

WOMEN'S PERSPECTIVES OF PAIN FOLLOWING DAY SURGERY IN AUSTRALIA

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ABSTRACT

Objective:

To investigate the incidence of pain following discharge from reproductive day surgery.

Design:

Cross-sectional descriptive study.

Setting:

A public hospital for women in Melbourne.

Subjects:

315 women participated in phone interviews and 10 in face-to-face interviews.

Main Outcome measure(s):

Self-reports of pain were assessed in relation to age, English and non-English speaking background, prior experience of day surgery, type of surgery, time in recovery, information provision prior to surgery, and access to significant others at home.

Results:

Older women were less likely to report having pain immediately following discharge (regression coefficient = -0.72, 95% CI, 0.58 to 0.88, $p \leq 0.01$), or within 48 hours following discharge (regression coefficient = -0.71, 95% CI, 0.57 to 0.88, $p \leq 0.05$). Women with a prior experience of day surgery were 1.9 times more likely to be in pain within 48 hours following surgery (regression co-efficient 1.88, 95% CI, 1.134 to 3.10, $p \leq 0.05$). Women who understood information were less likely to report that they experienced pain within 48 hours of discharge (regression co-efficient -0.74, 95% CI, 0.24 - 0.95, $p \leq 0.05$).

Conclusions:

Younger patients, those who have had prior experience of day surgery and those who received inadequate information prior to surgery were most likely to report pain. Adequate individual patient assessment will ensure that patients' experience of pain following day surgery is minimised.

INTRODUCTION

Day surgery has increased worldwide with changes in anaesthesia practices, technological advances in medicine (eg laser), a need to improve the cost-effectiveness of health services, and an emphasis on reducing waiting times for elective surgery. By the late 1990s, 60% of elective procedures in the UK and the US and 50% in Canada were conducted as day surgery. In Australia, day surgery as a percentage of all surgical procedures increased significantly from 7% in the 1980s to about 41% in 1997/98 and 55% in 2001 (Millar 1997; Australian Government Department of Health and Aged Care 1999; Mitchell 2000).

Pain is documented as being the most intense and disabling postoperative symptom experienced following day surgery, immediately and after discharge when the patient is expected to resume responsibility for his or her own care (Carr and Thomas 1997). Some patients still report pain a week after surgery (Agboola et al 1999). Health professionals may underestimate patients' pain and prescribe inadequate analgesia (Callesan et al 1998; Watt-Watson et al 2001) leading to hospital readmission (Tham and Koh 2002). Limited research has been conducted in Australia on day surgery (Donoghue et al 1995; Roberts et al 1995); none in relation to the incidence and management of pain immediately or on return home.

While both qualitative and quantitative research studies have been conducted to explore pain associated with surgery and day surgery, a universal day surgery

pain measurement tool does not exist (Coll et al 2004). In quantitative studies, various methods, including a Visual Analogue Scale (VAS), a verbal rating system, and a structured questionnaire, have been used to explore pain in the fields of orthopaedics, urology, ophthalmology, otorhinolaryngology, gynecology and general surgery (Roberts et al 1995; Gagliese et al 2000; Taenzer et al 2000; Jakobsen et al 2003;). Qualitative research has also been conducted on experiences of postoperative pain in relation to ophthalmologic, gastroenterologic, and gynaecologic surgery, with patients in recovery or on the ward (de Beer and Ravalia 2001); immediately before discharge (Burmdayal and MacGowan-Palmer 2002); within two days (Stockdale and Bellman 1998; Gagliese et al 2000;); five days (Roberts et al 1995; Taenzer et al 2000); eight days (Agboola et al 1999; Barthelsson et al 2003); and four weeks following surgery (Callesan et al 1998).

Adequate information has been shown to reduce self-reported pain and its intensity (Linden and Engberg 1996) and to ensure realistic patient expectations with regard to resuming activities postoperatively (Jakobsen et al 2003). Callesan and associates (1998) and Yellen and Davis (2001) and have reported that with increased age of patients, reporting of postoperative pain decreases. In contrast, Gagliese and colleagues (2000) found that while older patients expected less intense pain than younger patients following surgery, there were no statistically significant differences in the experience of pain by age.

Medical anthropological research (Lipton and Marbach 1984) points to cultural background as influencing the communication, expression and responses to pain. However this need not imply homogeneity in response, since pain experience is also affected by life experiences, coping mechanisms, social roles and relationships, and socioeconomic and demographic circumstances such as age, class and gender (Bates 1996). Studying the impact of these factors, as well as culture, on the experience of pain is important to avoid reinforcing cultural stereotypes resulting in sanctioning stoicism.

Gender affects day patients' ability to draw on personal support following surgery. Mitchell (2003) suggests that increased day surgery has led to greater lay caregiver involvement postoperatively. Women fare worse; as patients they cannot or are unable to rely on personal networks in the way that men can. A study in Europe, for example, demonstrated that women who had been under a general anaesthetic resumed household chores (eg. cooking, cleaning) and care giving (eg. childcare) within 24 hours of discharge, and this may have contributed to their pain experience (Jakobsen et al 2003).

Women report high pain levels following day surgery for reproductive health (Coll et al 2004). Previous studies have focused on specific procedures, predominantly laparoscopy (Donoghue et al 1995; de Beer and Ravalia 2001) and laparoscopic sterilisation (Agboola et al 1999; de Beer and Ravalia 2001; Burmdayal and MacGowan-

Palmer 2002; Jakobsen et al 2003), but also termination of pregnancy (Hein et al 2001), tubal ligation (Fraser et al 1989), and breast surgery (Stockdale and Bellman 1998). The exception is a study conducted by Roberts and colleagues (1995) on various gynaecological surgeries which compared the pain experiences of patients with an open versus closed surgery rather than according to procedure. Their focus, on type of surgery and pain levels, overlooked social, demographic and economic characteristics of the patients. The present study, by contrast, examines pain experiences of women in relation to their socio-demographic characteristics; this includes by English or non-English speaking background as a simple but feasible proxy of patients' culture.

METHODS

This descriptive correlational study aimed to explore the experience of pain at, and within 48 hours, of discharge from day surgery, and to investigate patients' management of pain. The objectives were to explore the impact of sociodemographic characteristics (age and cultural background), surgery status (day surgery on a previous occasion, type of surgery), informal support (access to significant others at home), and quality of care (time in recovery, adequate information provision) on women's perceptions of pain and pain management strategies. Ethics approval for the study was granted by the relevant hospital and university committees.

Sample

Study participants were women who had undergone day surgery in an Australian women's public hospital and included both private and public patients. Between August and October 2000, women were recruited on the day of their surgical procedure in the area where they were required to wait for surgery. A small number of women (n=58, 11.4% of all women approached) declined to participate. From 451 women who agreed to participate (about 27% of total planned surgeries), 315 women were followed up (70%; about 19% of total surgeries in the study period). The remaining women were not followed up due to inability to establish contact within 48 hours of surgery (26%), overnight stays due to complications from surgery or additional surgery indicated as a result of the day procedure (2.6%), and withdrawals from the study (1.1%).

Data collection

Quantitative and qualitative methods (telephone survey and in-depth interviews) were used. The questionnaire, comprised of open-ended and closed questions, was piloted with 20 day surgery patients, born in Australia (n=11) and overseas (n=9), prior to being administered. Data were gathered on socioeconomic background, general health (self-rated), information provision and its adequacy prior to day surgery, support and help at home following discharge, and advantages and disadvantages of day surgery. Information was collected on whether women had pain following discharge, management of

pain at home (pain killers, alternative remedies, nothing), whether they were in pain at 48 hours of discharge, and the level of pain. Women who reported being in pain within 48 hours of discharge were asked to indicate its level on a Likert scale (1-5), where one indicated that the patient had little pain and five that the patient had the worst pain imaginable. On average, a telephone interview lasted for about 16 minutes. SPSS software was used for data entry and descriptive, bivariate and multivariate statistical analysis.

To complement and corroborate the survey data, face-to-face in-depth interviews were conducted with ten women recruited through purposive sampling to include different socioeconomic backgrounds and different surgical procedures. Interviews, lasting for about 60 minutes, were conducted at a woman's home or another place of her choice. Interviews explored women's pain management strategies and the experiences of recovery at home. Qualitative data collection and data analysis were conducted concurrently, allowing for the refinement of interview guidelines and cessation of interviews with data saturation.

Data analysis

Thematic analysis was conducted with the use of ATLAS-ti software (Scientific Software Development 1991-2004) using a grounded-theory approach (Strauss and Corbin 1990). This was an iterative process in which all authors read the transcripts and developed the coding book, identifying the themes within individual transcripts and cross-checking them across narratives (Ryan and Bernard 2003). To illustrate women's experiences, we use excerpts from interviews.

FINDINGS

The majority of women in the sample were born in Australia (62.5%). Most women were aged 26-45 years (58.4%, mean age 36.68 years), and had completed secondary schooling (56.8%). Almost 60% were married or in a de facto relationship and about 80% lived with their family. The majority (63.8%) was employed, but almost a quarter was full-time homemakers (23.2%). Nearly three quarters ($n=234$, 74.3%) were public patients, the remainder private ($n=81$, 25.7%).

Overall, 69.5% of the women experienced pain following discharge. There was a statistically significant negative association between age and pain (see table 1): with increased age, women were less likely to report having pain immediately following discharge (regression coefficient = -0.72, 95% CI, 0.58 to 0.88, $p \leq 0.01$), or within 48 hours following discharge (regression coefficient = -0.71, 95% CI, 0.57 to 0.88, $p \leq 0.05$).

Table 1:

Pain following discharge and within 48 hours of hospital discharge and patients' age

Patients' age	Pain following discharge from hospital		Total	Pain within 48 hours of discharge		Total
	Yes	No		Yes	No	
16-25	48 (84.2%)	9 (15.8%)	57 (18.1%)	33 (64.7%)	18 (35.3%)	51 (19.8%)
26-35	74 (74.0%)	26 (26.0%)	100 (31.7%)	52 (59.8%)	35 (40.2%)	87 (33.7%)
36-45	50 (59.5%)	34 (40.5%)	84 (26.7%)	29 (46.8%)	33 (53.2%)	62 (24.0%)
46+	47 (63.5%)	27 (36.5%)	74 (23.5%)	24 (41.4%)	34 (58.6%)	58 (22.5%)
Total	219 (69.5%)	96 (30.5%)	315 (100%)	138 (53.5%)	120 (46.5%)	258 (100%)

No statistically significant differences were observed among women by country of birth or background: Australia-born, English-speaking background overseas-born and non-English speaking background overseas-born women reported similar experiences of pain. Within 48 hours of hospital discharge, 53.5% of women still experienced pain, and again no statistically significant differences were noted. The mean pain score was 2.6 (SD = 1.02), with no significant differences between English speaking and non-English speaking background women (2.7 and 2.5 respectively).

More than half of the respondents (57.1%) had previous day surgery. These women were 1.9 times more likely to report pain within 48 hours of surgery (regression coefficient 1.88, 95% CI, 1.134 - 3.10, $p \leq 0.05$). Previous day surgery however had no impact on experiencing pain immediately following discharge.

Whether a woman had undergone a single procedure or multiple procedures did not significantly alter pain intensity levels. However specific procedures were statistically significant in terms of experience of pain following discharge and within 48 hours of discharge; these were breast biopsy, dilation and curettage combined with laparoscopy, hysteroscopy or pelviscopy, and medical termination of pregnancy. For all surgeries apart from breast surgery, most women reported pain following discharge (see table 2).

Table 2:

Type of operation and pain following discharge and within 48 hours of discharge

Type of operation	Any pain following discharge		Any pain within 48 hours of discharge	
	Yes	No	Yes	No
Dilation and curettage + LHPa	36 (11.4%)	25 (7.9%)	20 (7.8%)	27 (10.5%)
Breast biopsy	7 (2.2%)	7 (2.2%)	5 (1.9%)	3 (1.2%)
Medical termination of pregnancy	29 (9.2%)	17 (5.4%)	13 (9.4%)	25 (9.7%)
Any other procedure	147 (46.7%)	47 (14.9%)	100 (38.8%)	65 (25.2%)
Total	219 (69.5%)	96 (30.5%)	138 (53.5%)	120 (46.5%)

a Note: LHP = laparoscopy, hysteroscopy, pelviscopy

Women who felt that the information provided was easy to understand were less likely to report pain following discharge from hospital (regression co-efficient -0.334, 95% CI, 0.14 - 0.85, $p \leq 0.05$), regardless of type of surgery and within 48 hours of discharge (regression co-efficient -0.74, 95% CI, 0.24 - 0.95, $p \leq 0.05$). However no statistically significant association was found between understanding information and reporting pain levels on the Likert scale.

Most women (83.8%) reported that it was easy to follow the information provided. Private patients were about three times more likely than public patients to find information inadequate ($X^2 = 9.67$; $p \leq 0.01$). Based on information received, most patients expected little pain associated with day surgery, and persistent pain led them seek medical advice and reassurance that their pain was 'normal'.

Bivariate analysis indicated a statistically significant association ($X^2 = 13.25$, $p \leq 0.001$) between time spent in recovery and reporting pain 48 hours following discharge (see table 3). Continuity of nursing care in recovery and rapport with the nurses influenced women's ability to negotiate the length of their stay in recovery, and ultimately pain free recovery at home: *'In recovery, I had two nurses in particular... they were really good with me, let me stay in bed because I wanted to... I only had painkillers at hospital, not at home, not even the next day; I didn't take anything'* (23 years, Australia-born, medical termination of pregnancy).

Table 3:

Time spent in recovery room and pain within 48 hours of discharge

Still in pain	Time spent in the recovery room		Total
	Adequate	Inadequate	
Yes	87 (33.7%)	51 (19.8%)	138 (53.5%)
No	100 (38.8%)	20 (7.8%)	120 (46.5%)
Total	187 (72.5%)	71 (27.5%)	258 (100%)

Most respondents self-managed their pain (80.8%), relying on analgesics (78.5%) or alternative remedies (eg. massage and/or herbal medicine) (2.3%). About a fifth of the sample (19.2%) did nothing to cope with the pain. No statistical differences emerged in factors influencing pain management and in-depth interviews revealed that the pain management depended on a woman's individual preference. There was a statistically significant association ($X^2 = 9.33$, $p \leq 0.05$) between women reporting the purchase of non-prescription analgesics (31.2%) and type of procedure; women with dilation and curettage combined with laparoscopy, pelviscopy or hysteroscopy (50%) were most likely to self-medicate than those undergoing medical termination of pregnancy (38.5%), multiple surgeries (27.5%), and various single procedures (23%) such as cone biopsy, laser treatment, or sterilisation.

In total, 86% of women received help at home. Women who reported pain 48 hours following discharge were about 2.3 times more likely to receive help at home from significant others (regression co-efficient 2.34, 95% CI, 1.26-4.36, $p \leq 0.01$). Women who reported that it was inconvenient for their caregivers to take care of them (1.9%) were more likely to resume their own caregiving roles following discharge ($X^2 = 18.21$; $p \leq 0.001$), with some respondents reporting difficulties in caring for small children following day surgery, and identifying this as a disadvantage of day surgery (see also Barthelsson et al 2003). This was compounded for those who received inadequate help, or for those whose caregivers were unable or reluctant to be available to them following discharge: *'I had to pretend a little bit at home, in front of my little girl, that I was feeling alright ...you know, you have to'* (38 years, Australia-born, multiple procedures).

DISCUSSION

The experiences of women in Australia undergoing reproductive health day surgery resemble those of women internationally: day surgery is not pain-free and there is scope for improving discharge assessment and pain management. The majority (69.5%) reported pain following discharge from day surgery and more than a half were still in pain 48 hours after surgery. The experience of postoperative pain varies greatly however and it may be difficult to predict pain-related experiences of patients (see also Barthelsson et al 2003; Burumdayal and MacGowan-Palmer 2002). Factors that may be relevant include age, previous day surgery experience and information provision prior to surgery.

Our research corroborates other accounts of an inverse relationship between reports of postoperative pain and age (Callesan et al 1998; Yellen and Davis 2001), raising questions about changes in reporting patterns. Burumdayal and colleagues (2002) argued, 'some patients may believe that pain builds character and feel ashamed to admit pain unless questioned in depth or indirectly.' Our findings demonstrate that the pain experience may be worse for women with more than one experience of day surgery than those without, suggesting that patients' previous experience with pain may cloud their postoperative pain perception' (Magnani et al 1989) and 'might well alter their pain threshold' (Burumdayal et al 2002), suggesting the value of demographic and medical data for pain assessment.

Our data also indicate the positive role of information provision on patients' experience of pain (Kratz 1993; Linden and Engberg 1996): women who felt that the information provided was easy to understand were less likely to report having pain following discharge or within 48 hours of discharge from hospital. As reported, private patients were more likely to report that day surgery information was inadequate. It is therefore necessary to improve information provision, particularly given the 'push' of the current Australian government

for people to access private health insurance and seek health care as private rather than public patients (Moorin and Holman 2006).

CONCLUSION

Given the diversity of patients' experiences, individual assessment of each patient is necessary. Information provision needs to be improved for all people undergoing day surgery, particularly private patients. Roberts and colleagues (1995), based on the Australian study on patients' pain-related difficulties almost 10 years ago, recommended that in the immediate postoperative period health professionals or social workers provide routine home visits: this has not eventuated. Our finding that women reported difficulties managing at home, reinforce the continued need for day surgery patients to access services that provide domiciliary and community-based care.

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