Nursing research into modern day surgery: a literature review

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Abstract

Aim: The aim of this review is to examine the present scope and direction of nursing research into day surgery in order to gain insight into possible future surgical nursing intervention in a rapidly changing healthcare environment.

Background: Elective surgical healthcare is changing rapidly. This process has witnessed modern surgical nursing being progressively replaced by devolved medical practices with little or no implementation of interventions based solely upon nursing evidence. Without nursing research into ambulatory surgery and the subsequent knowledge it can provide, such a bias towards the adoption of devolved medical practices will inevitably continue. A review of research activity undertaken by the nursing profession regarding day surgery was therefore required to aid the promotion and development of nursing based evidence in modern, elective surgery.

Method: Relevant literature was gained from topical bibliographic databases (MEDLINE, CINAHL, British Nursing Index and Archive, Applied Social Science Index, Cochrane Library and PsychInfo) and cross-referencing.

Findings: Forty research papers were examined from which two main themes emerged based upon the broad area of study and recommendations for clinical practice - physical experiences (pain and post-operative nausea and vomiting) and psycho-educational experiences (satisfaction, information provision, anxiety and recovery).

Conclusions: Based upon the nursing literature focusing specifically upon patient experiences of day surgery the direction in which modern, surgical nursing should progress may be centrally located with issues concerning the physical and psycho-educational experiences of modern surgery/ anaesthesia. Future nursing studies into modern day surgery should therefore strongly consider the relevant transitory physical care and continuing psycho-educational care. Transitory physical care as such aspects are commonly very brief and succinct whereas psycho-educational care more continuous and ideally spanning several days. However, the implementation and evaluation of such recommendations remains vital.

Keywords: Day surgery; Ambulatory surgery; Patient satisfaction/ anxiety/ information/assessment; Nursing intervention; Nursing care.

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Introduction

The amount of ambulatory surgery undertaken on a global basis is increasing and will continue to do so for many years.[1] Although day surgery was first undertaken in 1909 [2], it is only within the last two decades that it has developed so vigorously. In the United States of America and Canada the amount undertaken currently stands at 84% and 87% of all elective surgery, respectively, with the Scandinavian countries having the highest percentage in Europe.[3, 4]

A prominent feature for the nursing profession in this rapidly changing surgical environment is the continued adoption of devolved medical practices such as the pre-assessment nurse, anaesthetic nurse, nurse surgeon, laparoscopic nurse, etc.[5-10] Nursing knowledge, although available, is rarely formally employed and has therefore contributed very little to the success of day surgery.[11, 12] One possible explanation for the adoption of devolved medical practices is the decline in the physical nursing interventions once required by patients undergoing traditional surgery. With minimal access surgery (inherent in day surgery) the physical assault on the body is considerably reduced.[13] The need for the physical nursing care once associated with traditional surgery is therefore rapidly disappearing or at best becoming a minor part of the nursing picture, being largely replaced by transferable medical practices to help expedite the ambulatory surgery process. While the adoption of such tasks may be vital to ensure safe and efficient day surgery in the limited time available,[14-18] it detracts somewhat from the utilisation of nursing based evidence. To help fill this void and provide an alternative to the stream of transferable medical practices, robust, evidence-based nursing knowledge is required to provide modern day surgery nursing with new directions. Without such new evidence what knowledge will inform future surgical nursing?

If this trend continues the nursing profession may be destined to follow in the wake of medical advances alone, accumulating devolved tasks and re-labelling them as surgical nursing intervention with little or no discrimination. This cannot therefore continue if nursing is to make a valued and lasting contribution to the future of modern surgery. Reliable research evidence, fit for the modern day surgery environment, is required to help demonstrate the contribution nursing can offer. Two recent literature reviews have been undertaken regarding the nursing role in day surgery. A detailed review was undertaken by Rhodes et al [19] although this was restricted solely to qualitative studies, did not focus specifically upon nursing research and only embraced a total of 5 studies. Gilmartin and Wright [20] examined 21 papers although not all were research studies undertaken by nurses. A more comprehensive review of the literature regarding nursing research into day surgery was therefore required. Common areas of interest emerging from a broader review of the literature may help to indicate where the future of surgical nursing intervention may arise. While this may not illuminate all possible directions, examining studies which evaluate patients' views/ experiences of day surgery will provide a firm, contemporary base upon which to build.

Aim

To review the present scope and direction of nursing research into day surgery in order to gain insight into possible future surgical nursing intervention in a rapidly changing healthcare environment.

Methods

Only studies between 1990 and 2007 were considered as day surgery has grown so rapidly during this period that to examine studies outside this time frame might prove somewhat futile. The review encompassed studies employing patient perspectives (only), aged over 18 years, undergoing nonlife threatening surgery in day surgery or 23 hour units. Studies that gathered data solely from patients experiencing medical investigations or studies where such patients were incorporated into the sample were excluded. Also, excluded were studies with a patient/ staff mix and in-patient/ day surgery patient mix in order to solely examine the day surgery patient experience. All papers had to be published research examining an aspect of ambulatory surgery and the primary researcher had to hold a clinical, research or educational post in nursing. Finally, dental day surgery, ophthalmic day surgery, patients with possible malignancies or studies in which such patients were incorporated into the sample were further excluded as such patients were deemed to experience unique concerns. The keywords utilised were day surgery, day case surgery, ambulatory surgery, patient satisfaction/ anxiety/ information/ assessment/ nursing intervention, nursing care. The bibliographical databases employed were MEDLINE, CINAHL, British Nursing Index and Archive, Applied Social Science Index, Cochrane Library and PsychInfo (accessed between February 2006 and April 2007).

The inclusion and exclusion criteria led to a substantial number of sources being identified (n=596). 482 were excluded as the prime researcher was a member of the medical profession. Of the 114 papers remaining the criteria put forward by Avis [21] and Hawker et al [22] was employed to ensure further scrutiny, that is, issues concerning the sample, quality of data and validity of conclusions. A further 5 papers were identified as nursing textbooks, 9 were literature reviews on various aspects of day surgery, 32 were descriptive or audit papers, 1 paper had no clear aim and 30 papers employed a sample not meeting the inclusion criteria. With these 77 further exclusions, the final number of papers was n=37. Three papers Dewar et al [23], Swan et al [24] and Gilmartin [25] were reported twice therefore an actual total of n=40 papers were included. The majority of studies originated (primary author) from the United States of America followed by the United Kingdom (Table 1). When considering studies from the United States of American and Canada (some also from Australia) it is common for patients to remain in hospital for 23 hours and be classified as day surgery patients. This issue will be discussed later in more depth.

From a critical review of each paper two main themes emerged based upon their broad area of study and the suggested recommendations for clinical practice - physical experiences (pain and post-operative nausea and vomiting) and psycho-educational experiences (satisfaction, information provision, anxiety and recovery).

Findings

Physical Experiences

Pain Management

In an early survey by Firth [26], 25% of patients stated they were awake the first night in pain and only 31% of patients achieved partial or no relief from their analgesia. The majority had not purchased analgesia as they thought the hospital would provide it. A more informed drug policy was therefore recommended, as 95% were not given analgesia to take home. In a similar study by Codd [27], almost 50% of patients stated they required analgesia immediately on arrival home. Approximately 80% complained of pain in more than one area and found analgesia was needed for 3 days.

Watt-Watson et al. [28] contacted laparoscopic cholecystectomy, shoulder or hand surgery patients post-operatively. "Although severe pain decreased across the week, almost a third of hand patients and over half of the shoulder patients reported severe pain on the seventh day." (p.159). Patients expected some pain but were surprised by its intensity. However, it was revealed that half of the patients had ceased taking their analgesia after 72 hours (despite moderate pain) for fear of adverse effects. Reluctance to take the prescribed medication was also uncovered by Older et al.[29]The desire to maintain mental control and endure pain without analgesia was a source of pride for a number of patients. Improved education and discussions with patients regarding pain management was recommended.

In a quasi-experimental study, Dewar et al (2003) assigned patients into i) an experimental group to receive a pamphlet regarding pain management, a 10–15 minutes pre-operative discussion, a post-operative telephone call each day for 3 post-operative days, and a request to keep a 'pain diary' for 4 days, and ii) a control group who received no additional intervention but were requested to keep a 'pain diary' for 4 post-operative days. The study concluded that, "Patients appear to benefit significantly from telephone advice about how to manage their pain following day surgery." [23 p.85]. Although it could be argued the intervention group was better prepared because of the clear attention bias, the study does highlight the need for verbal interaction regarding care following surgery. Attention bias refers to the additional consideration provided to one group in comparison with the other. This extra time/ attention alone can exert a positive influence.

In a second reporting of this study by Dewar et al [30], the data originating solely from the telephone interviews was examined. This data again demonstrated that patients held many misconceptions regarding pain management (pain is to be endured, addiction may result, utilising less analgesia than prescribed to endure pain). Also, some patients were too poorly to remember information at discharge and many questions developed. Again, improved communication 7 concerning pain management was recommended. Following a survey by Coll and Ameen [31] the need for adequate information regarding pain management was emphasized as differing surgical procedures may generate differing pain patterns. For example, patients who underwent hernia repair experienced a significantly higher level of pain over a 3 day period in comparison to other surgical procedures. In a further quasi-experimental study, Hulme et al [32] assigned patients to receive i) standard post-operative analgesia plus 5 minutes of foot massage or ii) standard post-operative analgesia. The experimental group reported significantly less pain 10 minutes after foot massage and until discharge although no significant difference was established with analgesia intake. The clinical utility of foot massage is briefly discussed although, again, the role of attention bias cannot be ignored.

Post-operative Nausea and Vomiting (PONV)

Fetzer et al (2004) surveyed 190 patients to gauge the effectiveness of a PONV assessment scale. "Three items 'length of nausea, number of vomiting episodes and amount of vomitus' were strongly related to the distress expressed by participants in the study." [33 p.79]. Further study into differing populations was recommended although the assessment scale has a central problem in that it will not identify susceptible patients prior to surgery. In a quasi-experimental study,

Anderson and Gross [34] assigned participants into three groups i) aromatherapy with isopropyl alcohol, ii) oil of peppermint, and iii) saline (placebo) gauze pad inhalation, to determine if aromatherapy was effective in treating PONV. All patients who entered the study were already experiencing PONV but volunteered to experience an 'alternative treatment'. Nausea scores decreased, but there were no significant differences between the groups. The most effective remedy for PONV could not be substantiated, that is, the treatment groups or additional attention. In a further study, Fetzer et al [35] again surveyed patients regarding post-discharge nausea and vomiting (PDNV) and uncovered the most commonly reported cause of PDNV to be the prescribed analgesia. As a result, 73% of patients reported they did not complete their prescribed medication. Such a high proportion not completing their medication clearly has implications for continued pain management.

Psycho-educational Experiences

Patient Satisfaction

The most prominent theme within this review concerns patient satisfaction. Donoghue et al [36] indicated that female patients with young children might find day surgery somewhat challenging. Such patients desired day surgery although caring for young children prior to admission and following discharge presented problems for recovery. In a study by Stevens et al [37], although pain, anxiety and privacy were concerning issues, childcare was again a strong theme. Barthelsson et al [38] echoed this childcare theme as it was very difficult for mothers to care for children immediately following surgery. However, the majority of mothers felt that returning home the same day was a positive experience although, again, information provision was insufficient.

Cox and O'Connell [39] interviewed patients post-operatively and analysed diaries kept for 4 post-operative days. It was revealed that insufficient time was given on the medical certificate provided for convalescence. Consequently, patients thought they were experiencing problems longer than the doctors had expected. The majority were satisfied with the information provided although 50% accessed other healthcare professionals for further advice following discharge. Horvath (40) also uncovered that patients received unrealistic information regarding recovery. Patients were informed pre-operatively that they would be able to resume 'normal activities' on the 3rd day although only 58% stated this was achieved - pain being the main barrier. The study therefore recommended that patients undergoing laparoscopic gynaecological surgery should be informed that it might take at least 5 days to return to their normal activity level. In a survey by Kleinbeck [41], patients were interviewed to help validate a post-operative recovery scale. The study suggested that self-reported health, activity level, fatigue, work ability and personal expectations all to be highly relevant for a good recovery. Accurate information concerning expectations of recovery and the course of recovery were therefore deemed very important.

In an earlier study, Thatcher [42]) highlighted the role of carers, that is, the social, emotional and financial cost. It was discovered that carers assumed considerable responsibility during the immediate post-operative phase. It was therefore recommended that "Carers must be involved in pre-discharge discussions, and information should include diet, elimination, activity and rest, as well as other usual post-surgical information." (p. 32). Majasaari et al [43 determined that half of all patients desired a family member to be present in hospital and "Nervousness, fatigue, insomnia and financial difficulties were reported to be the most common effects of the patients' illness on family members." (p. 1036). Swan et al [24] also highlighted the social cost of surgery. "The major finding from this study suggests that although the provider 'cost' may have been reduced with the 10 transition to ambulatory surgery, a significant portion of the cost or impact of this care may have been merely shifted to the patient and family." (p. 744).

Satisfaction and information provision were frequently inextricably linked. Fitzpatrick et al [44] revealed that 90% of patients received sufficient information. However, the study states that information regarding expected duration of recovery was lacking. A mixed methods study by Williams et al [45] revealed a general level of satisfaction in the quantitative element but the qualitative element indicated some negative features, that is, lack of privacy, sitting in a public area in a gown and slippers, inaccurate or confusing information and general lack of information. In the survey of 31 patients by Donoghue et al. [36] a lack of adequate education was uncovered. "Many of the participants reported that there were experiences they had not anticipated, surprises that they did not welcome and things that they would have liked to have known before the operation" (p.173). Costa [46] interviewed patients on the day of surgery and 1 week following surgery. The main themes to emerge were 'fear', 'knowing' and 'presence'. Fear manifested as anxiety regarding anaesthesia, loss of control and being cut. Knowing related to the lack of information and presence - the value of a nurse or relative being close. The brief clinical recommendations suggested the importance of the physical presence of a nurse and the utility of effective communication although it provided little insight into the clinical application of such important facets of care.

Hammond and Smith [47] conducted a survey into patients' perceptions of the day surgery environment. It was revealed they were largely unconcerned with mixed sex wards and conversations being overheard. "More surprisingly, we found that approximately half of our patients actually thought that overhearing conversations was a good thing, by making the experience more of a shared one." (p.93). For some patients, such brief social interactions may be of some therapeutic value although this requires more rigorous evaluation as this data was only taken from one day surgery unit. Finally, Gilmartin [25] interviewed patients 7–10 days following surgery. Four themes emerged 'interpersonal skills of the nurses', 'actual assessment of suitability', 'information provision' and 'problems of cancellations'. The study suggested that while the preassessment visit was effective, information provision and psychological care were somewhat lacking.

Information Provision

In a quasi-experimental study, Coslow and Eddy [48] assigned patients into i) individual 20 minute structured programme 1 to 2 weeks prior to surgery, tape-slide demonstration, 6-page information booklet, answers to questions and a knowledge test, or ii) brief information 1 hour prior to surgery. The only significant differences between the groups were increased requests for and consumption of analgesia, indicating decreased pain experience for the experimental group. Although the clinical recommendations were limited and experimental bias highly evident, the study did recognise patient education should be a nursing responsibility. In a further quasi-experimental study, Hering et al [49] assigned patients to receive i) instructions on how to access an information website or ii) routine care only. No significant difference in anxiety was established between the two groups although the experimental group was significantly more knowledgeable regarding surgery. The control group appeared not to want to extend their pre-assessment visit to be shown how to access the website and thereby may not have desired the extra information. Moreover, being knowledgeable regarding pending surgery only determines that some people desire more information and not that more informed people are less anxious.

Mitchell [50] hypothesized that patients who desired additional information would possess a greater internal health locus of control whereas patients with a greater external health locus of control would prefer less information. This theory is based upon the

assumption that 'internals' have a greater belief in their ability to shape their own destiny whereas 'externals' feel more influenced by luck, fate and powerful others [51]. No such relationship was established although it was determined that patients preferred a choice of information. Young and O'Connell [52] compared patients undergoing laparoscopic cholecystectomy in an 8 hour and a 23 hour facility. The only difference between the two groups was the quality of information. "All carers of day surgery patients stated they were given sufficient discharge information while only 55.6% of carers of patients who stayed in hospital overnight stated they received sufficient information." (p.6). In an early study by Otte [53] patients unanimously recognised that they received insufficient information. One of the conclusions stated "Providers of health care must develop a culture which promotes the principles of empowerment and which permeates the entire organisation to increase patient responsiveness." (p.1236). This lack of information, especially regarding discharge has been recently echoed [54]. Most patients considered discharge planning to be well organised although there were deficits related to verbal information provision. It was recommended that relatives be present to listen to the discharge information. Finally, in a study by Barthelsson et al [55] it was revealed that the majority of patients received insufficient information. Although this was problematic, all patients were happy to undergo day surgery. Limited information was tolerated for the convenience of undergoing day surgery.

Anxiety

In a quasi-experimental study, Steelman [56] assigned patients undergoing surgery and local anaesthesia into i) music via headphones pre- and intra-operatively, and ii) no music but given routine distraction by the nursing staff. A fall in post-operative blood pressure (diastolic pressure) at a greater rate than the control group was the only significant difference to be established. On this basis the use of intra-operative music was recommended. However, what constituted 'routine' distraction was not detailed. Augustin and Hains [57] hypothesized that listening to music of choice while waiting for surgery would significantly reduce anxiety. Forty-two patients were randomly assigned into groups i) pre-operative instructions plus music listening, and ii) pre-operative instructions only. Although there was a significant decrease in the physiological measures for the experimental group, the clinical utility of wearing headphones immediately prior to surgery is somewhat questionable. Moreover, no nursing intervention is put forward to help manage the increased anxiety in the patients identified as anxious - just the wearing of headphones. Mitchell [58] investigated the relationship between differing levels of information provision and anxiety. Patients were contacted pre-operatively by telephone and randomly assigned into groups to receive i) an extended information booklet, or ii) a simple information booklet (both mailed preoperatively). Additionally, participants completed a coping style questionnaire to determine their possible informational requirements, that is, vigilant coper (much information required) or avoidant coper (little information required) [59–61]. However, nurses rated all participants in receipt of the extended information as significantly less anxious irrespective of coping style. Although there was a trend for vigilant copers to require additional information ($p<0.076$), it was concluded that the extended level of information was beneficial for all.

Recovery

In an early study of patients and carer's by Frisch et al [62], data were collected by postal questionnaire and telephone interview. The carers' reports generally matched the patients' with the most frequent complaints from patients being weakness and fatigue. Approximately 40% of patients stated their pain was worst on the first day and more than 30% required assistance with bathing and dressing. The study also states that greater attention should be given to the psycho-educational aspects of care. In pursuit of this Vogelsang (1990) asserted that patients who experienced sustained contact with a familiar nurse on the day of surgery would be less anxious and more satisfied. In this study patients were randomly assigned into groups i) telephone discussion 1–3 day prior to admission, pre-operative contact with same nurse on the day of surgery for 5–10 minutes and postoperative contact with same nurse for 60–85 minutes, or ii) telephone discussion 1–3 day prior to admission, pre-operative contact with the same nurse on the day of surgery for 5–10 minutes only. All patients were telephoned post-operatively and "Nursing care was reported as 'excellent' by 80% of the subjects in the continued contact group and by 40% of the subjects in the control group." [63 p.318]. Continued contact with a familiar nurse was recommended although the clinical utility of this in a demanding day surgery unit may be somewhat restrictive. In a second reporting, Swan [64] surveyed patients to ascertain the most effective patient perceived nurse caring behaviours. Patient awareness of nurse caring behaviours was predominantly limited to the post-operative recovery room. One can only speculate that patients may have been too anxious prior to surgery to comprehend the care provided. Nevertheless, pre-operative behaviours such as teaching did not carry the same significance as post-operative physical care and attention.

Fetzer and Huot [65] conducted a study concerning reduced body temperature during surgery as low body temperature was deemed to possibly delay discharge. They noted patient body temperature on three occasions - pre-operatively, at the beginning of Phase II recovery and prior to discharge. No significant differences were established and it was concluded that temperature loss could not be considered as a possible cause of delayed discharge. Finally, in a study by Kleinbeck and Hoffart (1994) to determine recovery progress patients were telephoned twice during the postoperative phase. It was uncovered that 'getting back to normal' was a central concern for the majority of patients. Patients defined recovery as having no symptoms and being back to their usual activity level. However, "Patients felt vulnerable after leaving the hospital where nurses were readily available to answer questions." [66 p.397]. Additionally, much trial and error recovery was undertaken at home because of the lack of relevant information. Telephone calls to aid information provision plus the employment of more pragmatic information for home recovery were thereby recommended.

Study Limitations

The main limitation in this review, previously mentioned, concerns the mixing of research papers reporting on participants from both day surgery units and 23 hours units. The utilisation of 23 hour stay is not widely practiced throughout Europe as the international definition of day surgery is more broadly followed. While the number of 23 hours units is increasing in the United Kingdom [67], subtle differences could be reflected in data from global studies where 23 hour units are included. For example, some participants may have experienced an extended opportunity to interact with the healthcare professionals. This could have had a positive influence upon information provision or patient ability to manage post-operative issues such as pain. Conversely, such differences could have a negative impact on patients admitted to a 23 hour unit as they may experience differing problems. For example, discharge information from day surgery units is frequently evaluated as superior to 23 hour units. It is suggested that patients in 23 hour units may experience an increase in co-morbidities and thereby require greater attention/ information. "The United States and Canada currently lead the world (*in amount of day surgery*) and are unquestionably accepting sicker patients than most other countries." [68 p135].

Discussion

From a critical examination of the literature, focusing specifically upon patient experiences of day surgery, the direction in which modern, surgical nursing should progress may be centrally located in brief physical aspects of care and more comprehensive aspects of psychological care. Many nurse researchers are acutely aware of the shifting emphasis away from aspects of physical care to more psycho-educational care as none of the studies uncovered examined any physical issues beyond post-operative pain management or management of nausea and vomiting, that is, wound care, mobility, hygiene, nutrition. Future nursing studies and nurse interventions in modern day surgery should examine issues concerning transitory physical interventions and continuing psychoeducational interventions more closely. Transitory, as the physical care is commonly very brief and succinct, whereas psycho-educational care more continuous, ideally spanning several days. In such a dynamic healthcare environment such issues remain a base from which to continue to expand and explore contemporary issues in modern, elective surgical nursing.

Transitory Physical Interventions

Both immediate pain management and its management following discharge have been identified as requiring further consideration. Patients who have experienced poor pain management immediately following surgery have also experienced poor management following discharge. This can result from insufficient/ ineffective analgesia, limited information and patients' attitudes towards analgesia consumption. It is evident that effective pain assessment must be a strong consideration prior to discharge. In this way, patients who may require additional/ more appropriate analgesia can be identified. Discussion regarding pain management is also required prior to the day of surgery to help eliminate misconceptions such as pain is to be endured, addiction may occur, utilising less analgesia than prescribed and the unnecessary adoption of a stoical attitude regarding pain management. Furthermore, it is evident that pain management advice should be more widely considered via the telephone during the first few days following surgery. Further research into pain management both before and after surgery is required to help augment the repertoire of care available when conversing with patients in the post-operative period.

Post-operative nausea and vomiting (PONV) has also been recognised as problematic and requiring additional consideration. Again, the early assessment of PONV has helped to identify susceptible patients although a more proactive approach would bring greater benefit. The early assessment of patients experiencing PONV is vital to identify susceptible patients and initiate the appropriate action. Further research is required to determine if differing forms of alternative therapy or other simple techniques during the immediate post-operative phase can be of benefit, such as, deep breathing, aromatherapy or increased physical presence of the nurse. Additionally, post16 discharge nausea and vomiting (PDNV) has become problematic for a number of patients and thereby requires greater scrutiny. For example, the journey home, increased movement and additional activities once home are all aspects requiring further investigation.

Continuing Psycho-educational Interventions

A strong element throughout the review was the need for improved psychological aspects of care, in particular information provision. Firstly, some studies have gained modest success in anxiety management with distraction techniques such as music, communication and continued contact with a familiar nurse. However, such claims are somewhat simplistic or lacking in clinical utility. Nursing must seek more formal procedures beyond the simple provision of music. For example, during communication the precise aspects of intervention which provide the most support for patients remain unclear. Research concerning more formal, tangible aspects of psychological management is required to advance the repertoire of interventions available. Such issues were echoed in both recent literature reviews highlighted earlier [19, 20]. Such interventions may also help embrace the most prominent theme in the review - patient satisfaction. Increased patient satisfaction was associated with effective pain management, decreased nausea and vomiting, low anxiety and the provision of adequate information. Adequate time was required prior to admission to assess informational needs and provide the desired level of written/verbal information.

It is broadly recommended that the information should also be appropriate for carers and patients to reach an informed decision should an aspect of their recovery become problematic, that is, wound healing, pain, nausea and vomiting, mobilising, hygiene. Further studies are required to help examine methods by which information provision can be more formally presented at the desired level, with the required content and at the most appropriate time.

Conclusion

Many evolving nursing practices in modern elective day surgery have their roots in medical knowledge. If nursing is to help shape the future of modern surgery, contemporary nursing knowledge is vital. While examining papers which only consider patients' subjective experiences of day surgery may not identify all possible directions, such perceptions are client centred and therefore can provide the stimulus for further studies/ clinical debate regarding the practical utility of the recommendations. Further studies may therefore wish to examine the formal, timely provision of accurate pre-operative information, tangible aspects of anxiety management on the day of surgery, provision of information more appropriate for a home recovery and communication with patients during the first few days following discharge. Furthermore, educators of nurses must recognise and react to such changes in order to continue to develop programmes which accurately reflect this modern, surgical environment.

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Table 1 Included evidence.

	Source	Origin	Research Method	Aim of Study	Sample & Data Collection
23	Dewar *et al* (2003).	Canada.	Quasi-experimental design.	To determine if a nursing intervention pre-operatively with post-operative follow up would improve pain management.	Control group n=135, experimental group n=87. All patients self-rated anxiety level and pain prior to surgery, pain diaries for 4 post-operative days returned via mail. Experimental group also telephoned each day for 3 days post-operatively to gauge pain & PONV. All patients telephoned on day 5 to gauge pain level.
24	Swan *et al* (1998).	USA.	Survey.	To examine the relationship of pre-operative and post-operative patient-perceived nurse caring behaviours to symptom distress.	n=100 participants invited to complete a General Symptoms Distress Scale, Functional Status questionnaire, and Caring behaviours Inventory. Interviews were undertaken via telephone on post-operative days 1, 4, and 7.
25	Gilmartin (2004).	UK.	Phenomenological.	To elicit patients' perceptions of the pre-assessment preparation.	n=30 interviewed at home 7-10 days following surgery. Interviews lasted approx. 1 hour and questions were directed at understanding the participants' experience of pre-assessment.
26	Firth (1991).	UK.	Survey.	To uncover post-operative pain experiences.	Postal questionnaire returned by n=813 patients. 13-item self-reported questionnaire concerning pain experience and management.
27	Codd (1991).	UK.	Survey.	To discover whether patients found it necessary to take analgesics following discharge.	Questionnaire provided on day of surgery and a repeat questionnaire for return by mail n=37. Questionnaire concerned level of pain, discomfort and PONV. Clinical Questionnaire also provided to anaesthetists to rate level of patient anxiety.
28	Watt-Watson *et al* (2004).	Canada.	Survey.	To examine the post-operative pain, pain-related interference with usual activities and analgesia used.	n=214. Self-reported pain inventory and analgesia taken measured pre-operatively then on post-operatively on day 1, 2, 3 and 7. Possible side-effects from analgesia and adequacy of pain management information measured.
29	Older et al (2007)	UK.	Qualitative.	To gain an insight into the patient experience after day case surgery, particularly focusing on patients actual analgesic practice, and factors influencing the use of a multimodal analgesic regime.	n=21 participants interviewed via telephone using a tape recorder 3 days following surgery. Interviews lasted approx. 15 – 20 minutes and semi-structured questions focussing on the experience of pain and how they felt about analgesia.
30	Dewar et al (2004) 2nd reporting.	Canada.	Qualitative.	To describe the nurse's experience of using the telephone to follow up with patients and to advise on how to manage pain.	n=222 diaries returned therefore all these patients telephoned. Data collected from notes taken during post-operative telephone conversation plus diaries. Patients telephoned 1st post-operative day.
31	Coll & Ameen (2006).	UK.	Survey.	To examine the pain profile of three types of day surgery operation.	n=578 completed 5 self-reported pre & post-operative questionnaires concerning dimensions of health, social support health locus of control and VAS for pain.
32	Hulme *et al* (1999).	UK.	Qualitative and quantitative.	To examine the effects of foot massage on patients' perceptions of care.	Control group n=29, experimental group n=30. Self-reported measures of pain on several occasions during immediate post-operative period. Questionnaire provided for self-reported pain, comfort and analgesia intake during 1st post-operative week.
33	Fetzer *et al* (2004).	USA.	Survey.	To evaluate a PONV Inventory.	n=133 patients telephone 24 hours following discharge. Level of PONV rated using patient response to an 8-item Inventory.
34	Anderson & Gross (2004).	USA.	Quasi-experimental design.	To determine if aromatherapy is effective in treating post-operative nausea.	n=33 randomly allocated into 3 experimental groups. Visual Analogue Scale (VAS) to measure degree of nausea on several occasions during Phase I and II recovery.

	Source	Origin	Research Method	Aim of Study	Sample & Data Collection
35	Fetzer *et al* (2005).	USA.	Survey.	To evaluate what self-care activities are used for post-discharge nausea and vomiting & if they are effective.	Telephone survey n=190. Level of PONV experienced once home following surgery.
36	Donoghue *et al* (1995).	Australia.	Qualitative and quantitative.	To report women's experience of laparoscopic surgery.	n=31 patients interviewed on 3 differing occasions using semi-structured method and questionnaire. n=11 interviewed 1st post-operative week, n=10 interviewed 2nd post-operative week and n=10 interviewed 3rd post-operative week.
37	Stevens *et al* (2001).	Australia.	Qualitative.	To build theory about the day surgery experience by examining the perceptions of a group women undergoing same-day surgery.	Tape-recorded telephone interviews conducted 1 week after surgery with n=13 participants. Participants were encouraged to talk about their experiences of day surgery.
38	Barthelsson *et al* (2003a).	Sweden.	Phenomenological.	To explore patient's experiences of this type of day surgery.	n=7 participants interviewed 1 week post-operatively using a tape-recorder. Questions were directed at ascertaining experiences of day surgery.
39	Cox & O'Connell (2003).	Australia.	Qualitative and quantitative.	To investigate women's experiences of recovering at home following surgery.	n=80. Post-operative diary completed for first 4 days. Patients also telephone to relay experiences from day 5 - 10.
40	Horvath (2003).	USA.	Survey.	To measure pain, fatigue, and functional limitations affecting home recovery.	N=91 returned via mail a with 6-page home recovery log mainly focusing upon pain, fatigue, and functional ability every afternoon for 6 post-operative days.
41	Kleinbeck (2000).	USA.	Quantitative.	To describe the development and initial testing of a self-reported measure of recuperation.	N=59 participants interviewed at home using 15-item recovery scale which focused upon health, activity, fatigue, work ability and expectations.
42	Thatcher (1996).	UK.	Phenomenological.	To investigate the nature of patients' experiences following discharge.	n=6 participants interviewed in their home 4 – 6 days following surgery. Participants were encouraged to talk about their experiences of day surgery.
43	Majasaari *et al* (2005).	Finland.	Survey.	To determine patient's perceptions of emotional support and information provided to family members.	Questionnaire provided on day of surgery for return by mail n=60. 36-item questionnaire concerned patient/ carer support and satisfaction with hospital care.
44	Fitzpatrick *et al* (1998).	UK.	Survey.	To determine patient experience of pain, PONV and wound healing.	Telephone interview of n=30 patients. 30-item questionnaire mainly examining patient's experience of pain, its management, PONV and wound healing.
45	Williams *et al* (2003)	Australia.	Survey.	To assess patient satisfaction with day surgery.	n=107 participants responded to a mailed questionnaire 1 week after day surgery. Questionnaire mainly concerned satisfaction with admission, operation, environment, discharge and general satisfaction rating.
46	Costa (2001).	USA.	Phenomenological	To explore patient's perceptions and views of the peri-operative experience.	13 women and 3 men. 1 week post-operative tape-recorded interview. Participants asked to recall how they felt the night prior to surgery, on the day and if expectations were met.
47	Hammond & Smith (2004).	UK.	Survey.	To seek the opinion of patients on day surgery ward design.	N=304 questionnaires completed on day of surgery prior to discharge. Items mainly concerned privacy, mixed ward facility, pre and post-operative patient mix.
48	Coslow & Eddy (1998).	USA.	Quasi-experimental design.	To identify optimal methods of preparing patients for surgery.	Control group n=15, experimental group n=15. BP, pulse, respirations, self-rated pain, requests for analgesia, PONV, length of stay in Phase I & II and patient satisfaction.
49	Hering *et al* (2005).	USA.	Quasi-experimental design.	To determine the impact of a website on patient education and satisfaction with anaesthesia care.	Control group n=39, experimental group n=25. Self-rated anxiety levels and scores on an anaesthesia quiz.

(Table 1 continues overleaf)

	Source	Origin	Research Method	Aim of Study	Sample & Data Collection
50	Mitchell (1997).	UK.	Survey.	To establish the relationship between choice of preparatory information and perceived health locus of control.	Questionnaires concerning completed on the day of surgery by n=150 patients. Questionnaires examined health locus of control beliefs and desired level of information provision.
52	Young & O'Connell (2001).	Australia.	Quasi-experimental design.	To determine patients' and carers' experiences convalescing from laparoscopic cholecystectomy at home after being discharged within 8 hours and 23 hours.	Control group n=14 (23 hours stay) and experimental group n=14 (8 hour stay). Post-operative symptom diary completed for 4 days (tiredness, mobility, pain, eating & drinking, PONV, elimination, wound management and information provision. Both patient and carer completed a diary each. Telephone interview on day 10 covering same aspects.
53	Otte (1996).	UK.	Qualitative.	To examine patients' experiences and views of day surgery.	n=8 participants interviewed using a tape recorder in their homes 3 weeks following surgery. Interviews lasted approx. 45 minutes and questions were directed gaining experience of being a day-case patient, observations, expectations and involvement in decisions.
54	Gilmartin (2007) 2nd reporting.	UK.	Phenomenological.	To explore and reveal patients' perceptions of discharge arrangements and recovery following day surgery. Introduction.	n=30 interviewed at home 7-10 days following surgery. Interviews lasted approx. 1 hour and questions were directed at understanding the participants' experience of discharge preparation.
55	Barthelsson *et al* (2003b).	Sweden.	Qualitative.	To explore patient's experiences of this type of day surgery.	n=12 participants interviewed 1 week post-operatively using a tape-recorder. Questions were directed at ascertaining experiences of living with gallstone disease, pre & post-operative care and recovery at home.
56	Steelman (1990).	USA.	Quasi-experimental design.	To evaluate the effects of intra-operative tranquil music on patients' anxiety and blood pressure.	Control group n=22, experimental group n=21. Pre-and post-operative self-rated anxiety questionnaire and intra-operative blood pressure.
57	Augustin & Hains (1996).	USA.	Quasi-experimental design.	To evaluate the effectiveness of music in reducing patient pre-operative anxiety.	Control group n=21, experimental group n=21. BP, pulse, respirations and self-rated questionnaire all to monitor level of anxiety.
58	Mitchell (2000).	UK.	Quasi-experimental design.	To establish the relationship between choice of preparatory information and vigilant & avoidant coping.	Group 1 extended information n=46 and group 2 simple information n=41. Pre-operative self-reported measures of anxiety, health locus of control, self-efficacy, information requirements and coping style.
62	Frisch *et al* (1990).	Canada.	Survey.	To obtain a preliminary picture of patients' and helpers' experience of ambulatory surgery and recovery at home.	n=41 patient-helper pairs. Parallel questionnaires for patients and helpers mainly examining anxiety, post-op symptoms and care-giving activitie4s. Completed on day 1, 2 and 7 in post-operative period and returned via mail.
63	Vogelsang (1990)	USA.	Quasi-experimental design.	To investigate the impact continued contact with a familiar nurse, from pre-admission procedures through post-operative awaking to consciousness in the PACU, had on women's post-discharge evaluations of surgery.	Control group n=20, experimental group n=20. Post-operative telephone questionnaire 3 – 5 days concerning discharge time and satisfaction with care.
64	Swan (1998) 2nd reporting.	USA.	Survey.	To describe peri-operative changes in symptom distress and functional status experienced by patients undergoing ambulatory surgery.	n=100 participants invited to complete a General Symptoms Distress Scale, Functional Status questionnaire, and Caring behaviours Inventory. Interviews were undertaken via telephone on post-operative days 1, 4, and 7.

	Source	Origin	Research Method	Aim of Study	Sample & Data Collection
65	Fetzer-Fowler & Huot (1992).	USA.	Survey.	To describe the post-operative temperatures from admission to Phase II recovery through to discharge home.	Tympanic temperature of n=101 patients recorded at 3 times - pre-operative admission, post-operatively at beginning of Phase II recovery and at the end of Phase II recovery.
66	Kleinbeck & Hoffart (1994).	USA.	Qualitative.	To determine what symptoms/ events patients experience when recovery occurs away from the hospital and how these are managed.	N=19 participants interviewed via telephone on 2nd and 5th post-operative day. Both interviews were tape-recorded. Initial questions concerned managing problems, difficulties and length of recovery time.