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Title	Day surgery and general anaesthesia : what makes patients anxious?
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Type	Article
URL	This version is available at: http://usir.salford.ac.uk/id/eprint/9735/
Published Date	2010

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Day surgery and general anaesthesia: What makes patients anxious?

Abstract

For many patients the prospective of undergoing surgery and general anaesthesia is highly anxiety provoking. With the global rise in day surgery and limited nurse/ patient contact, anxiety has become a prominent issue. The aim of the study was to establish the degree of anxiety arising from elective day surgery and general anaesthesia and uncover specific anxiety provoking aspects. Day surgery patients (n=460) completed a questionnaire during recovery at home and return it by post. The majority of patients (85%) were anxious on the day of surgery and 50% desired a detailed level of information. Anaesthetic information provision, catastrophising and imminence of surgery were deemed to be reliable predictors of anxiety. The planned provision of anaesthetic information in advance of the day of surgery, emphasising 'controlled unconsciousness', provision of information to help limit catastrophising thoughts and assistance to reduce the impact of 'waiting' are recommended for the effective management of anxiety.

Keywords

Day surgery, general anaesthesia, anxiety, information provision and waiting.

Introduction

The purpose of the study was to investigate adult patient anxiety prior to elective, day surgery and general anaesthesia. This was considered necessary as little formal care for the anxious patient is currently provided in the elective day surgery setting ^[1, 2]. Indeed, the structured teaching of formal pre-operative anxiety care in nurse education in the United Kingdom is very limited ^[3, 4]. However, anxiety is a prominent issue prior to day surgery and general anaesthesia ^[5, 6], and with the predicted transfer of an increasing volume of elective surgery to day or 23 hour stay surgery in the coming years ^[7] the number experiencing pre-operative anxiety in day surgery units is likely to grow.

Literature Review

The volume and range of elective surgery now possible in day surgery facilities is growing and this rise is reflective of the global trend ^[8, 9]. Additionally, modern surgical techniques have made post-operative recovery quick with discharge home is achieved in a few short hours ^[10]. Moreover, such surgery is not minor 'lumps and bumps' but extensive surgery ^[11]. As the surgical assault on the body has diminished, the need for many once traditional physical aspects of surgical nursing care has faded ^[12]. Surgeons have fundamentally changed the way in which they practice and the once prominent features of post-operative nursing care are in rapid decline. "Surgery is now radically different from in 1948 or 1980, so it follows that surgery should not be provided in the same way as in 1948 or 1980." ^[13 p. 7]. The nursing profession must therefore carefully re-evaluate its place and role in this new era of surgical development.

Redundant tasks once central to post-operative surgical nursing have left a void, partially being filled by the adoption of quasi-medical tasks ^[14, 15]. However, in a review of the literature by Pearson et al. ^[16] it was concluded that no high quality evidence about the effectiveness of a nurse in the role of a surgical assistant existed. Indeed, the adoption of many medical tasks may have arisen in this manner, that is, as a result of political or financial pressures and not necessarily based upon nursing evidence ^[17, 18]. However, anxiety management in elective day surgery is a considerable nursing issue and much evidence is available to help inform practice ^[19-23].

Jakobsson et al. ^[24] suggested general anaesthesia to be the most prominent source of anxiety for patients prior to surgery. The use of 'needles' during induction ^[25] or a mask being placed over the face ^[26] lead to much anxiety. Gilmartin and Wright ^[1] interviewed 20 patients following day surgery and discovered that many had been anxious about waking up during their surgery or not waking afterwards. Hadjistavropoulos et al. ^[27] and Lee and Gin ^[28] recommend pre-operative education to ensure readiness for anaesthesia, educate about the method of induction of anaesthesia, reduce anxiety and explain post-operative care. Lack et al. ^[29] advocate general anaesthesia to be described not merely as being 'put to sleep' but as 'carefully controlled and supervised unconsciousness' allowing surgery to be performed painlessly. Van den Berg ^[30] interviewed 240 patients undergoing day surgery and statistically significantly more adults preferred inhalation induced anaesthesia to intravenous induction. Mitchell ^[22, 31] also established many patients undergoing regional and local anaesthesia were anxious with regard to being awake in theatre. A dental surgery study by Osborn & Sandler ^[32], demonstrated patients with raised anxiety required an increased amount of sedation to induce

and maintain a clinically acceptable level of sedation and were also more prone to intra-operative movements.

Patient anxiety prior to general anaesthesia is therefore of great concern to both patients and clinicians. As day and short stay surgery are now the main methods of elective surgical treatment throughout the World ^[9], it would be of great benefit when communicating with patients throughout the peri-operative period to have a clearer understanding of anxiety and knowledge of effective interventions.

A i m

To establish the degree of anxiety arising from elective day surgery and general anaesthesia and uncover specific anxiety provoking aspects.

M e t h o d

A questionnaire was constructed and used in a larger study examining the wider issues of anxiety associated with the clinical environment, hospital personnel and general and local/regional anaesthesia (n=673) ^[31]. **JAN GA** However, this paper will only consider the questions relating to the anxiety provoking aspects of general anaesthesia associated with the clinical environment (Table 1). Anxiety prior to local/ regional anaesthesia has been reported elsewhere ^[22, 31]. The questionnaire was compiled using evidence gained from the literature and previously undertaken research in this field ^[4, 33, 34]. A pilot study was undertaken utilising the first 10% of respondents. This resulted in minor amendments prior to continuation of data collection. All items on the questionnaire were structured using a Likert Scale type format, for example, very anxious, a little anxious, made no difference, a little calm, very calm or never thought about it.

Data were collected from three public Day Surgery Units over a two-year period (2005 - 2007). All medical and nursing staff gave consent to the study prior to local Ethics Committee approval. A convenience sample of patients meeting the inclusion criteria (non life-threatening, intermediate surgery, no history of chronic physical or mental health, English speaking, 18 years upwards and not undergoing ophthalmic or dental surgery) were invited to participate. Ophthalmic and dental patients were excluded as they were deemed to experience additional anxieties resulting from the type of surgery, for example, loss of vision or possible alteration in physical appearance. Staff in each Day Surgery Unit invited patients on the day of surgery to take home the questionnaire. Questionnaires were completed at home 24 - 48 hours after surgery and return by mail in the pre-paid envelope provided.

R e s u l t s

Four hundred and sixty patients undergoing surgery and general anaesthesia took part. A variety of surgical procedures were undertaken with Gynaecological Surgery (25%), General Surgery (23%) and Orthopaedic Surgery being the most frequent. Participants' ages ranged from 18 years to 75 years with the average age being 46 years (271 females and 189 males). The number of patients experiencing anxiety on the day of surgery was 85% (Graph 1). The majority desired information about their planned surgery 1 - 4 weeks in advance (Graph 2) and 50% wished to receive a detailed level of information (Graph 3). Moreover, anxiety was largely generated by waiting on the day of surgery for the operation to commence and contemplating general anaesthesia (Graph 4).

A further examination of the data was undertaken using factor analysis. Exploratory factor analysis seeks to summarise all data uncovered (Table 1) and reduce findings into smaller

coherent groupings. Three groupings or factors were established from the identified questions (Table 1) and named 'Pre-operative Anaesthetic Information', 'Anaesthetic Catastrophising' and 'Imminence of Surgery'. Questions relating to anaesthetic information provision prior to surgery were given the title of Pre-operative Anaesthetic Information (Table 2) as during factor analysis all such aspects were positively related. Likewise, questions relating to potentially extreme events occurring whilst anaesthetised were given the overall title of Anaesthetic Catastrophising (Table 3). Finally, items relating to the impending start of surgery were given the title of Imminence of Surgery (Table 4).

These three new variables named Pre-operative Anaesthetic Information, Anaesthetic Catastrophising and Imminence of Surgery were entered into a multiple regression analysis. Multiple regression was employed to help determine if an overall level of anxiety can be predicted by the three new variables created during factor analysis (pre-operative anaesthetic information, anaesthetic catastrophising and imminence of surgery). This indeed was the case and Pre-operative Anaesthetic Information, Anaesthetic Catastrophising and Imminence of Surgery were deemed to be reliable predictors of increased anxiety on the day of surgery ^[23]. It can therefore be reliably stated that increased anxiety prior to day surgery and general anaesthesia can be predicted by Pre-operative Anaesthetic Information, Anaesthetic Catastrophising and Imminence of Surgery' (Tables 2, 3 & 4). Moreover, of the three, Imminence of Surgery evoked the most anxiety, that is, most apprehension arose from waiting for surgery to begin.

Discussion

First, a number of limitations may have influenced the results. Data collection was undertaken using a questionnaire that had not been previously employed. Therefore, questions could have been included which participants did not find relevant and other more relevant questions excluded. Participants may not therefore have been able to provide all the views they wished. However, the questionnaire was rigorously constructed from the available literature and previous research ^[35]. Second, only 41% of participants responded which could have limited the information obtained. Some patients may have wanted to contribute but during the first week may have been too poorly to complete the questionnaire. This is unfortunate but the reason why a larger sample was pursued.

The aim of the study was to establish the degree of anxiety arising from elective day surgery and general anaesthesia and uncover specific anxiety provoking aspects. Anxiety was expressed by 85% of patients (Graph 1). Such a high number alone may demonstrate the need for more effective, formal anxiety management prior to the day of surgery. Other researchers have also suggested anxiety to be a considerable issue in modern surgery ^[31, 36]. Anxiety arose from three distinct areas referred to here as Pre-operative Anaesthetic Information (Table 2), Anaesthetic Catastrophising (Table 3) and Imminence of Surgery (Table 4). All themes were derived from a combination of exploratory factor analysis and multiple regression. The results suggest anxiety about the gaining of sufficient anaesthetic information, erroneous beliefs concerning general anaesthesia and apprehension regarding the immediacy of surgery can reliably predict overall anxiety on the day of surgery.

Pre-operative Anaesthetic Information

Information provision has historically been viewed as fundamental to effective management of anxiety^[37]. In total, 87% patients desired to receive information between 1 - 4 weeks in advance of their surgery (Graph 2) and 50% required a detailed level of information (Graph 3). Anxiety may therefore have arisen from a real or perceived lack of information about surgery and/ or anaesthesia. Such findings appear to support previous evidence linking anxiety to a lack of sufficient information and a possible lack of a systematic approach to its delivery^[20, 38].

Much research has helped to extinguish the myth that patients are made more anxious if provided with additional information^[28, 39, 40]. Gilmartin^[41] interviewed 30 day surgery patients and concluded a large amount of patient information provision was required prior to surgery. In addition, a survey of 92 Swedish anaesthetists recommended mental preparation of patients and relatives (information, what to expect, emphasizing safety) should take place some days before surgery^[42]. The Royal College of Anaesthetists^[29] suggest when a patient agrees to surgery it is normally on the basis of information received from the surgeon about the intended surgical procedure. "Since the surgeon may not offer information about the anaesthetic technique, nor about the risks of anaesthesia, the patient generally agrees in principle to a procedure knowing very little about the anaesthetic that will be involved." (Lack et al. p. 15). Indeed, the patient may not even meet the anaesthetist until minutes before surgery when the conversation may focus (by necessity) on the biomedical issues with little psycho-social discussion^[43]. In such instances post-operative information regarding minimising nausea and vomiting (avoiding sitting up too quickly or drinking and eating immediately following surgery, taking slow deep breathes to reduce the sensation) may not be transferred to the patient^[44].

In a qualitative study^[45], it was further suggested information provision for home recovery was insufficient. Limited information once home was also highlighted in a review of the literature by Mitchell^[46]. Watt-Watson et al.^[47] reported 45% of patients did not receive sufficient information about their discharge medication. Following a survey of 116 day surgery patients, Bernier et al.^[48] provided an excellent pre-operative teaching guide which included 26 questions to be asked which covers most areas of patient concern. Finally, media-based interventions (video and written information) have proven effective in improving knowledge and reducing anxiety^[49].

Anaesthetic Catastrophising

Patients have been concerned about general anaesthesia for many decades^[50, 51] and with good reason. "Anaesthesia is an intrinsically hazardous undertaking with no inherent therapeutic benefit for the patient."^[52 p.1648] Kopp & Shafer^[53] state "During anesthesia the patient is controlled through interventions that reduce consciousness, eliminate language, alter memory, and limit autonomous actions." (p. 54). In the present study patients held many negative and unfounded beliefs about anaesthesia such as dying whilst anaesthetised, not being able to wake-up and waking during surgery. Anaesthetic catastrophising has been defined as a tendency to focus upon, and exaggerate, the negative aspects of anaesthesia, and the tendency to feel overwhelmed and unable to cope with or control the situation^[54].

Other researchers examining patient experience of anaesthesia have found similar results^[55]. Matthey et al^[56] revealed 47% of patients were very concerned with death, 45% with brain damage and 40% with intra-operative awareness. Fekrat et al^[57] surveyed 67 patients and 26

paired anaesthetists/ surgeons and concluded patient's major concerns were 'whether surgery would work', 'the body being damaged by surgery' and 'dying during anaesthesia'. Payne et al.^[58] conducted a study to determine patient preference for induction of anaesthesia, that is, induction via a mask or intravenously. Statistically significantly more patients preferred intravenous induction of anaesthesia as many did not like to have a mask over the face. Crockett et al.^[59] constructed a questionnaire to determine patient anxiety prior to anaesthesia. The questionnaire had 6 main themes - pre-occupation with morbid thoughts, outcome concerns, unconsciousness, loss of control, dependence on others and pain/ discomfort. Such catastrophising thoughts may therefore be quite common amongst patients awaiting general anaesthesia and again possibly reflect the limited level of knowledge.

Imminence of Surgery

Data from the present study indicated 59% of patients were anxious as a result of the wait prior to surgery (Graph 4). Such anxiety may have been exacerbated as 41% were also anxious about the anaesthetic and 31% by the 'thought of the unknown'. Indeed, this was evident in the 'imminence of surgery' grouping as this generated the most anxiety of the three themes. In support of such findings a review of the literature by Pearson et al.^[60] revealed waiting for surgery to commence also lead to greater anxiety. Freeman & Denham^[61] suggested waiting not only increased anxiety but reduced the quality of the day surgery patients' experience. In a qualitative study by Markovic et al.^[62] anxiety was again a common theme and associated with waiting, lack of a supportive relative, lack of information and having to walk to theatre. Carr et al.^[63] suggested the greatest level of anxiety occurred immediately prior to anaesthesia for 67% of in-patients. Khan & Bhutiani^[64] stated patients normally attend the hospital three times and waited an average of 41 - 53 weeks for day-case herniorraphy. A 'Walk-in-walk-out' (WIWO) clinic was therefore implemented which helped to limited anxiety, improve efficiency and reduce costs. "The patients in the WIWO clinic have their consultation and operation in one single visit and leave the hospital 2 - 3 hours after the operation."^[64 p. 2] To avoid waiting, patient inconvenience and increased anxiety a number of researchers have further recommended adoption of such 'one-stop' surgical practices^[65-68].

C o n c l u s i o n

Surgical practices have changed immeasurably throughout the World during the last two decades. The majority of elective surgery patients experience complex surgery and general anaesthesia on a day-case basis. As a result of such brief hospital stay the time available in which to develop the nurse/ patient relationship has become very restricted. However, an effective nurse/ patient relationship is vital in the management of patient anxiety, irrespective of how brief^[69]. Adequate information provision, reducing erroneous beliefs about anaesthesia and easing the time spent waiting are fundamental for effective anxiety management. Modern surgical nursing practices must strive to acknowledge such evidence by i) encouraging the wider teaching of such care in pre-registration programmes of study, ii) seeking to adopt such formal care in the clinical setting, and iii) by undertaking further studies to investigate this growing area of important patient care.

Implication for Practice

Information provided 1 - 4 weeks in advance of surgery for majority of patients.

Detailed level of information for majority of patients.

Both surgical and anaesthetic information provision.

Planned approach to information provision (formally documented).

Erroneous and unhelpful thoughts regarding anaesthesia explored in advance.

Emphasis upon "carefully controlled and supervised unconsciousness".

Emphasis upon close physical presence of the anaesthetist and nurse during surgery.

Close physical support, hand-holding and words of encouragement prior to induction

Simple methods of distraction, where appropriate

Attention to a 'patient friendly' ward and anaesthetic room environment.

Support from relative/ friend (where possible).

Increase in 'one-stop' practices.

TABLE 1
PRE-OPERATIVE APPREHENSION.

Pre-operative Apprehension
1) How would a nurse explaining your anaesthetic on the ward before going to theatre affect anxiety?
2) How would a visit from your anaesthetist before going to theatre affect your anxiety?
3) How would your anaesthetist explaining your anaesthetic before going to theatre affect anxiety?
4) How would your partner/ friend being with you in theatre before you are put to sleep affect your anxiety?
5) How would being told how long your anaesthetic will last affect your anxiety?
6) How would being told how soon you will be able to eat and drink again affect your anxiety?
7) How would always being told what was to happen next affect your anxiety?
8) How did waiting for your turn to go to theatre affect your anxiety?
9) How did having or the thought of having an injection affect your anxiety?
10) How did the thought of possibly needing a drip (intravenous infusion) affect your anxiety?
11) How did the thought of possibly removing any false item e.g. dentures or wig, affect your anxiety?
12) How did the thought of possibly needing an anaesthetic mask over your face affect your anxiety?
13) How did the thought of losing all control over your thoughts and movements affect your anxiety?
14) How did the thought of possibly waking up during your operation affect your anxiety?
15) How did the thought of having to trust strangers with your life affect your anxiety?
16) How did the thought of possibly dying while sleeping affect your anxiety?
17) How did the thought of possibly not waking up afterwards affect your anxiety?
18) How did having to walk to theatre affect your anxiety?
19) How did arriving at the theatre door affect your anxiety?
20) How did seeing medical equipment in the theatre room affect your anxiety?
21) How would the anaesthetist explaining things to you again in theatre before you are put to sleep affect your anxiety?
22) How would the nurse explaining things to you again in theatre affect your anxiety?
23) How would holding the hand of a nurse in theatre affect your anxiety?
24) How would your partner/ friend being with you in the recovery room very soon after waking up affect your anxiety?

TABLE 2
PRE-OPERATIVE ANAESTHETIC INFORMATION.

Pre-operative Anaesthetic Information
Nurse explaining the anaesthetic
Anaesthetist visiting
Anaesthetist explaining the anaesthetic
Informed how long anaesthetic will last
Informed where you can eat and drink
Informed what will happen next

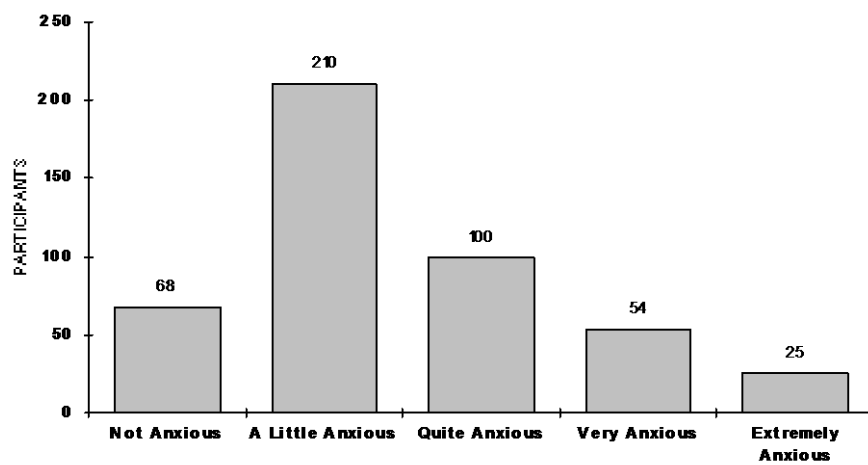
TABLE 3
ANAESTHETIC CATASTROPHISING.

Anaesthetic Catastrophising
Thought of anaesthetic mask over the face
Thought of losing all control
Thought of waking up during surgery
Thought of having to trust strangers
Thought of dying while sleeping
Thought of not waking up afterwards

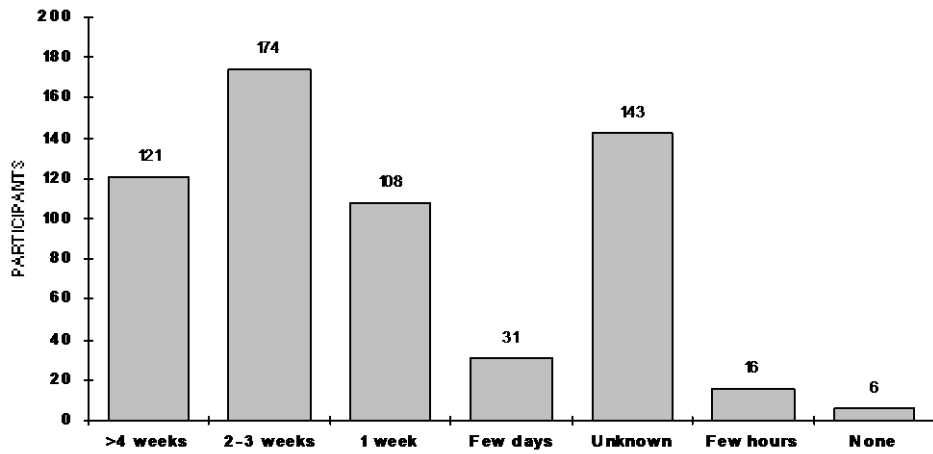
TABLE 4
IMMINENCE OF SURGERY.

Imminence of Surgery
Waiting your turn for surgery to commence
Removing false items
Arriving at the theatre door

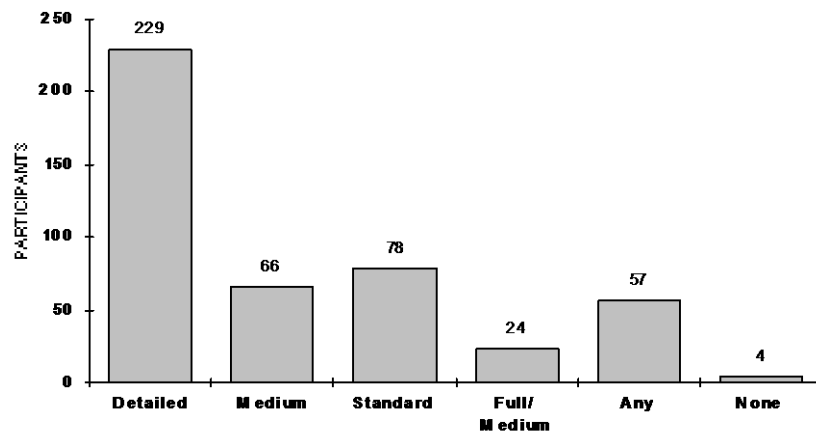
GRAPH 1.
PATIENT RATINGS OF ANXIETY ON THE DAY OF SURGERY (n=460).



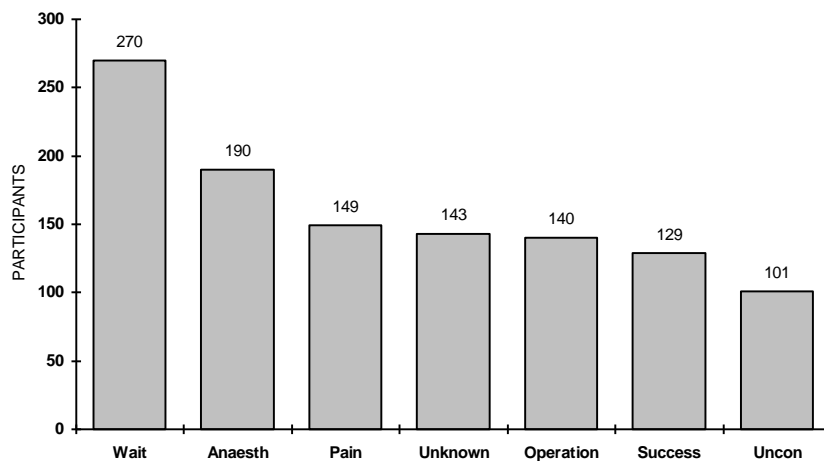
GRAPH 2.
PREFERRED TO RECEIVE INFORMATION (n=460).



GRAPH 3.
REQUIRED LEVEL OF PRE-OPERATIVE INFORMATION (n=460).



GRAPH 4.
MOST ANXIETY PROVOKING ASPECTS (n=460).



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