

GYNECOLOGY

Patient perceptions of same-day discharge after minimally invasive gynecologic and pelvic reconstructive surgery



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BACKGROUND: Studies have demonstrated that same-day discharge after minimally invasive gynecological and pelvic reconstructive surgery is safe and cost effective and does not result in increased readmissions when compared with inpatient surgery. However, few studies have assessed patient satisfaction with same-day discharge after minimally invasive gynecological and pelvic reconstructive surgery. Increased knowledge of patients' values allows for evidence-based, patient-centered perioperative care and guides perioperative counseling.

OBJECTIVES: The objectives of the study were to evaluate patient perceptions of same-day discharge after minimally invasive gynecological and pelvic reconstructive surgery, to identify barriers to patient acceptance of same-day discharge, and to assess changes in patient acceptance before and after reading an evidence-based statement regarding same-day discharge.

STUDY DESIGN: This is a cross-sectional survey study. All English-speaking new patients presenting to a subspecialty, benign gynecological surgery clinic, including female pelvic medicine and reconstructive surgery and minimally invasive gynecologic surgery providers, were invited to participate. The survey included an evidence-based statement about same-day discharge. Participants were asked to rate their comfort with same-day discharge before and after reading this statement.

RESULTS: Ninety-six percent of women (208 of 216) who were approached completed the study. The majority rated their overall health and mental or emotional health as good or very good (61.1% and 64.9%). Most (82.7%) completed at least some college. Most (86.1%) reported having at least 1 prior surgery and 68.8% reported same-day discharge after a prior surgery: 74.8% rated their prior experience with same-day discharge favorably. The majority of respondents (86.1%)

reported they would feel comfortable with same-day discharge. The most important cited reasons for going home the same day as surgery included sleeping in own bed (73.4%) and being with family (61.8%). The most important cited reasons for staying overnight in the hospital included anticipated better pain control (58.9%) and decreased overall complications (43.0%). Forty percent believed it would be easier to take care of a catheter if needed in the hospital. Patients who reported living alone and those 65 years old and older were less likely to feel comfortable with same-day discharge (odds ratio, 0.39, 95% confidence interval, 0.17–0.91). Of the 29 patients who reported at baseline that they would not feel comfortable with same-day discharge, most (65.5%) changed their minds after reading an evidence-based statement about same-day discharge. When asked if their surgeon recommended it, almost all patients (96.1%) reported they would feel comfortable with same-day discharge.

CONCLUSION: Among new patients presenting to a subspecialty, benign gynecologic surgery clinic including female pelvic medicine and reconstructive surgery and minimally invasive gynecological surgery providers, most perceive same-day discharge favorably following minimally invasive gynecological and pelvic reconstructive surgery. Women who live alone and those aged 65 years and older feel less comfortable with same-day discharge. While an evidence-based statement regarding the benefits and safety of same-day discharge further improves patient acceptance, direct surgeon counseling may be more important to establish discharge goals.

Key words: enhanced recovery, fast-track surgery, minimally invasive sacrocolpopexy, patient satisfaction

The last several decades have witnessed innumerable advances in gynecological surgical technology and technique with the advent of laparoscopy and robotics. Minimally invasive approaches to hysterectomy are now widely recognized as the preferred

routes, based on their well-documented advantages over abdominal hysterectomy, including shortened hospitalization and postoperative recovery time.¹

Concurrent with the rise of minimally invasive hysterectomy, the number of patients being discharged home the same day as gynecological surgery has dramatically increased.^{2–4} Same-day discharge after minimally invasive hysterectomy increased from 11.3% in 2000 to 46.0% in 2010 ($P < .01$),⁴ and up to 70% were discharged the same day in 2014.³ More recent estimates extrapolate that 100,000–200,000 hysterectomies with same-day discharge are performed in the United States per year.²

Numerous studies have demonstrated that same-day discharge after minimally invasive gynecological and pelvic reconstructive surgery is safe and cost effective and does not result in increased postoperative complications when compared with inpatient hysterectomy.^{4–8} The largest analysis by Schiavone et al⁴ investigated more than 120,000 patients undergoing laparoscopic hysterectomy, revealing a readmission rate of 4.0% for those discharged on the same day as surgery, compared with 3.6% for those discharged the day following surgery. However, few studies have assessed patient perceptions of, and experiences

Cite this article as: Evans S, Myers EM, Vilasagar S. Patient perceptions of same-day discharge after minimally invasive gynecologic and pelvic reconstructive surgery. *Am J Obstet Gynecol* 2019;221:621.e1–7.

0002-9378/\$36.00

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<https://doi.org/10.1016/j.ajog.2019.06.046>

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AJOG at a Glance

Why was this study conducted?

This study was conducted to further evaluate baseline patient perceptions of same-day discharge following minimally invasive gynecological and pelvic reconstructive surgery.

Key findings

Most patients perceive same-day discharge favorably following minimally invasive gynecological and pelvic reconstructive surgery. Women who live alone and those aged 65 years and older feel less comfortable with same-day discharge. While providing patients with an evidence-based statement about the safety of same-day discharge improves patient acceptance, direct surgeon counseling is likely more important to establish discharge goals.

What does this add to what is known?

This study provides insight into patients' expectations, priorities, and attitudes toward same-day discharge after minimally invasive gynecological and pelvic reconstructive surgery. It identifies areas in which preoperative counseling can focus to improve patient satisfaction with same-day discharge after surgery.

with, same-day discharge after minimally invasive gynecologic and pelvic reconstructive surgery.

One study prospectively followed 105 patients discharged the same day after laparoscopic hysterectomy. The primary outcome was pain scores; however, the authors also reported that 102 (97%) were satisfied with the whole procedure at their 4 week postoperative visit and would recommend this operation with same-day discharge to other patients.⁹ Another study investigating length of stay after implementing a same-day discharge protocol for patients undergoing laparoscopic hysterectomy found no difference in mean satisfaction scores 6 weeks postoperatively; same-day discharge patients rated their satisfaction on average as 4.8 of 5 compared to 4.8 of 5 for patients discharged the day following surgery and 4 of 5 for patients discharged 2 or more days after surgery.¹⁰

While the proportion of patients being discharged the same day as surgery has increased nationwide, many gynecological surgeons continue to discharge patients the day after minimally invasive gynecological and pelvic reconstructive surgery. Prior to absolute adoption of same-day discharge, it is important to better understand patients' attitudes

towards this practice. Increased knowledge of patients' values allows for evidence-based, patient-centered perioperative care. This patient-centered counseling facilitates perioperative expectation setting while directly addressing patient concerns.

Materials and Methods

After institutional review board approval, all English-speaking new patients presenting to our ambulatory gynecological surgery clinic were invited to participate in this observational cross-sectional study. Approached patients were presenting for initial consultation with board-certified female pelvic medicine and reconstructive surgery or minimally invasive gynecologic surgery providers.

As a subspecialty gynecological surgery clinic within a large academic center, patients are self-referred or referred from other providers, including general obstetrician/gynecologists, urologists, and primary care physicians, seeking further evaluation and management of benign gynecological conditions. Exclusion criteria included patients younger than 18 years old, non-English speakers, those unable to provide informed consent, and those unable to participate secondary to severe hearing or visual impairment and/or illiteracy. Patients

were enrolled from March 2018 through April 2018. All participants gave informed consent.

A 19 question survey was distributed to new patients by front-desk personnel and was completed by participants in the waiting room prior to seeing a provider (see [Appendix A](#) for complete questionnaire). The survey consisted of 8 demographic questions, including questions related to patients' perception of their overall physical health and their mental or emotional health as well as details about their past medical history. They were also asked to report who, if anyone, lives at home with them. These were followed by questions specific to prior surgical experiences and prior experiences with same-day discharge after surgery. Respondents were asked to rate prior surgical experiences on a scale of 0 (worst possible experience) to 10 (best possible experience).

This manner of rating an overall surgical experience is modeled after the validated Consumer Assessment of Healthcare Providers and Systems surgical care survey (S-CAHPS). S-CAHPS is a survey originally designed and validated by the Centers for Medicare and Medicaid partnered with the Agency for Healthcare Research and Quality to allow public reporting of patient satisfaction at the hospital level. A score of 7 or greater is considered a favorable response on this survey.¹¹

Additionally, participants were asked to rate their comfort with same-day discharge: "if you needed to have minimally invasive gynecological surgery, would you feel comfortable going home the same day following your surgery?" Minimally invasive gynecological surgery was defined for participants as "vaginal surgery, or laparoscopic or robotic surgery with small incisions on your abdomen. This could include a hysterectomy (removal of the uterus)."

At the end of the survey, patients were provided a brief evidence-based statement on the benefits and safety of same-day discharge. The statement read as follows: "Going home the same day following minimally invasive gynecological surgery has been shown to be safe and cost effective. It does not

increase the risk of postoperative complications, readmission to the hospital, or emergency room visits after surgery. Patients discharged home the same day following minimally invasive gynecological surgery report they are satisfied and would recommend this to others.” Respondents were again asked to rate their comfort with same-day discharge after reading this statement, and their responses were compared with their ratings prior to reading the statement.

We estimated a 40% prevalence of comfort with same-day discharge at baseline in our population. Retrospective review of institutional data revealed that, when given the option, approximately 40% of patients elect to go home the same day as minimally invasive gynecological and pelvic reconstructive surgery. We calculated a sample size to accurately estimate the baseline prevalence of comfort with same-day discharge in our population. Using an alpha error of 0.05 and a confidence interval of 95%, a sample size of 92 patients was calculated. To account for an expected 15–20% rate of refusal to participate, goal recruitment was 110 patients.^{12,13}

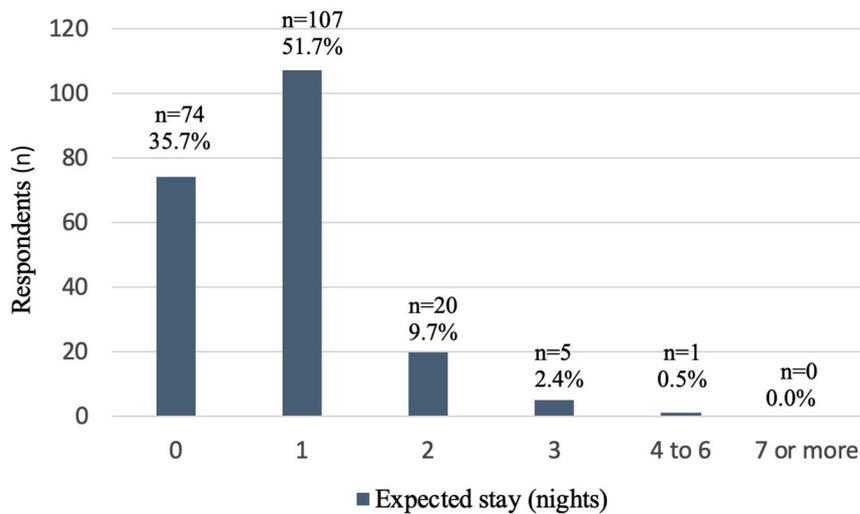
Study data from paper surveys were entered into, and managed, using REDCap electronic data capture tools hosted at Atrium Health.¹⁴ Descriptive statistics were used to characterize the sample. The prevalence of baseline comfort with same-day discharge was calculated for the entire population and then by each demographic variable. Multivariable logistic regression analysis was performed for variables that reached significance to the level of $P < .05$ after univariable analysis. Because age and live-alone were the only 2 variables that were significant in the univariate analysis, we ran a multivariable logistic regression analysis that included only these 2 independent variables.

Notably, patients were asked to select their age from the following age-range options as modeled after the S-CAHPS survey: 18–24 years, 25–34 years, 35–44 years, 45–54 years, 55–64 years, 65–74 years, and 75 years or older. Therefore, age was analyzed as a

TABLE 1
Demographics of study subjects

Characteristics	n (%)
Age, y	
18–34	38 (18.3)
35–64	108 (51.9)
65–74	35 (16.8)
≥75	27 (13.0)
Education	
Eighth grade or less	4 (1.9)
Some high school	6 (2.9)
High school graduate	26 (12.5)
Some college	85 (40.9)
Four year college graduate	46 (22.1)
More than 4 years of college	41 (19.7)
	0 (0.0)
Race	
White	161 (77.4)
African American	32 (15.4)
Hispanic or Latino	9 (4.3)
Other	10 (4.8)
Cohabitants	
No one (living alone)	36 (17.3)
Spouse	128 (61.5)
Children	79 (38.0)
Other family	25 (12.0)
Other nonfamily	13 (6.3)
Chronic pelvic pain	
Yes, treated	24 (11.5)
Yes, not treated	14 (6.7)
No	170 (81.7)
Overall health	
Excellent	32 (15.4)
Very good	54 (26.0)
Good	73 (35.1)
Fair	46 (22.1)
Poor	3 (1.4)
Mental or emotional health	
Excellent	40 (19.2)
Very good	71 (34.1)
Good	64 (30.8)
Fair	28 (13.5)
Poor	5 (2.4)

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FIGURE
Expected hospital stay

Number of nights in the hospital patients reported they would expect to stay if they needed to have minimally invasive gynecological or pelvic reconstructive surgery.

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categorical variable. Categorical variables were expressed as counts and percentages. Continuous variables were expressed as means and standard deviations. χ^2 tests, Fisher exact tests, and odds ratios were used to test for associations.

Results

A total of 216 patients were invited to participate in the study. Ninety-six percent (n = 208) completed the survey; 8 declined to participate. None were excluded. All participants were female. Among women who chose to participate in the study, 38 (18.3%) were younger than 35 years old, 62 (29.8%) were 35 to 64 years old, and 27 (13.0%) were 65 years or older. Most participants (77.4%) were white and reported completing at least some college (82.7%). Thirty-six (17.3%) reported living alone, while the remainder reporting living with a spouse, children, or other family or nonfamily members at home. Eighteen percent reported a diagnosis of chronic pelvic pain. The majority (61.1%) rated their overall health as good or very good, and most (64.9%) rated their mental or emotional health as good or very good (Table 1).

The majority of patients (n = 179, 86.1%) reported having at least 1 prior surgery and greater than half had been discharged home the same day as a prior surgery (n = 143, 68.8%). Most (n = 107, 74.8%) rated this prior experience with same-day discharge favorably, that is, 7 or greater on a scale from 0 to 10 as predefined by S-CAHPS.¹¹ One hundred forty-three of respondents (68.8%) reported knowing a friend or family member who had surgery with same-day discharge, and most (n = 105, 73.4%) rated this experience favorably.

When asked how many nights they would expect to stay in the hospital if they needed to have minimally invasive gynecological surgery, 74 respondents (35.7%) said they would expect to stay 0 nights in the hospital. About half reported they would expect to be admitted overnight (51.7%), and 12.1% reported they would anticipate staying 2 or more nights in the hospital (Figure). Despite this, 86.1% of respondents reported at baseline that they would feel comfortable going home the same day if they needed to have minimally invasive gynecological surgery.

The most frequently reported important reasons for going home included the ability to sleep in their

own bed, to be with family, and for financial concerns. The most frequently reported important reasons for staying overnight in the hospital included the perception that their pain would be better controlled, that they would have decreased overall complications, and that it would be easier to take care of a catheter if they needed one (Table 2).

Ninety percent of patients younger than 65 years old reported they would feel comfortable going home the same day as surgery compared with 75% of patients 65 years or older ($P < .01$). Eighty-eight percent of patients who said they live with someone else at home reported they would feel comfortable going home the same day as surgery compared with 75% of patients who reported living alone ($P = .04$). There were no other significant differences in demographic variables. After multivariate analysis, those patients 65 years or older, independent of whether or not they live alone, reported they would feel less comfortable with same-day discharge (adjusted odds ratio, 0.39, 95% confidence interval, 0.17–0.91).

Of the 29 patients who initially reported they would not feel comfortable going home the same day as surgery, the majority (65.5%) changed their minds after reading the evidence-based statement regarding the benefits and safety of same-day discharge. Regardless of their responses to the statement, almost all patients (96.1%) reported they would feel comfortable with same-day discharge if their surgeon recommended it (Table 3).

Comment

Principal findings

In our ambulatory population of women referred for consultation with female pelvic medicine and reconstructive surgery or minimally invasive gynecologic surgery providers within a large academic center, greater than 80% of new patients reported they would feel comfortable being discharged home the same day if they needed to have minimally invasive gynecological or pelvic reconstructive surgery.

Results

Despite the high prevalence of baseline comfort with same-day discharge, only 35.7% of patients presenting to a subspecialty, benign gynecological surgery clinic expected to be discharged home the same day as surgery, reflecting a gap in patient perceptions and current practice. Patients 65 years or older and those who live alone were less likely to report feeling comfortable with same-day discharge.

Providing patients with a brief evidence-based statement about same-day discharge significantly improved patient-reported comfort with same-day discharge from 86.1% to 93.7% ($P = .037$). Notably, patients were most likely to report they would feel comfortable with same-day discharge if their surgeon specifically recommended it, emphasizing patients' prioritization of the patient-surgeon relationship and the importance of surgeon-initiated, expectation setting prior to surgery.

Clinical implications

Our results suggest that same-day discharge protocols can likely be implemented in this patient population without sacrificing patient satisfaction. Patients who live alone and those 65 years old and older may benefit from unique, individualized preoperative counseling prior to discharging them the same day as surgery.

Our findings reveal that this counseling should focus on postoperative pain management strategies and education about catheter care so that patients feel empowered and prepared for this potential postoperative need. They can also be reassured that studies evaluating same-day discharge after minimally invasive gynecological and pelvic reconstructive surgery have not shown an increase in overall complication rates.⁴⁻⁸ We found that a brief evidence-based statement with this information improved patient-reported acceptance of same-day discharge. This printed statement could potentially be incorporated into standardized patient information distributed preoperatively.

We found that the prevalence of patient-reported comfort with same-day

TABLE 2
Patient perceptions

Survey questions	Response	n (%)
If you needed to have a minimally invasive gynecological surgery, would you feel comfortable going home the same day as your surgery?	Yes, definitely	97 (46.6)
	Yes, somewhat	82 (39.4)
	No	29 (13.9)
What do you think are the most important reasons to go home the same day as a minimally invasive gynecological surgery?	Being with family	128 (61.8)
	Sleeping in own bed	152 (73.4)
	Eating own food	85 (41.1)
	Decreased risk of infection	79 (38.2)
	Decreased risk of blood clot	22 (10.6)
	Better pain control	13 (6.3)
	Less nausea and vomiting	7 (3.4)
	Easier to go to the bathroom	50 (24.2)
	Easier to take care of catheter (if needed)	12 (5.8)
	Less financial burden	95 (45.9)
	Decreased risk of complications	19 (9.2)
	No perceived benefits	14 (6.8)
	Other	5 (2.4)
What do you think are the most important reasons to stay in the hospital the night after a minimally invasive gynecological surgery?	Being with family	47 (22.7)
	Sleeping in own bed	1 (0.5)
	Eating own food	1 (0.5)
	Decreased risk of infection	55 (26.6)
	Decreased risk of blood clot	62 (30.0)
	Better pain control	122 (58.9)
	Less nausea and vomiting	23 (11.1)
	Easier to go to the bathroom	13 (6.3)
	Easier to take care of catheter (if needed)	83 (40.1)
	Less financial burden	4 (1.9)
	Decreased risk of complications	89 (43.0)
	No perceived benefits	23 (11.1)
	Other	9 (4.3)

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discharge was more than double our estimated 40%, reflecting the variety of biases, including surgeon counseling, ultimately contributing to the decision to admit patients after surgery in the absence of an existing same-day

discharge protocol. With pervasive implementation of enhanced recovery perioperative protocols, the growing emphasis on fiscally responsible health care, and patient satisfaction-driven reimbursement paradigms, it proves

TABLE 3
Patient-reported comfort

Variables	Would you feel comfortable going home the same day as minimally invasive gynecological surgery?	
	Yes, n (%)	No, n (%)
Before reading statement	179 (86.1)	29 (13.9)
After reading statement	193 (93.7)	13 (6.3)
"If your surgeon recommended it"	198 (96.1)	8 (3.9)

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both timely and imperative to better understand our patients' baseline attitudes about same-day discharge after surgery.

Patient satisfaction is increasingly emphasized in all aspects of medicine, including financial penalties for underperformance on patient satisfaction measures.¹¹ Our findings indicate that gynecological surgeons can likely incorporate same-day discharge into their practices without detriment to patient satisfaction, taking care to discuss specific expectations with patients who live alone or are older.

Strengths and limitations

Our study has several limitations. One limitation is that it represents a single-center experience of a relatively small number of patients, excluding non-English speakers. We therefore are unable to account for a difference by race or ethnicity. Our study involves patients seeking elective, subspecialty, benign gynecological surgery. Our findings may not be generalizable to other gynecological surgery populations, such as gynecological oncology. Our homogenous patient population, while representative of our actual clinical practice, does limit extrapolation of our results. The majority of respondents were well educated, implying access to resources that could influence perceptions of same-day discharge prior to clinical consultation. Despite our relatively small sample size, our high survey response rate of 96% suggests our results accurately reflect perceptions of our patient population.

Additionally, we exceeded our sample size estimate. While our study was not powered to detect a difference in comfort before vs after reading the evidence-based statement we provided, we found a significant improvement ($P < .05$), suggesting the absence of type 2 error and an adequately powered study. To our knowledge, this study is the largest investigating patient perceptions of same-day discharge in the gynecological surgery population.

Unique to other studies, we did include patients with a self-reported diagnosis of chronic pelvic pain. We found no difference in patient-reported comfort with same-day discharge in patients with or without chronic pelvic pain, either treated or untreated. Including these patients makes our results more generalizable for minimally invasive gynecological surgical practices caring for women who have chronic pelvic pain.

Furthermore, our survey was completed by all new patients presenting to our practice, prior to respondents having had surgery. We therefore cannot extrapolate how same-day discharge affects patient satisfaction scores in actuality. Our goal was to ascertain baseline patient perceptions of same-day discharge prior to influence from providers. We believe this information provides an unbiased insight into patients' attitudes about same-day discharge and truly reveals how patients feel about going home the same day as surgery.

As a nonvalidated survey, our findings are subject to information bias. The majority of participants reported prior

positive experiences with same-day discharge, either personally or through friends and family members, which may have favorably biased baseline perceptions. We did not abstract further information about these prior surgical experiences, but they most likely comprise conventionally outpatient procedures such as hysteroscopy, cystoscopy, orthopedic arthroscopies, or endoscopy/colonoscopies performed in outpatient surgery centers.

Additionally, patients presenting to a subspecialty clinic may be more likely to have had surgery in the past, given that a significant proportion of our referrals are for prior complex surgical and medical histories. We suspect the frequency of reported exposure to same-day discharge is comparable with other patient populations while acknowledging this limitation in study design. Furthermore, prior experience with same-day discharge had no effect on baseline reported comfort after univariate analysis.

Research implications

Future studies should focus on how implementation of same-day discharge protocols affects patient satisfaction. Future studies should further elucidate the impact of education level and other socioeconomic factors on patient preparedness for surgery and comfort with same-day discharge.

Additionally, future studies should investigate how targeted counseling to optimize perioperative preparedness specifically for patients older than 65 years and those living alone has an impact on satisfaction after surgery. Lastly, future studies are needed to further describe the most effective method to deliver this targeted perioperative counseling.

Conclusions

In summary, most patients favorably perceive the idea of same-day discharge following minimally invasive gynecological and pelvic reconstructive surgery. Age 65 years and older and living alone are specific barriers to patient acceptance of same-day discharge. These findings can be incorporated into preoperative

counseling to better prepare our patients and identify which patients may require more targeted counseling to be comfortable with these discharge goals. We anticipate our findings will allow us to more effectively establish perioperative expectations, address patient concerns, and empower our patients to optimize their gynecological and pelvic reconstructive surgical experience. ■

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Received April 2, 2019; revised June 13, 2019; accepted June 20, 2019.

The authors report no conflict of interest.

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