

## Patients' opinions of information given and postoperative problems experienced in conjunction with ambulatory surgery

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### Abstract

The aims were to obtain and describe ambulatory surgery patients' opinions about information provided before, during the day of surgery and prior to discharge from the post-anesthesia care unit (PACU) and to explore relationships between patients' opinions of information received and their experience of postoperative problems. Of 127 patients invited to complete a questionnaire, 110 returned this within 14 days. Five patients were excluded due to hospital admission. Most patients found the information satisfactory. Patients did not find the written information as adequate or as satisfactory as the oral. About a third of the patients found both types of information unsatisfactory. More patients who found the information unsatisfactory reported more postoperative problems than the others. The most common problems experienced at home were pain, sleeping disturbance and nausea. Copyright © 1996 Elsevier Science B.V.

*Keywords:* Ambulatory surgery; Preoperative information; Patients' experience; Day surgery

### 1. Introduction

Reasons for the increase in day-care surgery are multiple, including cost containment, the development and application of new technology and new shortacting anesthetics with fewer side effects [1]. However, not all patients are suitable subjects for day-surgery. Psychological, medical and nursing care factors exclude some patients. Patients who are unwilling or unable to follow pre- and postoperative instructions are not suitable for ambulatory surgery [1]. As most patients want to come to the post-anesthesia care unit (PACU) immediately before surgery and leave the unit as soon as possible afterwards [2], all the necessary communication, information and care has to be carried out during a limited period of time. It is often difficult to assess if the information and instructions provided are appropriate

to the patients' perceptions, to their needs in relation to the ambulatory procedure and to the postoperative recovery period at home. It is important to understand and evaluate patients' opinions about the information provided and to be aware of patients' reported postoperative problems.

Few studies have reflected patients' opinions of information provided in the preoperative phase, during their stay at the PACU and prior to discharge. Several authors [1,3,4] indicate that it is important to prepare ambulatory surgery patients for post-anesthetic and postoperative discomfort, and inform them that complications may occur both at the PACU and at home. Explanations of what to expect perioperatively, coupled with gentle reassurance, can decrease premedication requirements [1]. Payne et al. [5] have shown that preoperative anxiety is positively correlated with the level of pain following discharge home. Education may decrease patients' postoperative pain, nausea and anxiety and allow earlier discharge from hospital [6]. Pa-

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tients informed about postoperative discomfort were found to have greater tolerance for their situation and also experienced less anxiety [3,7]. Following Payne et al. [5] it is important to prevent preoperative anxiety and pain during the PACU stay. However, information given before elective minor surgery must be adjusted to patients' individual needs [8]. Kempe and Gelazis [9] found that information given by a nurse provided opportunities for patients to ask questions at the time of the decision for surgery, and that this, together with a presurgical telephone call by a nurse the day before surgery, were the most significant factors in reducing preoperative worries. Patients' pre-surgical visits to the surgical department may also provide opportunities for preoperative education. At this time patients can confer with the anesthesiologist, discuss postoperative pain management and meet with the PACU nurses to obtain information about the procedure and care needed. Elsass [10] showed that patients who had met a supportive anesthesia nurse the day before surgery who was to care for them in the preoperative room had fewer postoperative problems with shivering, dizziness and vomiting compared to those who did not receive this support.

Pain is one of the most common postoperative problems. It has been discussed by Dwyer and McGoldrick [1], White [4] and Gupta et al. [11]. Pain can be caused by the anaesthetic technique, not only the surgical procedure. Burden [12] claims that after dural puncture, headache resulting from spinal anesthesia may occur up to the 6th postoperative day. After wound infiltration with bupivacaine, more severe pain than usual may occur after discharge, and the nurse must inform the patient of these possibilities [3,4]. The PACU nurse must also give patients advice prior to discharge about managing postoperative pain treatment at home and must, therefore, have knowledge about the anesthetic and surgical techniques used. According to the Swedish Health Law [13], patients must be informed about possible side-effects of the different anesthetic and surgical techniques and, if possible, be able to choose the techniques to be used in consultation with the physician. The PACU nurse must inform patients about what to expect postoperatively together with possible postoperative problems, that might occur.

Rawal and Berggren [14] claim that it is not only information that is of importance for patients' experience of pain. It may depend on several factors such as patients' preoperative psychological and pharmacological preparation, the quality of nursing care at the PACU and the occurrence of postoperative complications. The relationship between pain and nausea has also been explored. Larsson [7] found that as many men as women experienced pain and nausea, but of those patients who had been vomiting, 28% felt worried and anxious during the first postoperative day. Andersson

and Krogh [15] found that the occurrence of nausea could be diminished if patients postoperative pain was treated in the hospital.

In addition to prevention [7,13,16,17] and treatment of postoperative problems, quality care in the PACU involves providing time for patients to ask questions and nurses and physicians to answer them. Establishing a trusting relationship, allowing communication between patients and nurses and physicians, and providing relevant and valuable information [2] can also be seen as important parts of the care process. This encounter enhances the relationship and informalizes the way information is given and its content, i.e., relevant and appropriate 'facts' which aim to facilitate the patient to undergo the procedure with the minimum of discomfort. Information may include the care of dressings, suture lines, the surgical wound, limitations of activity, personal hygiene, diet, lethargy and tiredness [12]. This information can be provided both by oral and written means. Preferably it should be given prior to surgery. Sarvimäki [18] found that 58% of patients wanted written information about their condition and how they should continue treatment at home. An example of written information and instructions about postoperative self-care at home has been presented by Kang et al. [19].

### *1.1. Aims and questions*

The aim of the study was to obtain and describe patients' opinions about information provided preoperatively, during and after the ambulatory surgery procedure. These patients had undergone arthroscopy, inguinal herniorrhaphy, varicose vein surgery or hallux valgus correction. Another aim was to explore relationships between these opinions and problems experienced during the PACU stay and after discharge.

The following questions were asked:- Do patients find the pre- and postoperative information provided, both written and given verbally, sufficient and satisfactory?- Are any differences apparent between males and females with the surgical procedure or the anesthetic technique?- Is there any relationship between patients' opinions, the information provided and their experience during the whole procedure?

## **2. Patients and methods**

### *2.1. Patients*

In total, 127 patients scheduled for elective varicose vein surgery, hallux valgus correction, inguinal herniorrhaphy or arthroscopic knee surgery in the ambulatory setting were consecutively invited to participate in the study. These groups of patients were chosen because

Table 1

Mean age, standard deviation (S.D.), gender, anesthetic techniques (general, spinal, intravenous regional (IVRA) and local) used for patients who had undergone varicose vein surgery, hallux valgus correction, inguinal herniorrhaphy and arthroscopic knee surgery ( $n = 105$ )

Surgical procedure. $n$ , mean age in years (S.D.)	Male/female ( $n$ )	General anesthesia ( $n$ )	Spinal anesthesia ( $n$ )	IVRA ( $n$ )	Local anesthesia ( $n$ )
Varicose vein, $n = 25$ , 48 (11.39)	10/15	7	18	0	0
Hallux valgus, $n = 25$ , 53 (10.95)	1/24	2	2	20	1
Inguinal herniorrhaphy, $n = 27$ , 54 (12.54)	24/3	10	17	0	0
Arthroscopy, $n = 28$ , 40 (12.62)	19/9	24	4	0	0
Total, $n = 105$ , 49 (13.02)	54/51	43	41	20	1

these surgical procedures are common and involve the potential risk of postoperative complications such as bleeding and pain. Instructions to these patients about allowed and forbidden activities in the recovery period are of importance for a satisfactory outcome. Additional inclusion criteria were that the patients were able to understand Swedish and were 18 years of age or older. Of the 127 patients, 110 (87%) completed and returned the questionnaire within 14 days. Five of these 110 (5%), were admitted to the hospital and were excluded from the study. A total of 105 patients were included in the study. Demographic data is shown in Table 1. More females ( $n = 15$ ) than males ( $n = 10$ ) were operated on for varicose veins and hallux valgus (24 and 1 respectively) and more males ( $n = 24$ ) than females ( $n = 3$ ) had undergone inguinal herniorrhaphy and arthroscopic knee surgery (19 and 9 respectively). More males reported being offered a choice of anesthetic technique than females (42 and 29 respectively;  $P < 0.01$ ). Almost all patients ( $n = 101$ ) received premedication with benzodiazepines. Almost as many patients received general as spinal anesthesia (Table 1). Patients undergoing hallux valgus correction were usually offered intravenous regional anesthesia (IVRA, also called Bier block) in the foot.

## 2.2. Setting and questionnaire

The study was carried out at the County Hospital, Ryhov in Jönköping, Sweden. This is a general hospital with 300 beds, covering a geographical area with about 200 000 inhabitants. The data was collected during a 7-month period in 1994.

A questionnaire, consisting of 47 questions was designed by the authors. The questionnaire and the validation have previously been described [20]. This article only reports the results of 11 of these questions. The following themes were explored: The patients' experiences of received oral and written information before the ambulatory surgery, during the procedure and prior to discharge from the PACU. Patients' experienced postoperative problems are also reported. One of these 11 questions concerned postoperative discomfort experienced in the PACU.

The alternatives given in this question were pain, nausea, dizziness, headache, difficulties in urinating and other discomfort, which the patients could describe in their own words. Another question concerned postoperative problems experienced at home. The following alternatives offered were pain, nausea, difficulties in sleeping or urinating, worry or anxiety, problems with dressings, bleeding and wound infection. Two main questions of the 11, asked if the patients found the written and verbal information sufficient or not. Questions about the information provided concerned pain relief drugs, permitted and prohibited postoperative activities, personal hygiene, how to care for the wound and dressings. At the end of these two questions it was asked if patients lacked any information and if so, what did this concern. Information about awareness of where to turn to if postoperative complications arose or further questions arose needing a response was also asked about. Finally six questions concerned information received from both the physicians and the nurses, prior to the ambulatory procedure, during the operation day at the PACU and before discharge. As patients participating in the pilot study stated that the quality of the information received from the nurses and the physicians was different, they are presented separately. Finally, one question was open-ended, where the patients were encouraged to freely express their opinions and experiences of the ambulatory surgery procedure. This method is supported by Fallo [21].

The study was approved by the Ethical Committee, University Hospital in Linköping.

## 2.3. Procedures

Oral and written information about the study was given to the patients upon arrival in the waiting room at the surgical department by one of the investigators.

No patients were premedicated before this information was given. The questionnaire was first given to the patients just before their discharge from the PACU.

Each patients' final decision about participation in the study was made at home. If they decided to participate, they answered the questionnaire and sent it to the hospital. From an ethical point of view it was impor-

Table 2

Males and females' opinions concerning verbal information provided at the PACU prior to discharge ( $n = 105$ )

Sufficient verbal information about:	Males, $n = 54$ , $n$ (%)	Females, $n = 51$ , $n$ (%)	Total, $n = 105$ , $n$ (%)
The surgical wound	45 (83)	48 (94)	93 (89)
Pain relief drugs	50 (93)	48 (94)	98 (93)
Activities	45 (83)	40 (78)	85 (81)
Personal hygiene	44 (82)	41 (80)	85 (81)

tant that the patients were unaffected by any medication and that they did not feel forced to participate.

During the study period the preoperative information was verbally provided by the physician and the nurse. The nurse provided information about the procedure, about postoperative problems, the fact that patients are not allowed to eat or drink before the anesthesia and surgery and about preoperative personal hygiene. The nurse also provided written information. On the day of surgery the patients were offered premedication and the nurse again informed them about the procedures. Sometimes the physician also gave information, but this varied depending on the circumstances. Patients were given information, adjusted to their condition, postoperatively and during their stay at the PACU. Before discharge the PACU nurse provided information about pain relief drugs, how to take care of the wound, allowed and forbidden postoperative activities during the recovery period, personal hygiene and where to call if problems, complications or questions occurred. Written material reinforced the same information.

A limitation of this study is that there is no real control of how the information was given, i.e., if there was a dialogue between the physician, the nurse and the patient or if the information given was adapted to the patients needs. The content of the information should include the above described subjects but there may have been some occasions where not all of the information was given.

#### 2.4. Data analysis

Descriptive statistical methods such as mean and standard deviation were used. Mann-Whitney-Wilcoxon  $U$ -rank sum test, Fisher's exact test and Pearson's  $\chi^2$ -test was used when analysing data. Pearson's correlation coefficient was used when exploring the relationship between variables.

### 3. Results

A majority of the patients reported that they had received sufficient information from nurses, prior to the ambulatory surgery procedure (96%), during the surgery day at the PACU (96%) and prior to discharge

(95%). Eighty-six percent of the patients reported sufficient preoperative information provided by the physicians. During the day of surgery, 81% reported they had received sufficient information, and prior to discharge 64%. In total, 67 patients reported that they received sufficient information, both from nurses and physicians, and 38 stated that they thought the information provided was insufficient. Seventeen patients did not answer questions concerning the information given by the physicians just before discharge. Three patients did not answer the same question concerning information given by the nurses.

Patients were asked if they were provided with sufficient verbal and written information. As can be seen in Table 2, a majority of the patients reported that they received sufficient verbal information at the PACU prior to discharge. Compared to verbal information received, the written information was not reported to be sufficient to the same extent (Table 3). However, most patients found the written information sufficient. Between 66 and 72% of the patients reported that they received sufficient written information about how to care for the operative wound, use of analgesics at home, permitted and prohibited activities and personal hygiene. Ninety-one patients (87%) reported that they received sufficient verbal information about where to seek help if complications and problems occurred. Questions concerning verbal and written information also provided the patients the opportunity to comment on their answers. One patient commented that written information is better as it is difficult to understand and remember verbal information. Some patients also wanted information about how much housework they could do and where to find help if the dressing is filled with blood.

#### 3.1. Problems experienced

The most common problems patients experienced at home were pain (42%), sleeping problems (15%) and nausea (11%). Nine patients reported problems with the wound and dressings and three reported anxiety. No patients reported postoperative difficulties in urinating when home. Two operated on for hallux valgus reported bleeding from the surgical wound.

Table 3

Males and females' opinions concerning written information provided at the PACU prior to discharge ( $n = 105$ )

Sufficient written information about:	Males, $n = 54$ $n$ (%)	Females, $n = 51$ $n$ (%)	Total, $n = 105$ , $n$ (%)
The surgical wound	34 (63)	39 (77)	73 (70)
Pain relief drugs	36 (67)	40 (78)	76 (72)
Activities	34 (63)	35 (69)	69 (66)
Personal hygiene	36 (67)	35 (69)	71 (68)

Fifty patients (22 males and 28 females) experienced pain during their stay at the PACU and 46 experienced pain at home. Significantly more females (58%) experienced pain at home than males (32%;  $P < 0.01$ ). More patients experienced nausea at home ( $n = 12$ ) than at the PACU ( $n = 9$ ). By using Fisher's exact test (two-tailed), it was found that significantly more patients who experienced pain at home also experienced nausea (20%) compared to those who did not report pain (5%;  $P < 0.05$ ).

### 3.2. Relationship between opinions about information received and problems experienced

More patients who had expressed that the preoperative information given by physicians was unsatisfactory reported dizziness (5 of 14; 36%) at the PACU and problems in sleeping at home (5 of 13; 39%) compared to patients who found the information satisfactory (11 of 87; 13%; 10 of 88; 11%;  $P < 0.05$  respectively  $P < 0.02$ ). During the operation day more patients who had found the information given by nurses unsatisfactory reported pain, (100%) problems in sleeping (50%) and worries at home (50%;  $P < 0.05$  and  $P < 0.01$ ) than those who found the information satisfactory (41 of 98; 42%; 13% respectively 1 of 98). Patients dissatisfied with the information given by nurses prior to discharge were subject to a higher level of experienced pain (5 of 5  $P < 0.02$ ) and anxiety at home (2 of 5;  $P < 0.001$ ) than others (39 of 95; 41% respectively 1 of 94).

A positive correlation was found between patients opinions concerning the information received from the nurses during the day of operation at the PACU and information given about self-care before discharge (0.8898;  $P < 0.001$ ). A less positive relationship between preoperative information and information given by the nurses during the operation day at the PACU was also found (0.4800  $P < 0.001$ ). A moderate relationship was also found concerning the patients opinions of the information provided by physicians. Information received on the day of surgery at PACU and the patients opinions about information given prior to discharge was correlated (0.5776;  $P < 0.001$ ).

The last question in the questionnaire offered the patients an opportunity to freely express opinions about the whole ambulatory surgery experience. One

patient commented that the physician gave information when the patient was not quite awake and therefore could not remember what he had said. The nurse later repeated the information. Patients also complained that the physician did not inform them before surgery about what to expect during the first postoperative week and how to prepare for resuming normal functions. After his herniorrhaphy, one patient claimed that the information was not satisfactory as he did not realize how the operation would affect him (he mentioned that he slept for over 36 h upon his return home, which he had not anticipated). Other patients found the information satisfactory, felt that they had their 'own' staff and that they continuously received information during the whole procedure. Some patients who received a Bier block found it beneficial to be able to talk to the physicians and nurses during the operation. Several patients found it very unsatisfactory not to have been given any opportunity to meet and receive information and question the surgeon before the operation, during the stay in the PACU and before discharge. Patients also wanted to discuss with the surgeon the results of the operation and receive assurance that everything was alright and no complications had occurred.

## 4. Discussion

The questionnaire included mainly close-ended questions but with some opportunities for patients' comments. At the end of the questionnaire the patients were encouraged to express their opinions about the whole ambulatory surgery experience. It has been shown that patients experience difficulty in expressing negative criticism about the care they receive [18] at the time the treatment and care is being given. If the patients' expected results of the operation are fulfilled, satisfaction with the care and the procedure probably will be more positive [22]. The time the patients stay at the surgical unit is very short and may contribute to this inability to comment on possible disadvantages.

The questionnaire was delivered to the patients just before discharge from the PACU, which enabled the patients to choose if they wanted to participate and, if so, to complete the questionnaire within 14 days at home. Most follow-up studies [21,23] are carried out

within 24 h after discharge, but this study made it possible for the patients to make a long-term evaluation. Some patients returned the questionnaire within a few days and others at the end of the 14-day period. After 2 weeks, recollection and memory of discomfort, experiences and received information may well have deteriorated. Findings by Larsson [7] showed that patients expressed amnesia of the perioperative course. Philips [24] claimed that some anaesthetic drugs can cause patients to forget having seen the surgeon on the day of surgery and forget being given postoperative information. Seventeen patients in this study did not answer questions about information received from the physicians. The reason for this incomplete data may be amnesia caused by the anaesthetic agents, but also reluctance to express criticism in case further problems might occur during the recovery period.

Most patients who had undergone ambulatory surgery found the information sufficient. The relationships found between patients' opinions about the information given on the day of surgery at the PACU and prior to discharge imply that relevant and useful information can create a trusting relationship, based on good communication [2,3]. This shows that satisfactory information was provided, first of all by the nurse but also that the patient felt free to ask questions. This may also mean that if patients feel that information is insufficient during one stage of the ambulatory procedure then there is a risk that this will reflect on the whole of the procedure and they will find any further and complementary information 'insufficient'. Therefore, it is of great importance to ensure satisfactory information and the establishment of a trusting relationship as soon as possible in the ambulatory procedure.

In this study it was found that patients who felt dissatisfied with preoperative information, information given on the day of surgery and prior to discharge also experienced increased problems such as dizziness, sleeping problems, anxiety and pain either at the PACU or at home. In accordance with the findings of Payne et al. [5] these patients may have experienced preoperative anxiety and the information given was not appropriate to their needs and, therefore, their anxiety and worries were not dealt with. In these cases it is perhaps more important to initially establish a trusting relationship, encourage the patient to express their worries and ask about these, to talk about their needs and expectations and then provide the information required.

Verbal information about pain relief drugs may reflect the nurses' ambition to lessen patients' pain at home, as pain can lead to anxiety and nausea as claimed by Larsson [7], and lead to patients' contact with or admittance to hospital. Written information was reported not to have been as sufficient as verbal. This may be explained by the lack of adequate informa-

tion, or that nurses may have neglected to give it to the patients or that verbal information presented to patients and to relatives or spouses is deemed to be sufficient. However, patients may have received written information but left it at the PACU upon discharge, or may have brought it home but not read it, or found it difficult to understand. In spite of this few patients mentioned that practical information about the type of housework allowed and wound dressing care is needed. Written information is also important as amnesia may occur [7,24] as was claimed by some patients.

Sixteen patients reported sleeping problems at home, but it is unclear if the patients have slept too much as one patient commented, or have had difficulties in sleeping or both in different periods within the 14 days. Burden [12] states that patients on the operation day may feel tiredness and sleepy because of the effects of sedatives. More patients who had pain at home also experienced nausea, which is in agreement with Larsson's [7] findings. It is therefore important to explain to patients that pain prevention diminishes the risk of nausea. It is also important to inform patients about the different pain relief drugs and recommended dosages. More women reported pain at home than men, which could be linked to insufficient information about permitted activities including housework, having no adequate pain relief or no time for resting or having returned to work too early. But it could also depend on the fact that 24 women were operated on for hallux valgus, which may cause more postoperative pain than the other procedures.

Sufficient information given about self and home care and what can be regarded as normal and unusual in the postoperative phase could preclude patients anxiety about returning to hospital or worrying when experiencing discomfort.

## 5. Conclusion

A majority of the patients found the information preoperatively, during the day of surgery and prior to discharge satisfactory. The verbal information was found more adequate than the written. However, about one third of the patients reported that they did not find the total information in conjunction with ambulatory surgery sufficient. The physicians received more criticism than the nurses who were preferred in patients' comments. Patients who perceived the preoperative information as unsatisfactory also seem to find any subsequent information given as unsatisfactory and vice versa, i.e., information experienced as satisfactory information means that further information will also be experienced as satisfactory. Pain, sleeping problems and nausea were the most common problems experienced by patients at home.

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