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abbey.hyde@ucd.ie

NURSE-RELATED FACTORS IN THE DELIVERY OF PREOPERATIVE PATIENT EDUCATION

Abstract

Background Since landmark studies of preoperative education undertaken in Britain in the 1970s identified the superiority of structured programmes of patient education over and above 'regular' preoperative care, there have been many intervention/outcome experimental studies carried out in this area. However, there has been little interpretative work conducted that explores the regular, or 'usual' preoperative education given to patients in everyday surgical units.

Aims/objectives This article aims to explore the factors relating to nurses themselves that influence the delivery of preoperative patient education in everyday surgical clinical contexts at one large general adult teaching hospital in Ireland.

Methods A sample of 12 experienced surgical nurses was selected, and each participant was interviewed in depth. Data were analysed using a qualitative strategy resembling grounded theory.

Results Findings indicate that preoperative education was variously interpreted by participants, and participants' accounts suggested that different understandings and practices by nurses resulted in patients receiving different levels of care. In addition, diverse levels of knowledge and experience of individual nurses resulted in unevenness in the type of preoperative education that patients received. A number of participants advocated a more formal method of preparation for nurses in the area of

preoperative education. Finally, in some surgical areas, specialist nurses worked side-by-side with regular ward nurses and their input in preoperative education was largely seen by participants in a positive way, particularly in view of the structural constraints that ward nurses faced.

Conclusions We conclude that nurse-related factors in preoperative education do not arise in a vacuum, but rather are related to the wider organisational practices and culture. The difficulties with preoperative education identified in data may be addressed through organisational investment in preoperative education.

Relevance to clinical practice This paper produces evidence for nurses and clinical nurse managers about how nurse-related factors impede preoperative education, and may provide a starting point for how to begin to address obstacles to better preoperative care.

Key words: Preoperative; education; nurses; qualitative; regular preoperative care.

Background

Preoperative education is variously described in the literature, and is loosely used to refer to different types of educational interventions that occur in the period before surgery, including the following: (i) the provision of health information; (ii) skills training for patients such as teaching breathing and leg exercises; and (iii) the provision of psychosocial support to address patients' anxieties, needs and concerns (Devine 1992). In this article, we present findings from a study aimed at gaining insights, from a qualitative perspective, on how preoperative education is managed in the context of an acute Irish hospital setting. In spite of an abundance of experimental studies on preoperative education (which we will consider a little further on) there has been relatively little qualitative research into this aspect of care.

Our focus in this paper is on one component of the findings - how nurse-related factors mediate the delivery of preoperative patient education in an everyday (rather than an

'experimental') setting. By nurse-related factors, we mean factors that are specific to the nurses delivering the education, such as how they construct the notion of preoperative education, their knowledge and experience, their own educational needs in relation to learning the skills of preoperative education and the role of regular clinical nurses relative to their specialist colleagues. Other related factors that emerged in data included details of the content of material delivered in the preoperative educational process, and the manner of teaching, as well as wider structural components of the learning environment - space restrictions prevent us from dealing with these additional issues in this article

Since the landmark studies of Hayward (1975) and Boore (1978) which explored the effect of structured preoperative education on patient outcomes such as pain, anxiety and rate of recovery, there have been many intervention/outcome experimental studies carried out in this area. Several meta-analyses aimed at synthesising the knowledge base have been conducted over the years (Devine & Cook 1986, Hathaway 1986, Devine 1992, McDonnell 1999, Hodgkinson *et al* 2000, McDonald *et al* 2004). Of these, just one Cochrane review in the area of preoperative education has been published, and this specifically focused on the topic of preoperative information for people having hip or knee replacement (McDonald *et al* 2004). The review concluded that while there was evidence of a modest beneficial effect of preoperative education on post operative anxiety, there was little evidence of the benefits of preoperative education compared to regular care with regard to improvements in postoperative pain levels, functioning and length of hospital stay. While the results of this review are disappointing for clinicians committed to structured preoperative education, account must be taken of the fact that the review was confined to just one patient category, and greater successes may be possible with other patient groups.

Indeed, other recent systematic reviews on preoperative education have presented more promising results. McDonnell's (1999) review included 18 studies, and defends the superiority of psychoeducational interventions over information provision alone - the provision of information alone preoperatively was not found to impact on patient outcomes. The most recent general systematic review to be published found that

knowledge retention was higher when information was introduced preadmission, and the learning of skills was enhanced (Hodgkinson et al 2000).

Recent individual studies that attempt to measure preoperative educational interventions of various kinds are yielding mixed results. Asilioglu and Celik (2004) conducted an experimental study to evaluate the effects of preoperative teaching on anxiety levels of patients (N=100) having open cardiac surgery. Half of the sample was assigned to an intervention group and half to a control group. Those in the intervention group experienced planned teaching according to a patient education booklet, while the others received routine nursing care. Results indicated that the mean postoperative state and trait anxiety score in the control group was slightly higher than the mean of the patients in the intervention group; however the differences between the groups were not statistically significant ($P > 0.05$).

In another recent intervention study on two groups of 30 patients, Sjoling et al (2003) tested whether specific information given prior to surgery could help patients obtain better pain relief after total knee arthroplasty. The intervention group received specific information while the control group were given routine information. Pain assessments were made at regular structured intervals using an established pain scale. Sjoling et al concluded that the level of state anxiety was lower (MW-test: $P < 0.05$) and greater satisfaction levels with postoperative pain management were reported among those in the intervention group; the difference between the two groups was statistically significant (χ^2 -test: $P < 0.05$) in this regard. Nonetheless, the study also found that there were no differences between the groups in terms of the experience of pain, use of analgesics or period of hospitalisation.

LaMontagne et al (2003) evaluated the effects of coping instruction and concrete-objective information on adolescents' postoperative pain. A randomized controlled trial involving 66 young adolescents (age 11-14) undergoing major spinal surgery for idiopathic scoliosis was conducted. The researchers found that on the fourth day after surgery, adolescents receiving coping instruction (a specific coping intervention) reported

less pain than those who had not received coping instruction. However, they are fairly guarded in their conclusion that such pain-reduction strategies *may* be more efficacious than other mechanisms following major spinal surgery.

Recent studies by both Shaban et al (2002) and Cheung et al (2003) have reported more favourable results. Shaban et al (2002) undertook a quasi-experiment that aimed to evaluate the effect of respiratory exercise on acute respiratory complications and the length of hospitalization in patients undergoing coronary artery bypass surgery. The study consisted of 60 patients (42 male and 18 female), whose ages ranged from 30-70 years. The subjects were randomly allocated to two groups. The experimental group received two sessions of video-teaching while the control group received routine care. Results indicated a significant difference between incidence rates of atelectasis ($P = 0.01$). The length of hospitalization among the experimental group was also less than that of the control group ($P=0.02$). The researchers concluded that video-teaching is effective in terms of post-operative outcomes. Cheung et al (2003), in a controlled trial designed to investigate the postoperative effect on Chinese women undergoing abdominal hysterectomy of a cognitive intervention (distraction and reappraisal) with information given preoperatively, also reported positive outcomes. The experimental group ($n=48$) received the cognitive intervention with information, while a control group ($n=48$) received information alone. Findings indicated that, although there were no statistically significant differences in post-operative requests for analgesia between the groups, women in the experimental group reported lower post-operative anxiety scores, lower pain scores and higher levels of satisfaction than women in the control group.

The impact of preoperative education on *preoperative* anxiety has also been noted in a recent randomised controlled trial (Giraudet-Le Quintrec et al 2003). Giraudet-Le Quintrec et al (2003) compared patient education before total hip arthroplasty with the usual verbal information. Patients receiving education were significantly less anxious just before surgery than were those in the control group. They also experienced less pain before surgery and were able to stand sooner. However, after surgery, the tendency

toward lower anxiety scores was not statistically significant. The authors concluded that patient education decreases *preoperative* anxiety and pain in patients having hip surgery.

Whilst these new individual studies present snapshots of the status of contemporary preoperative education, many are conducted with such small sample sizes and other methodological flaws that they would not meet the scientific rigour demanded for inclusion in Cochrane reviews. Future Cochrane reviews will be most telling in terms of determining the broader picture of the efficacy of preoperative educational interventions. Meanwhile, it would be premature and unwise to abandon the notion of structured preoperative education on the basis of the disappointing results of a single Cochrane review on a specific patient category.

A further issue for clinical practitioners is that within individual studies on preoperative education, a wide range of different approaches and methods are utilized, making it challenging to ascertain a 'best' approach to carrying out preoperative education. Shulldham (1999) highlights the lack of clarity available to guide practice despite the plethora of studies published. The varying combinations of methods used to deliver preoperative education were systematically reviewed by Hodgkinson *et al* (2000) and include group lectures, single or in a series; one to one teaching; the use of pamphlets; audio-visual presentations, or a combination of one or more of these. The provision of written materials, in conjunction with verbal instruction, is one of the more common methods of providing information, and has been deemed the most effective (Cochrane Collaboration Consumer Network 2000, Hodgkinson *et al* 2000).

In spite of a great deal of research into preoperative education, there is a relative absence of interpretative work exploring how nurses construct the concept of preoperative education, and what factors influence how it is managed in everyday practice. Just one qualitative study was located that focused specifically on preoperative education (Lee & Lee 2000). Lee and Lee (2000) conducted case study research of two surgical units to explore how nurses organise and implement preoperative teaching. Data were collected through open-ended semi-structured interviews. It is unclear from the report how many

nurses participated in the study, though responses from eight individuals were counted in the findings section. The findings of the study revealed that the content and focus of preoperative education varied between respondents, though all participants focused on the physical and technical aspects of what patients ought to expect such as drips, drains, and patient controlled analgesia. The workload of participants was seen to impact on their ability to engage in preoperative education, and when time was at a premium preoperative education was not a priority and some patients did not receive it. This was further complicated by the timing of admission and high turnover of patients; when patients were admitted the morning of surgery, sometimes several patients at the same time, the time to educate was further reduced.

In summary, virtually all existing research has focused on specific patient education programmes rather than on the 'usual' practices of nurses, and has employed quantitative methodologies. The present study was undertaken to address this knowledge gap and methodological bias. Our focus is on exploring the perceptions of a sample of surgical nurses with regard to their 'regular' preoperative education, that is, the type of education that occurs in the usual humdrum of nursing practice when there is no particular 'structured' programme in place.

Methods

The study site was a large general teaching hospital in Ireland, to which ethical assess was successfully negotiated. The criteria for inclusion in the study sample were that participants must be registered general nurses, have at least 2 years' post registration experience of working on a surgical. The rationale for this was to ensure that each informant had a substantial amount of experience of caring for surgical patients. One of the authors [EF] arranged to meet with nurse managers of surgical units where potential participants worked, and nurses fitting the inclusion criteria were identified. Such nurses were then invited to participate, and were provided with supplemental written information about the nature of the study. The first 12 nurses who satisfied the inclusion

criteria and volunteered willingly became participants. Informed consent was obtained and the protection of identity assured.

The method of data collection was face-to-face, semi-structured, tape-recorded interviews using a topic guide, that is, a set of predetermined topics identified as important in the course of undertaking the literature review and used to structure the interviews. The interviewer was an experienced surgical nurse (EF). Interviews took place in a private place at participants' place of employment. Data analysis was influenced by Glaser & Strauss' (1967) and Glaser's (1978, 1992) processes of open coding, category development, and constant comparative analysis of data with data, data with category and sub-category, data with theory and theory with data. The process of analysis was facilitated using NUD*IST software.

Results

Multiple perceptions of a poorly defined aspect of care

The vast majority of participants expressed the view that the education a patient receives is very much dependent on the particular nurse caring for that patient. This was attributed to the fact that nurses can have differing views about what preoperative education should be, and can therefore conduct and prioritise it differently. The informal nature of preoperative education lends itself to multiple constructions of this aspect of care. Although individuals will of course have their own perceptions of a concept, comparison of individual views revealed awareness by participants that different interpretations and practices by nurses resulted in patients receiving different levels of care.

I don't think everybody gives the same information. Some nurses are very clear, I suppose, very relaxing as well to speak to a patient, while others mightn't spend enough time. (P#10)

I don't think it's very structured. It's not completely informal either but I don't think it's,

em, what's the word, it's not standardised, if you like. So I could give one type of education I think is right and another nurse would give another type of education that she thinks, or he thinks is right. So it not standardised so it is probably fairly informal really. (P#8)

Knowledge and experience of the individual nurse

The majority of participants believed that the knowledge and experience of the individual nurse influenced the standard of education received by patients. Lack of confidence related to inexperience was seen to result in avoidance of engaging in education by nurses, thus omitting the opportunity for patients to ask questions.

I think it is quite unstructured. I think it depends on how long somebody has been working in the ward, how long they're qualified (P#10)

So it very much depends on the nurses and how prepared they feel to launch into things. I think people who aren't there as long, and who aren't as qualified, would rather not get involved in the whole questions and answer thing so they just leave it. You know, if they don't ask, they're not going to go volunteering information. I think that has a lot to do with it and they [patients] may not necessarily be given the opportunity to ask questions. (P#7)

Junior nurses were seen as dependent on senior nurses for guidance on what to tell patients. In this sense education was not seen as collaboration between nurse and patient, but as the provision of information.

It's informal at best, and its and it has a lot to do with experience in general really. Em, and I think if you are a junior nurse working in an acute hospital setting you are relying an awful lot on the senior nursing staff to tell you what to say to the patients. It probably should be more formalised. (P#9)

The educational needs of nurses

A number of participants spoke about the educational needs of nurses in relation to being prepared to carry out preoperative education. Views were expressed about ongoing educational needs, and the needs of new members of staff entering a specialty surgical area

We should be educated about, you know, what we're supposed to be telling them or not telling them, or what the latest ideas are. I suppose the nurse should be educated in pre-op education, therefore the patients will get proper education then. (P#8)

...if there was somebody to initiate nurses onto the ward, like you know if someone comes on new onto the ward that they be taken for the day and say this is the speciality, this is the area we have identified that people need to be educated in generally. Plus you need to find out what the patient is worried about. I suppose you'd need to do research, you know sort out what people are actually worried about on the ward, patient wise, and to identify those problems then decide how to intervene with them and then educate every nurse who comes on to the ward, so that that way the thing would be standardised. (P#9)

Several participants indicated that their knowledge of how to teach had been picked up along the way, and a desire for theoretical input into patient education was expressed.

I've never done anything on patient education you know, that kind of thing, formally. It was just picked up as I went along. (P#6)

I'd love to know about theories of learning myself...(P#10)

The role of the nurse specialist

Participants often worked side-by-side with specialist nurses (for example, specialists in gynaecological cancer or stoma care) in the clinical realm, and viewed the preoperative education that patients received from such specialists as superior to their own input. Patient education provided by these specialists was seen as highly formalised, with the

utilisation of a variety of teaching tools and access for patients to a specific source of information.

I think we're still stuck in the ritual sense of things at the minute, although with the nurse specialists, the cancer nurse specialists, they [patients] get proper education...If they're going for radical prostatectomies or something like that they're seen every week or two weeks before the procedure and they're given written information, oral information, and then they can ring up if they want to beforehand, and that's good, they're well prepared for their operations. (P#8)

However, one participant expressed concern about the potential for the de-skilling of staff nurses arising from having specialist nurses to which patients are referred to preoperatively.

Like, any cancer patients that we get in she'll [the Cancer Nurse Co-ordinator] talk to them before their operation, so she covers an awful lot of the cancer area and the cancer queries, so I hope she's not de-skilling us too much. That's the only danger when you have somebody so expert, that she automatically gets referred to the people like that. (P#7)

Several others did not express this concern and viewed specialist nurses for education as the 'right' people to provide specific education to patients.

... you're liaising with your different people. Like someone's going for bowel surgery, then you know you've got your different specialists, your specialists like the stoma care nurse, all the right people to come along and educate them on the specifics of what to expect afterwards. (P#6)

Specialist nurses were also seen as meeting patients' educational needs, which otherwise would not be possible owing to lack of time of staff nurses at ward level.

People who are going for repairs they're seen by [name of Urodynamics Nurse Specialist], she teaches them how to do, like, self-catheterisation, that's so important, we wouldn't have time to do that if they're coming in the night before for a procedure the next morning. We wouldn't have time. (P#8)

The time pressure at ward level also meant that when patients had access to a specialist nurse for preoperative education, this was perceived as a relief as there was less educational input for nurses at ward level to deliver.

I know that the patients coming in for a prostatectomy have spoken to [name of Cancer Nurse Co-ordinator] so I know they've spoken about the risks...they're well aware of the impotence, they're well aware of all those things, so all I have to worry about is whether they're afraid of pain, or whether they're afraid generally of having a drip, all those things, so it makes it easier for me if I don't have so much time to do, you know, proper education. (P#8)

On the whole, the presence of the specialist nurses in providing preoperative education was positively welcomed by participants.

Discussion

Data suggest that for participants, preoperative education was not a clearly defined aspect of care, and that perceptions and practices varied, leading to inconsistency in care across patients. In addition, versions of how to educate preoperative patients are learned as nurses 'go along', with junior nurses and staff new to a unit dependent on other members of staff to guide them on how to educate patients. Moreover, in learning to educate patients through this type of informal mentoring system, the focus seemed to be on the content required to deliver to patients rather than the processes through which to do this. Participants themselves identified the need for nurses to be formally educated about educational content, and a desire for theoretical input regarding teaching and learning strategies was evident when the interviewer raised this topic. Nurses in specialist roles were seen to contribute positively to preoperative patient education as their educative role was highly formalised, and also their input reduced the workload of ward based nurses when patients were admitted soon before surgery. However, for one participant, the role of specialist nurses in educating patients seemed to be simultaneously viewed as both a benefit and a threat.

Participants in our study perceived that how preoperative education was managed was to a large extent up to, and dependent on, the individual nurse caring for a particular patient. Linked in with this perception was the acknowledgement that this is an aspect of care that is poorly defined, therefore it can mean different things to different people. This finding concurs with that found by Turner *et al* (1999) in their exploration of how patient education is carried out by nurses in an acute hospital setting. In practice, it seems that this must contribute to inconsistency in care across patients, which was a key finding of concern for the patients interviewed and surveyed in previous studies such as those of Breemhaar *et al* (1996) and Krupat *et al* (2000).

Our data also suggest that how preoperative education occurs is further complicated by the degree of experience and knowledge of the individual nurse. Preoperative education may be overlooked among patients cared for by junior nurses, due to lack of knowledge, experience and confidence on the part the nurse. The impact of these factors on patient education has previously been noted by several authors (Close 1988, Noble 1991, Turner *et al* 1999). Close (1988) suggests that improved pre and post- registration education of nurses is needed to prepare patients for their role as educators, and such a need was highlighted by several participants in this study. Luker & Caress (1989) argued that it is unlikely that the skills necessary for effective teaching could be acquired at pre-registration level or through brief episodes of post-registration education, and suggested as an alternative the development of specialist nurse educator roles. Noble (1991) expressed concern at such proposals, however, due to the risk of de-skilling ward-based nurses, as specialist roles develop to care for each patient problem. Luke & Caress contend, however, that even if such skills were acquirable, it is doubtful that they could be used effectively as part of nurses' everyday work.

Noble (1991) suggests the use of nurses highly skilled in patient education to teach practising nurses how to assess both the needs of their patients and the effectiveness of the educational programmes. This suggestion is supported by Bartlett's (1995) observation that where patient education programmes have proved effective in terms of cost-effectiveness, they have been led by experts in education. What is clear from our

study is that nurses may not have educational skills that can be used on a formal level within an educational framework. Even if they did, without organisational investment in developing preoperative patient education as a nursing intervention (deemed as significant *or* as important as) the medical tests and investigations patients undergo preoperatively, it appears they would not have the time, nor perhaps the motivation.

Though nurses seem to be engaging in preoperative education, this appears to be occurring informally, and without being informed by theoretical bases of teaching and learning and stress and coping. However, nurse-related factors in preoperative education do not arise in a vacuum, but rather are related to the wider organisational practices and culture. The nurse-related factors in the delivery of preoperative education that we have explored in data appear to be influenced by a limited understanding and definition of preoperative education at organisational and nursing level, which subsequently leads to a diversity of practices between nurses and across patients. This phenomenon is influenced by the multiple constructions of this aspect of care, the degree of knowledge and experience held by the nurse, the educational deficit experienced by nurses, and the availability of nurses in specialist roles.

We acknowledge that this study is based on a relatively small sample size at one particular hospital, and with such limited empirical scope, generalisations cannot be made beyond the study. Further research has the potential to provide a better picture of the status of 'regular' preoperative education at other clinical sites.

This is an era of health care in Ireland that is calling for quality of care, cost-effectiveness, and accountability from healthcare organisations and health-care professionals, though many tensions currently exist between investment in the services and meaningful measurable output. The literature surrounding preoperative education suggests that the aims cited above are achievable for this aspect of care through organisational investment in preoperative education. Such investment means clearly conceptualising preoperative education, and designing education programmes that are patient-centred and that can be evaluated in terms of effectiveness. The issue of

resources in terms of space, time and staff development for preoperative education would need to be considered, as would reflection on the appropriateness of who should be providing such education.

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