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Laparoscopic day surgery: the process of recovery for women

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Day surgery procedures are rapidly increasing in number and complexity and will continue to do so in line with government policy. These changes warrant an assessment of the effect of decreased contact with medical and nursing professionals, particularly in the postoperative recovery phase. Semi-structured interviews used to investigate women's experiences of laparoscopic day surgery and their perceived recovery revealed that women in the study were not optimally prepared for the experience. In particular, they were surprised about the severity and duration of pain, extent of the disability, the level of disruption to their work and home lives and the need for physical and emotional support following the procedure. These findings have implications for pre- and postoperative education, community support services and aftercare.

Key words: Day surgery, laparoscopy, outcomes, recovery

Introduction

Ambulatory or day surgery is a growing phenomenon in healthcare in NSW[1]. The range of procedures practised overseas under day surgery conditions is increasing in scope and complexity[2,3] presumably because of technological advances and the pressure to contain costs. This trend will undoubtedly be reflected in Australia, if the rapidly increasing use of day surgery seen in NSW in the last decade is any indication. It has been suggested that 'day only admissions will constitute 45% of all admissions to NSW acute hospitals by the year 2001'[1]. Therefore, there is a need to assess the effect of reduced postoperative hospital stay on the recovery process following day surgery procedures.

There are many clinical studies describing the value of laparoscopy, relative efficacy of anaesthetics and the occurrence of nausea, vomiting and pain during the immediate postoperative period before discharge from Day Surgery Units (DSUs), both in Australia[4–6] and overseas[7–9]. Although day surgery is now an established type of hospital admission, with the possible exception of O'Connor et al.[10] there is no comprehensive study in Australian medical or nursing literature regarding the level of patient preparation for laparoscopy in day surgery situations or how well the patients recover at home. This paper presents the findings of a study which investigated women's perceptions of recovery after laparoscopic day surgery.

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Literature review

In Canada, Frisch et al.[11] investigated the outcome of day surgery for 23 pairs of patients and their helpers. The sample was drawn from the day surgery patients of three hospitals who were recovering from tubal ligation, arthroscopy and hand surgery. They were surveyed by questionnaire on postoperative days 1, 2 and 7; and followed up by telephone on days 2 and 7 and again 3 months later. Tubal ligation patients reported more problems with appetite, bowel movements, shoulder soreness and back pain than did hand surgery or arthroscopy patients[11]. The researchers found that respondents with no prior hospital experience reported more physical symptoms and more difficulties with activities of daily living than those with experience. One theme of their telephone interviews, on postoperative days 2 and 7, was whether 'previous surgical experience affected participants' expectations and plans for recovery'[11]. However this only applied to those having hand surgery as no others reported previous surgical experience. They also found that outcomes varied, depending on previous experience of ambulatory surgery, employment status, education, expectations and preparations for surgery. The researchers concluded that clients could have been helped by preoperative teaching about pain control and the effects of post-surgical recovery on usual activities[11].

There are obviously numerous factors which affect patients' satisfaction with the day surgery environment. These include the facilities, policies and procedures, staff interactions, adequacy of information and home

support[2,10,12]. O'Connor et a.[10] found that 351 of the 448 (78.4%) respondents would recommend a DSU for people having the same procedure. Gamotis et al.[13] in a study of 183 elective surgery cases found that outpatients were more satisfied with nurses and nursing staff than inpatients (although the difference was not significant). However, when respondents were asked whether the length of stay was appropriate, 52% of tubal ligation patients who had day surgery said that the stay was too short, compared with only 20% for patients undergoing the same operation as inpatients[14]. Areas of dissatisfaction included long waits between admission and discharge, lack of information and lack of postoperative feedback from surgeons[12].

Exploring satisfaction with day surgery, Frisch et al.[11] found that 22% (five) of all patients responding would have preferred to stay in hospital if they had the same surgery again. In addition, 23% (five) of the helpers were of the same opinion. Another Canadian study[14] found that 46% (14) of 31 tubal ligation patients randomly assigned to day surgery would also have preferred inpatient surgery, whereas only 7% (two) of 30 women randomly assigned to inpatient surgery would have preferred to go home on the same day. Frisch et al.[11] made the point that patients in the UK and Canada do not pay 'out of pocket' for surgery and hospitalization costs and thus may have a different outlook from people in the USA where a number of studies in the early 1980s (cited by Frisch et al.[11]) reported a high rate of patient satisfaction. However, Williams and Brett[15] point out that patient outcomes rather than simply patient satisfaction must be taken into account when evaluating quality of care.

Thomas and Hare[16] noted that the one study they found that showed a very low (4%) rate of dissatisfaction with same-day sterilization (by the electrocoagulation method) was also the only study in which women were routinely visited twice by a district nurse during their first week home after surgery. The women did not have to initiate contact with the health service (Brash, 1976; cited in Thomas and Hare[16], p. 447). They also found that 11 (31%) regretted their decision not to stay in hospital. Some of these reported being woken early for discharge from the DSU, difficulties of later pain and coping with children at home. Overall, 10 women had no discomfort, 18 experienced nausea or pain and eight had felt quite ill or experienced considerable pain. Only two of the women called on a general practitioner (GP) or nurse for assistance in the 24 h after the operation. It can be seen that women have widely varying experiences following apparently straightforward procedures. In a concurrent survey[16] of the GPs involved in these cases, one GP commented that early discharge was possibly more beneficial to the women's families than to the women themselves, and another that 'many women seemed ill-prepared for the level of discomfort they may experience', but many GPs had not realized that their patients had any problems.

Purpose of the research

This research by interview was undertaken as the first step needed to answer many questions that structured surveys have left unanswered. Semi-structured interviews allowed women's concerns about healthcare, family and financial responsibilities to emerge and show their relative importance. The interview technique was chosen to provide an opportunity to find out in some depth women's perceptions of the effects of surgery, their educational and support needs. These data were used to assist in adaption of existing questionnaires to the Australian context so that broader samples of patients can be surveyed.

Laparoscopy patients have been chosen for this study because this technique is frequently used in gynaecological outpatient surgery (principally for tubal ligation and diagnostic investigations) and the women undergoing the procedure have some characteristics in common. First, the impact of the procedure on the patient's comfort is not necessarily trivial and has been reported to persist for several days in a minority of cases[14,17,18]. Second, there is postoperative discomfort or pain thought to be caused by the presence in the abdominal cavity of residual carbon dioxide from the procedure[17]. All have general anaesthesia with possible related side-effects. Many have young children at home to care for, which may make day surgery a more attractive prospect[19] but may complicate convalescence.

The objective of the study was to report women's experiences of laparoscopic day surgery. The project aimed to:

- determine aspects of the postoperative experience, such as comfort, nausea and pain; emotional aspects; limitations to normal activity and duration of recovery;
- investigate if there was any difference in the reported experiences of women who had a laparoscopy in the DSU for the first time, compared to those who have had previous laparoscopy in the DSU;
- determine if there were any differences in the quality of data collected by telephone interview compared with personal interview;
- determine if there were any qualitative difference in data collected after 3 weeks compared to data collected 1 week post-procedure.

Method

Selection and recruitment

A convenience sample of 31 women was recruited from gynaecological laparoscopy patients at a large teaching hospital DSU during a 10 month period. Women were invited by letter to take part in the study by staff in the DSU or private gynaecologists at the time of arranging surgery. On the day of surgery, the DSU admitting nurse asked women who were willing to participate to

sign consent forms. Criteria for inclusion in the study included willingness of the gynaecologist to allow the patient to be approached and that the patient was fluent enough in English to be interviewed without an interpreter.

Allocation to interview type

Participants in any 1 week were allocated to one of the three interview conditions (see Table 1) in the order that they were required. Arbitrary allocation to the three interview groups was used to avoid introducing systematic bias into group comparisons. It was thought that women having more difficulty recovering or busier women might opt for later or telephone interviews.

For 21 participants who were interviewed, this was their first laparoscopy experience. Six of these had early interviews (group A), eight had late home interviews (group B) and seven had late telephone interviews (group C). Ten participants who were interviewed had experienced their second laparoscopy. Of these 10, five had early interviews (group A), two had late home interviews (group B) and three had late telephone interviews (group C).

Demographic questionnaire

A 12-item questionnaire was completed by the participant at the start of home interviews. This was a quick, convenient way of collecting short items of factual information on age, hospital experience, work commitments, family, education level, personal and domestic help received during the recovery period and medication taken during the postoperative 24 h.

Interviews

Home interviews (groups A and B)

The interviews were semi-structured and women were asked to describe their experience. A prompt list was prepared of topics to be raised by the interviewer if women did not mention them of their own accord. However, the interviewer was careful to ask neutral questions such as "how was your appetite?", "did you have any discomfort?". The whole home interview took from 30–60 min depending on the woman's conversational style and on the number of comments she wished to make.

Table 1. Description of interview timetable, showing number of participants in each group

Groups	*Interview first week postop*	*Interview third week postop*	*Phone Interview third week postop*
A	11		11 (repeated)
B		10	
C			10

Follow-up telephone interviews (group A)

This second interview concluded on the telephone assessed the women's recovery 3 weeks post-surgery. General questions were asked regarding her experience of recovery, progress or changes and use of health services between the first and the second interview. These calls were frequently completed in less than 5 min and were mainly factual in nature.

Telephone-only interviews (group C)

The interviewer rang at pre-arranged times and used a semi-structured interview schedule as for the home interview. Starter questions based on the experience and information gained from the face-to-face interviews were used as openers. The first two questions were asked consistently, however the remainder of the interviews followed the topics introduced by the women. Content of the interviews was recorded in longhand and these notes were reviewed and annotated immediately after each interview to minimize loss of information.

Transcription and analysis

Interview tapes were transcribed with all identifying details of subjects and medical specialists removed. Transcripts were read by at least two of the investigators. Those passages identified as of immediate interest to the investigators were marked for coding. Initial themes for cross-indexing of these passages were determined. Although a very specific index tree was initially employed for the analysis, it was found that this was too detailed and was replaced with broader categories.

Results

The demographic information (Table 2) reveals that of the 31 participants, 68% had spent less than 1 day in hospital before and 42% had had previous day surgery. One participant had spent 30 days and two had spent 10 days in hospital in the last year. Thirty-nine per cent had no children and one had five and two had four children. Twenty-three per cent of the women did not work outside the home. Fifty-five per cent of the participants spent 20 h or more on work outside their home.

The dominant theme which unites the majority of anecdotes related in the interviews is that of 'expectations'. 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. Only a few reported that there were no surprises and that their general expectations were met. One woman reporting her first experience of laparoscopy, stated that "there were no surprises, the pain was very severe", but she had expected it to be (group C). Another was told by a friend to expect it to be very painful and so she was prepared for the pain (group C). Participants who had had previous operations of a similar nature compared their

Table 2. Demographic information

Number of laparoscopies	%
First	70
Subsequent	30
Age(yr)	**%**
≤20	7
21–30	19
31–40	61
41–50	13
51–60	0
≥61	0
Living situation	**%**
Live alone	3
With partner/spouse	19
With child(ren)	3
With others	13
With partner/spouse and child(ren)	48
With partner/spouse and relative(s)	3
With child(ren) and others	7
With partner/spouse, child(ren) and relative(s)	3
Level of education	**%**
School Certificate	13
Higher School Certificate	23
TAFE	23
Degree	32
Higher degree	11

experiences and frequently found that the current procedure was quite different. For example, one woman commented that she knew from the previous operation that the gas caused pain. However, on the first occasion she did not experience pain and consequently did not expect pain on this occasion (group A). Another woman was glad that she had been told about the pain in her chest from the gas, as she would have been very frightened if she had not known (group B).

Many said that they expected pain, but women having their first experience were surprised about the severity of the pain from the residual gas. One woman said that she didn't expect the degree of pain experienced, especially on the first day, and she had a severe cramp "like having a stitch" all the next day (group A). Another said "actually after the operation, that night and the next morning is agony" (group B), whereas others said that they expected pain but not to the extent that they felt it. One of the interviewees, a registered nurse who had worked in the area of gynaecology was still surprised by the severity of the pain she felt under her rib and diaphragm (group A).

The pain experienced was located either in the abdominal area or was referred pain felt in the upper chest and shoulders. They described the pain as "agony", "muscle cramp times ten", "absolutely killing me for 5 days", "like a dislocated shoulder", "like I was having a heart attack", "really painful", and "severe". Only one woman described the degree of pain as "tenderness". Although there were various answers to the question "What was the most effective way to relieve the pain" each woman seemed to find that a different strategy worked for her. These included lying down, sitting up, staying still, walking. There was also a range of responses for the question related to analgesics. Most of the women needed analgesia during recovery, some women found it useful, others did not.

Some women commented that they were uncomfortable for some time, "the gas really bothered me for about a week, I couldn't walk" (group B). Women generally did not expect the length of time required for recovery. A friend had told one women that she should "count on feeling off for a week" (group C). Many of the participants were also surprised about the degree of ill health and fatigue with some saying they felt debilitated and needed to rest and regain strength. One assumed that the operation was minor, but found that it was "pretty traumatic" (group B). Others, expecting to go out that night or be able to garden the afternoon of the operation found these activities were not possible. Specific problems included sutures rubbing, irritating, itching, wound weeping, inflammation, bruising, swelling and tenderness, bloating, distension, pressure on the bladder, dizziness, constipation, loss of appetite, nausea and having a "very very heavy period... the heaviest I've ever had in my life" (group B). For some the nature of the surgical procedure (for example tubal ligation) resulted in feelings of depression.

There were also surprises about the procedure and the extent of the operation reflected in one saying that she didn't realise that they went "into the vagina to push the uterus around" (group B). Another expected a premedication and found walking into surgery unnerving (group C). One woman was not expecting the anaesthetic to be so quick acting, while others wished they had known how long it takes for the effect of the anaesthetic to wear off (group C). A few women commented on the degree of bruising and that they had read in the information given by DSU that sutures dissolve, but they did not (group B).

The amount and value of knowledge gained from health professionals, particularly from the first experience participants attracted comments. One said "you're going in blind, really" (group B). Another woman recalled that

> the doctors just said it was a cut here, a cut there and a couple of stitches, you'll be all right sort of thing. It was a little bit more than that (group B).

A comment was made that "they have a habit of understating pain in the medical profession" (group B) but another felt that it is impossible to tell anybody how much it is going to hurt (group B).

The knowledge gaps that many of the women voiced included activities to avoid such as lifting, effect on the menstrual cycle, expected times of cessation of bleeding and resumption of intercourse. Some knew that they were not to use tampons for some time after the procedure, but others had not anticipated that they would need to use pads at all. Some worried about not 'tearing anything' and how long the stitches would take to dissolve. One woman who had previously experienced laparoscopy summarized her feelings about the lack of knowledge by saying

> Laparoscopy is a healthy person thing. Healthy people have no idea what hospital is like (group C).

Disruption to paid work was another unanticipated consequence. Many needed to take more sick leave than they had been told to expect, others reported that they were not given any advice about taking time off work at all. One participant thought she would be back to work the same day (group B). Those who returned also faced difficulties. For example one woman described the embarrassment of experiencing a very heavy period presumably as a result of the procedure. She worked in the office with men and found it very upsetting because she found she was going to the toilet every half hour to check her sanitary pad.

Those that said they went back to work generally were not able to lift or do any strenuous work. Although one woman said that it "didn't stop me from my work at all", she had previously commented that when she was at work she had told her colleagues that she would not be able to lift. She also said that while she was at work she sat there with a hot pack on her stomach as it was still tender.

Interruption to home life occurred as a result of the procedure, with several unable to do housework or prepare meals. If adequate information had been given, meals could have been prepared beforehand. When returning to the normal level of household duties 6 days after the procedure, another woman commented that she had "quite a bit of pain and soreness". The same woman also kept her 13 yr old from school to care for her on the first day after the procedure, as her husband had to go interstate (group B). Some women suggested that it would not be a good idea to come home from the operation to look after the children. The advice was either to stay in hospital (if possible) or have someone look after them until you are well enough to do so. One woman said that it was good to be going home after the operation (rather than staying in overnight) because then you are not alone (group A).

Many of the women said that they needed both physical and emotional support from their families or others. The extra demands made upon the family members ranged from giving assistance with showering, supporting emotional needs, assisting with preparation of meals, getting into the car, changing the dressing and child minding. A few of the women suggested that the families need to be informed regarding the general health and capabilities of their spouse/mother and the effects of the surgery on her. Not to drink alcohol, drive or work for at least 24 h after the procedure needed to be made explicit. One "need(ed) someone to cocoon me and look after me" and that the next day (post-operation) should be a "total caring supportive day – treated as an invalid" (group A).

There is an obvious need for the family to be aware of the extent of the operation and the debilitation that it can cause. Seventy-seven per cent of the participants received assistance from one or more adults and 29% received assistance from one or more young people. There was no indication that any of the women had utilized community or private nurses and only a few of the women had contacted their GP for advice concerning their recovery.

In response to the question "Was there anything the day surgery staff could have done to make your stay more comfortable?" most said that the staff were very good and "that they knew what they were doing" (group A). The women appreciated that the "nurses kept checking to see if you're all right" (group A) and "when I got on the table the nurse actually held my hand when I went under and that was really important to me..." (group B). One woman said that she was asked by the doctors and nurses if there was anything she wanted to ask about. However there were a few women who noted that they did not know what questions to ask. Another was thankful for the telephone call from the unit the next day "just when I needed to talk to them they actually rang me" (group B). Another said "you still couldn't get over the feeling or fact that it was production line operation, but no, it wasn't rushed" (group A).

Discussion

According to Birch[20] if day surgery was "the buzzword of the 1980s then aftercare service is likely to replace it in the 1990s". It has been demonstrated by this study and others[11,16,20,21] that some cohorts of patients attending DSU need home support on discharge. For example, Frisch et al.[11] reported that patients experienced difficulty with daily activities including housework, meal preparation and child care and more than 30% required help with bathing and dressing. Many of the women in the current study had most of the household duties accomplished prior to their surgery or had other members of the household attend to these tasks. However, there were examples of women who were unable to ignore these responsibilities which supported the finding that some women are unable to put aside family responsibilities in favour of their own health, as has been reported by Graham, 1984 and Blaxter and Paterson, 1982 (cited in Thomas and Hare[16]). According to Thomas and Hare[16] day surgery encourages them to maintain their usual role despite the surgery and many of the respondents in this study found this difficult.

As a result of the day surgery, women were not only unable to attend to their families' needs, they also needed assistance to attend to their own personal care. This supports the findings of O'Connor et al.[10] that 34% of the respondents stated that someone took time off work or gave up their usual activities to care for them. These types of unexpected interruptions to daily routines were also found in the current study.

The severity and duration of the pain was not expected by most of the women. Many required analgesia, in addition to other techniques such as hot water bottles, positioning and maintaining mobility, although there was not a consensus as to which technique was most beneficial. The duration of recovery was also

longer than expected and this resulted in many of the women requiring more sick leave than anticipated. It was the exception rather than the rule for women to return to their usual activities as they had expected. There is a need for women undergoing this procedure to have realistic expectations for recovery which supports Birch's[20] point that it is important that patients should not hold misconceptions as to their postoperative abilities following day surgery.

The frequency of surprises and unexpected experiences demonstrates the need for preoperative and postoperative education. The timing and method of imparting this information may need to be reviewed. Preoperative anxiety and the effect of anaesthetic drugs can impair understanding and retention of information. Some women said they would have liked to receive a booklet which outlined the procedure and postoperative care to allow them to be thoroughly prepared for the surgery and aftercare. Some DSUs overseas utilize preoperative clinics to convey preoperative education[22–24]. This is designed to familiarize the patient with the day surgery centre, decrease anxiety, inform the patient of the postoperative recovery and in some cases also educate the care giver[22,25,26].

Concerns and unanswered questions related to ovulation and menstruation are very important to these women as they have frequently undergone laparoscopy to investigate infertility or for permanent sterilization. Because of the short duration of their hospital stay, most women did not feel adequately informed about the procedure, diagnosis and prognosis. A common complaint found here which supports the study of O'Connor et al.[10], was the length of time (often up to 6 weeks) before visiting the specialist. One had had a diagnostic procedure for cancer and was still unaware of her prognosis (3 weeks post-surgery).

The advantages and disadvantages of day surgery compared to inpatient surgery had been considered by some women. If the women had children at home the benefit of staying in hospital was acknowledged but this would obviously require another adult to attend to the child(ren)'s needs and might reduce the opportunity for family support. Staying in hospital might also enable the woman to see the specialist prior to discharge. The reduced contact time with doctors has been reported as a factor leading to patient dissatisfaction with day surgery[10,14].

Health services were not utilized by many patients following the procedure. Some contacted their GP and occasionally the specialist for information regarding the management of sutures and inflamed wounds. There was however, no effort to contact community or private nurses, despite many of the women requiring assistance in activities of daily living for a number of days postoperatively. Further investigation is required to quantify the potential demands for domiciliary care as a result of the increased frequency of day surgery.

There appeared to be little difference in the quality of information obtained between the interviews held after 1 week and those held 3 weeks postoperatively. Regarding the difference between the two interview methods (telephone and face-to-face), as expected the use of the telephone seems to be more suitable for completing large numbers of questionnaires, whereas face-to-face interviews give richer, fuller transcripts.

There seemed to be a therapeutic factor embedded within the interview process for some women. For these women the interview was a welcome opportunity to describe their experiences and resolve some of their feelings. When the interview was held within the first week, women had the opportunity to verbalize their feelings and get questions answered. For some, the later interview meant that they spent more time 'stewing' over their feelings and thoughts regarding the experience, therefore the emotions expressed in the later interviews were, in some cases, more intense. In contrast to the findings of other studies[11] there did not seem to be a difference between the experiences of women who were having laparoscopic day surgery for the first time and those who had had previous operations.

Conclusion

This investigation of women's experiences of laparoscopic day surgery using semi-structured interviews identified knowledge gaps and sequelae of a physical, social and emotional nature and for which the participants were not prepared, irrespective of their previous day surgery experience. This study supported the development of a questionnaire which will now be used to determine the outcome of laparoscopic day surgery for a wider population. In the interim this pilot study, although small, generated some clear deficits in the quality of preparation of female laparoscopic patients. This is important as improvements in the preparation of patients can be made by nursing and medical collaborators without a great deal of cost or effort.

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