surgical environment, emerged. The nursing profession should, as a priority (i) reverse the emphasis placed upon surgical nursing intervention within all programmes of study and (ii) undertake clinical research to determine the evolving skills required by nurses in the modern surgical environment. New knowledge regarding the evolving role of the nurse in modern, elective day surgery is required directly. The trend to accumulate devolved medical tasks and re-label them as surgical nursing intervention cannot continue to go unchallenged, as many pressing issues within the nursing domain exist. The profession should also petition for increased post-qualifying resources that examine nursing issues in modern surgery rather than constantly extolling the virtues of extended roles. With the inevitable expansion of day surgery, extended roles are gaining greater prominence to the potential detriment of other highly valuable nursing issues.

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