

2015

Randomized clinical trial comparing perioperative care for breast cancer patients at a patient hotel versus a general surgical ward

Madleen Anna Camilla Huzell

The Department of Surgery, Danderyds University Hospital, madleen.huzell@gmail.com

Johan Frisack

Indikator – Institutet för kvalitetsindikatorer, johan.frisack@indikator.org

Kristina Dalberg

The Department of Surgery, Danderyds University Hospital, kristina.dahlberg@ds.se

Follow this and additional works at: <https://pxjournal.org/journal>

 Part of the [Health and Medical Administration Commons](#), [Health Policy Commons](#), [Health Services Administration Commons](#), [Health Services Research Commons](#), and the [Surgery Commons](#)

Recommended Citation

Huzell, Madleen Anna Camilla; Frisack, Johan; and Dalberg, Kristina (2015) "Randomized clinical trial comparing perioperative care for breast cancer patients at a patient hotel versus a general surgical ward," *Patient Experience Journal*: Vol. 2 : Iss. 2 , Article 19.

Available at: <https://pxjournal.org/journal/vol2/iss2/19>

This Article is brought to you for free and open access by Patient Experience Journal. It has been accepted for inclusion in Patient Experience Journal by an authorized editor of Patient Experience Journal.

Randomized clinical trial comparing perioperative care for breast cancer patients at a patient hotel versus a general surgical ward

Cover Page Footnote

Acknowledgements: The application to the local ethics committee was funded by the Swedish Breast Cancer Society. The source of funding had no involvement in the study design, data collection, analysis and interpretation, manuscript writing, or the decision to submit the manuscript for publication. The authors acknowledge Dr A. Ljung Constantinidou, Karolinska University Hospital Stockholm, for helping with the initial data collection of patient characteristics. Disclosure: The authors declare no conflict of interest.

Randomized clinical trial comparing perioperative care for breast cancer patients at a patient hotel versus a general surgical ward

Madleen Huzell, *Danderyds University Hospital, madleen.huzell@sodersjukhuset.se*

Johan Frisack, *Indikator, johan.frisack@indikator.org*

Kristina Dalberg, *Danderyds University Hospital, kristina.dahlberg@ds.se*

Abstract

Breast cancer is the most frequent cancer among women in Europe and the US. The aim of this study was to assess whether perioperative care, for breast cancer patients, provided at a patient hotel could be an alternative to the conventional care in an ordinary surgical ward. The study focuses solely on the patients' experience of the provided care with a primary outcome that perioperative care at the patient hotel would be valued better than care in a general ward. Prospective, randomized single centre study. Between 2010 and 2012 a total of 151 patients < 80 years and without severe comorbidities were included in the trial, whereof 76 patients were randomised to the ward group and 75 patients to the hotel group. Five patients were excluded from each group. The validated IN2005-E questionnaire was used to evaluate the patients' experiences of the care. The response rate was high with 65 patients answering the IN2005-E in each group. No difference could be found between the two groups regarding patient characteristics, type of surgery or tumour characteristics. The patients generally perceived the quality of the provided care as high. However, in the hotel group there was a better experience of care regarding issues such as coordination, privacy, some aspects of medical information, availability and the courtesy of the nurses. For selected patients, perioperative care at a patient hotel is an appreciated alternative to care at a surgical ward.

Keywords

Patient experience, patient hotel, breast cancer, surgery, perioperative care, ppe-15/in2005-e

Introduction

Breast cancer is the most frequent cancer among women in Europe and the United States. In Sweden approximately 8500 women are diagnosed every year¹. At the Department of Surgery at Danderyds University Hospital alone, more than 300 women undergo surgery each year. Traditionally in Sweden, women who are operated for breast cancer receive perioperative care at a general surgical ward, where the patients share a room with other patients that are being treated for a variety of surgical illnesses. In comparison, the breast cancer patient is usually relatively healthy and does therefore normally not require the same extent of medical monitoring as a patient receiving care for a more severe surgical illness. Hence, patients without severe comorbidities, who are undergoing surgery for breast cancer ought to be suitable candidates for perioperative care in an environment, where the medical monitoring might be lesser compared to that in a general surgical ward.

At Danderyds University Hospital, a patient hotel is located in the immediate vicinity to the main hospital

site. The hotel offers 74 individual rooms, each with private bathroom, and its facilities has since long been used for the post delivery care of mothers and their newborns. All rooms are equipped with a call button, but there is no other medical equipment on site. Nurses are always available and in the event of an emergency, doctors can be called to the hotel and the patient can rapidly be transferred to a general surgical ward. Furthermore, relatives/friends have the possibility to visit at any time, or even to stay the night.

Few studies compare care at a patient hotel and at a general ward. The definition of what constitutes a patient hotel varies between different studies. In 2009, the Knowledge Centre in Norway summarized the knowledge of effect of patient hotels compared to other types of accommodations². Their definition of a patient hotel was "*a temporary, voluntary accommodation where the patient has greater freedom to visit with relatives than in a regular hospital ward. The use of patient hotels requires a connection to a stay in hospital. [...] The regulation of patient hotels [still] permits some treatment*". Five thousand and sixty-one references were identified, of which eight articles were deemed as relevant. The studies had different outcomes

(e.g. readmission, length of stay, quality of life and different types of costs). Most of the studies included few patients and all of them had a high risk of bias. No conclusions could be drawn on the effect of patient hotels, neither for hospitals nor for patients. Interestingly, no study reported effect on patient experience.

The following aspects of healthcare are generally considered as the most important when patients evaluate their experiences of provided care - a fast access to reliable health advice, the best and most effective treatment delivered by trusted professionals, participation in decisions and respect for preferences (including privacy), clear and comprehensible information, emotional support, empathy and respect, attention to physical needs, involvement of family and continuity³⁻⁷. However, there are few studies that focus solely on the perioperative period and which factors during this period that may impact how patients rate their experiences. To summarize the findings of the available studies, aspects such as courtesy, pain management, information, education, privacy, communication, coordination of care, emotional support and continuity of care, are found to be of importance during the perioperative period⁸⁻¹⁰.

Many of the aspects that are of importance to the patients during the perioperative period ought to be the same at the patient hotel as well as at the general ward. However, the setting in the patient hotel enables considerably more privacy for the patient. Hence, a study was undertaken to test the hypothesis that perioperative care at the patient hotel would receive a higher number of patients reporting a high perceived quality of care as measured by the IN2005-E questionnaire. The present randomized study focuses solely on the patients' experiences of the provided care.

Patients and methods

Study design, outcome and sample size

The study was designed as a prospective randomized controlled trial, carried out at a single centre (Danderyds University Hospital). The protocol was approved by the Ethical committee for human studies, Karolinska Institute, Stockholm, Sweden.

The main inclusion criteria in the study were women with a breast tumour, who were to undergo surgical treatment in order to remove a known cancer or to exclude cancerous changes in a diagnosed tumour. Excluded from the study were patients with insulin dependent diabetes, severe impairment of mobility, a known coagulopathy, cancer surgery with a coherent primary reconstruction, age > 80 years, severe cardiac

illness and an inability to understand Swedish or a mental incapacity.

Eligible patients were invited to participate in the study by the surgeon and/or a nurse with special education within the field of breast cancer patients. Oral and written informed consent was obtained from all the patients as stated by the guidelines of the Declaration of Helsinki. The patients were then randomized to receive pre- and postoperative care either in a general surgical ward or at a patient hotel by using a sealed envelope method. Physicians and staff were not blinded in the study.

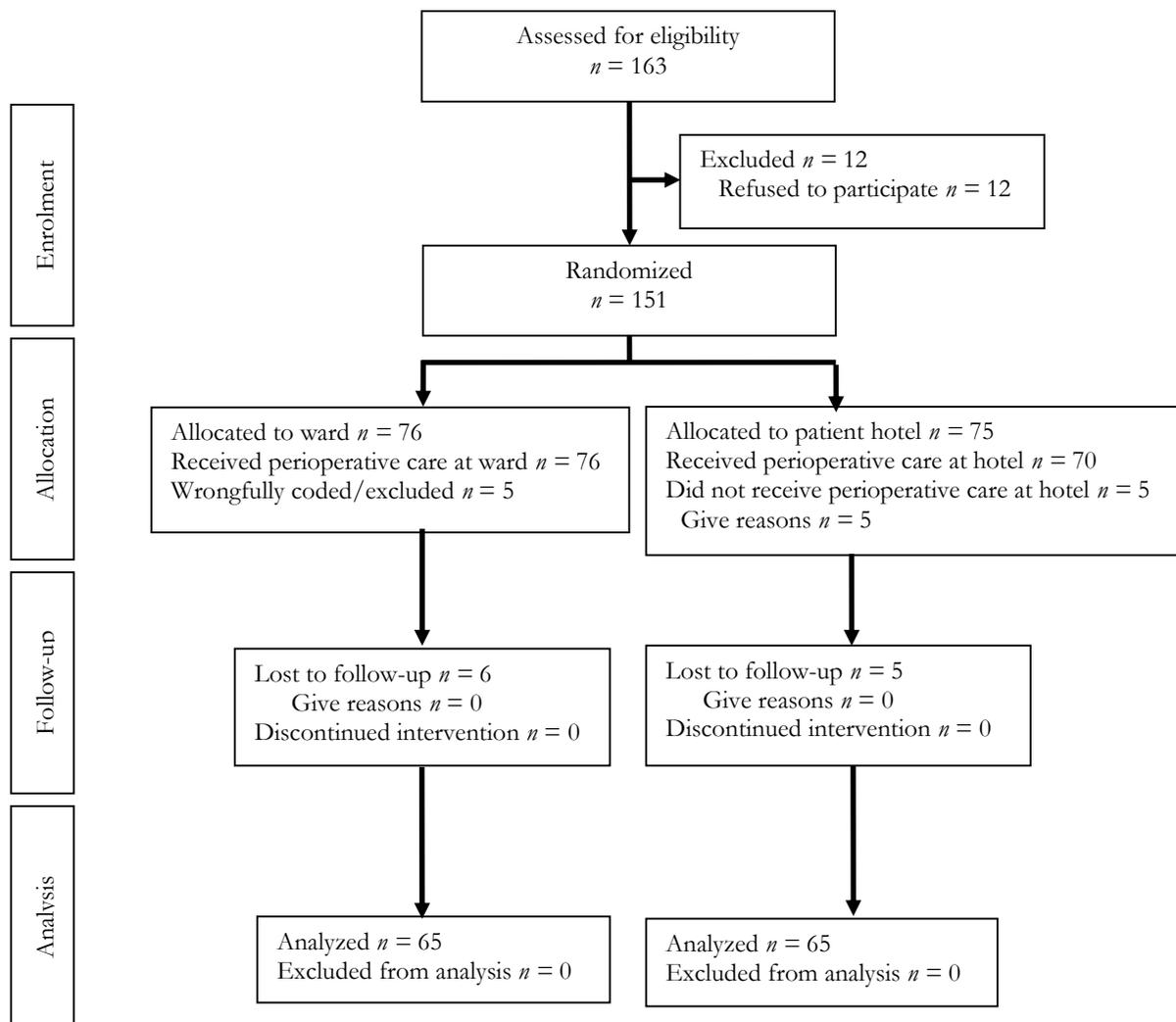
Between 2010 and 2012 a total of 151 patients were included in the trial, whereof 76 patients were randomized to the ward group and 75 patients to the hotel group. Due to human error, the first five patients in the ward group were not registered in a correct manner and thereby excluded from further analysis. The ward group finally consisted of 71 patients. Five patients were excluded from the hotel group because of postoperative circumstances, which required attention at a general surgical ward instead of at the hotel. Two patients were excluded due to strict medical complications, whereof one patient suffered from cardiac arrhythmia when the anesthesia was induced and one patient had a significant postoperative bleeding. Two of the remaining patients were excluded since they were operated late in the afternoon, whereby the patient hotel, due to routines, was not able to check them in after surgery. The final patient in the exclusion cohort simply refused to go back to the hotel after having surgery. The hotel group finally consisted of 70 patients. A total of 12 patients declined to participate in the study mainly due to reasons such as difficulties filling out questionnaires and a general reluctance to participate in studies. (*Fig. 1*)

With a primary outcome that perioperative care at the hotel would be valued 15-20% higher in patient experience score compared to care in a general ward, a power analysis, two-sided with $\alpha = 0.05$, indicated that a sample size of 150 was needed to attain a power of 80%.

The patient hotel

The patient hotel is located in close proximity to the main hospital site and nurses are always available. Regarding pain relief, intravenous medications cannot be administered at the hotel, but intramuscular and subcutaneous injections can be provided. By distributing oral pain relievers for the following 24 hours in a container by the patient's bed, these drugs are immediately available to the patient when needed. The nurses at the hotel managed postoperative drainages.

Figure 1. CONSORT diagram for the trial



Perioperative procedure

On the morning of surgery the patient arrived at the ward or the hotel, where a nurse admitted her. With the arrival of the surgeon the patient was prepared for surgery and transported to the operating theatre. There were a total of four different surgeons operating on patients both in the ward and hotel group. After surgery, the patient was observed in the recovery area for approximately four hours, before being brought back to the ward or hotel, respectively.

The IN2005-E

To evaluate the patients' experiences of the provided care at the ward and the hotel, respectively, the Swedish validated version of the adult inpatient survey of 2005 (IN2005-E) was used. The IN2005-E is a quantitative

questionnaire, based upon the Picker Adult Inpatient Questionnaire and the Picker Patient Experience Questionnaire (PPE-15), and is commonly used to examine specific aspects of patient experience¹¹⁻¹³. The IN2005-E is comprised by questions that focus on whether a specific event occurred or not, rather than letting the patients rate their care in terms of how satisfied they are. By this design the influence of outside factors are reduced.^{4, 12, 14, 15} Furthermore, a questionnaire with a design like this provides results that are both interpretable and more importantly, results that can be acted upon^{3, 14}. The conceptual basis and design of the original questionnaire have been described in detail elsewhere.^{13, 16, 17}

The survey covers seven dimensions of care: information and education, coordination of care,

physical comfort, emotional support, respect for patients' preferences, involvement of family and friends, and continuity and transition¹¹. The specific Swedish version of the IN2005-E, which was used in this study, contained 60 questions, whereof a total of 40 standard questions make up the dimensions mentioned above. From these 40 items, 15 "core questions" (PPE-15) have been validated for being able to prove and pinpoint typical "problems" within different aspects of patient care¹². These 15 items have a high degree of face validity, reliability and internal reliability consistency and are ideal to use for international comparisons of patient experiences¹². Consequently, the PPE-15 is also applicable to use for comparison of patient experiences between two defined settings, such as a general surgical ward and a patient hotel. However, all 40 standard questions should be analyzed if the purpose is to improve the quality of care¹². Furthermore, another dimension was added with questions concerning the patients' overall evaluation of the provided care. Complementary questions regarding the patients' background (e.g. level of education, gender, self-reported quality of health etc.) and closing with final questions, where the patients could more freely comment upon if there was something that had been exceptionally bad or good were added. The questionnaire was further modified by including questions regarding if the patient had been attended to at the ward or at the hotel, if there were children under the age of 20 years living in the household and the marital status of the patient. Thus, the final questionnaire consisted of 65 questions.

Each of the items is usually coded as a dichotomous "problem score", indicating a presence or absence of a problem^{11, 12}. The different answers to each question are weighted, yielding a weighted patient experience index. By applying this strategy, the index variation between groups will tend to be quite small. An alternative dichotomous approach is to analyze the results by comparing the number of patients that has reported a "high perceived quality" of care (i.e. usually the most positive answer) between the groups. Hence, by comparing the number of patients that has chosen a specific answer to each question, the variation between the ward and hotel group will increase, which results in a better basis for analyzing differences between the groups¹⁸. The "high perceived quality" answers were compared between the groups as well as within the groups. Regarding the comparison within the groups, the "high perceived quality" answer was compared to the "other" answers, which included a bulk of answers such as "yes - to some extent, yes - sometimes, no, I did not dare to ask etc.", but excluded answers such as "not relevant, I had no need to ask etc." (i.e. "non-answers"). By doing so, it is important to notice that the number of respondents relevant for analysis will vary from question

to question. Definitions of "high perceived quality" can be seen in *Table 3*.

Upon discharge from the ward or hotel, the patient was provided with the IN2005-E questionnaire, which was filled out before the patient left the facility. The filled out form was sealed in an envelope by the patient herself and thereafter sent to a separate institute (Indikator) for further analysis. Indikator is responsible for the majority of the statistical analysis of patient surveys in Sweden¹⁹.

The SF-36

How patients rate their own quality of life may influence the results of a patient experience of care survey. Patients with a low self-reported quality of health tend to be more critical when answering questionnaires and vice versa^{3, 16, 20-25}. To minimize this confounding factor all patients were, by the time of admission (i.e. after the patients had received information about their diagnosis, but prior to surgery), asked to fill out a standardized questionnaire, the SF-36. The SF-36 is a short-form health survey consisting of 36 questions, which yield an 8-scale profile of physical as well as mental health^{26, 27}.

Statistical analysis

Patient characteristics were compared using a confidence interval of 95%. The SF-36 was analyzed with a two-sample t-test. The questions in the IN2005-E, regarding the patients' experiences, were analyzed by a cross-tabulation of the data using the χ^2 test in SPSS 17.0. The questions in the IN2005-E, regarding the background data, were analyzed with a two-sample t-test. The significance level was set to ≤ 0.05 .

Results

Patients' characteristics

No difference could be found between the ward and the hotel group regarding patient characteristics, type of surgery, tumour characteristics or self-reported quality of life (SF-36). The mean value of the SF-36 was 72.9 in the ward group versus 67.9 in the hotel group ($p = 0.176$). (*Table 1*)

The detailed results of the SF-36 survey are demonstrated in *Figure 2*.

Patient outcomes - the IN2005-E

The response rate regarding the IN2005-E questionnaire was 91.5% in the ward group (i.e. 65 filled out forms out of a total of 71 patients) versus 92.9% in the hotel group (i.e. 65 filled out forms out of a total of 70 patients). There was no difference in the IN2005-E between the ward and the hotel group regarding the background data (i.e. level of education, marital status, self-reported quality of health etc.). The post-operative self-reported

Table 1. Patients, type of surgery and tumour characteristics

	Ward (n=71)	95% CI	Hotel (n=70)	95% CI
Age at time for surgery (years):				
Mean age (SD)	60.1 (10.8)	± 2.05	57.1 (9.4)	± 1.8
Range	29-76		35-75	
Swedish as native language:				
Yes	54 (76.1)	± 8.1	57 (81.4)	± 7.5
No	6 (8.5)	± 5.3	8 (11.4)	± 6.1
Unknown/Missing data	11		5	
Level of education:				
Elementary school (or other equivalent)	4 (5.6)	± 4.4	8 (11.4)	± 6.1
High school (or other equivalent)	14 (19.7)	± 7.6	23 (32.9)	± 9
University/College	40 (56.3)	± 9.4	34 (48.6)	± 9.6
Unknown/Missing data	13		5	
Marital status:				
Single	14 (19.7)	± 7.6	14 (20)	± 7.7
Married/Cohabiting	47 (66.2)	± 9	51 (72.9)	± 8.5
Unknown/Missing data	10		5	
Children < 20 y.o.a. living in the household:				
Yes	16 (22.5)	± 7.9	18 (25.7)	± 8.4
No	45 (63.4)	± 9.2	47 (67.1)	± 9
Unknown/Missing data	10		5	
ASA Physical Status Classification System*:				
1	34 (48)	± 9.5	40 (57)	± 9.5
2	35 (49)	± 3	27 (39)	± 9.4
3	2 (3)	± 3.2	3 (4)	± 3.8
SF-36 (mean value)	72.9		67.9	<i>p</i> =0.176
Length of stay (mean in days)	1.08		1.07	
Type of surgery:				
Breast-conserving surgery	1		0	
Breast-conserving surgery + sentinel node	42 (59)	± 9.3	50 (71)	± 8.7
Breast-conserving surgery + sentinel node + axill. diss.	6		6	
Sentinel node + axill. diss.	0		1	
Mastectomy	3		1	
Mastectomy + sentinel node	6		3	
Mastectomy + axill. diss.	12		9	
Solely sentinel node	1		0	
Type of tumour:				
Invasive	69 (97)	± 3.2	68 (97)	± 3.3
In situ	1		1	
Benign (diagnostic procedure)	0		1	
Others	+ 1 sentinel node			
Tumour size (most extensive invasive component):				
< 20 mm	46 (65)	± 9.1	48 (69)	± 8.9
20 - 50 mm	23		19	
> 50 mm	0		1	
Others	1 DCIS, 1 sentinel node		1 DCIS, 1 hyperplasia	
Lymph node metastases:				
PN0	51 (72)	± 8.5	54 (77)	± 8.1
PN+	16		15	
Non examined/unknown	4 procedures where lymph nodes were not examined		+ 1 procedure where lymph nodes were not examined	

Figures are number (percentages) of patients unless stated otherwise.

*An international classification system that describes the patients' preoperative physical status. Ranges from 1 to 6 (1 = normal healthy patient, 2 = patient with mild systemic disease, 3 = patients with severe systemic disease, 4 = patients with severe systemic disease that is a constant threat to life, 5 = moribund patients who are not expected to survive without the operation, 6 = a declared brain-dead patient whose organs are being removed for donor purposes).

quality of health, as measured by question K1, did not differ between the two groups ($p=0.884$) (Table 2). This coincides with the pre-operative self-reported quality of life, as examined by the SF-36 (Table 1 and Figure 2).

A significant difference was identified in 15 out of 65 questions. Since the preconditions regarding distribution of pain relievers and how to use the call button differed between the groups from the beginning, three questions focusing on these issues were excluded. The remaining 12 questions, along with the 15 core questions of the PPE-15/IN2005-E, are discussed in the subsequent sections. Due to some overlap, a total of 23 questions were obtained. Five more questions, concerning confidence, trust, courtesy, availability and safety were added.

Information, education, coordination of care and physical comfort

Patients in the hotel group were allocated a bed immediately upon arrival, or informed why they had to wait for a bed, in a statistically higher degree than patients in the ward group. Information about routines was significantly better at the hotel compared to the ward. However, there was no difference between the groups regarding the issue of how doctors and nurses managed to answer questions in an understandable manner.

Respect for patient preferences, emotional support and involvement of family and friends

In eight out of eleven questions in these subsections, there was no difference between the two groups. However, what stands out is that the respondents in the hotel group were given enough privacy when discussing their condition or treatment to a much greater extent than the patients in the ward group. The difference was significant. Moreover, the availability of nurses when in need for discussing worries and fears was better in the hotel group. There was also a slightly better confidence in the nurses at the hotel than at the ward.

Continuity and transition

The information about the purpose of medicines and their side effects as well as information about danger signals to watch for at home, were significantly better in the hotel group compared to the ward group.

Overall impression

The courtesy of the admitting staff and the nurses was perceived as better amongst the respondents in the hotel group than by the patients in the ward group. The patients in the hotel group rated their overall experience higher compared to the patients in the ward group. Furthermore, a higher percentage of patients in the hotel group than in the ward group would definitely recommend that specific type of perioperative care to others. There was no difference between the two groups regarding the feeling of being safe and secure during

Figure 2. Comparison of the SF-36 score between the ward (mean value 72.9) and hotel (mean value 67.9) ($p=0.176$)

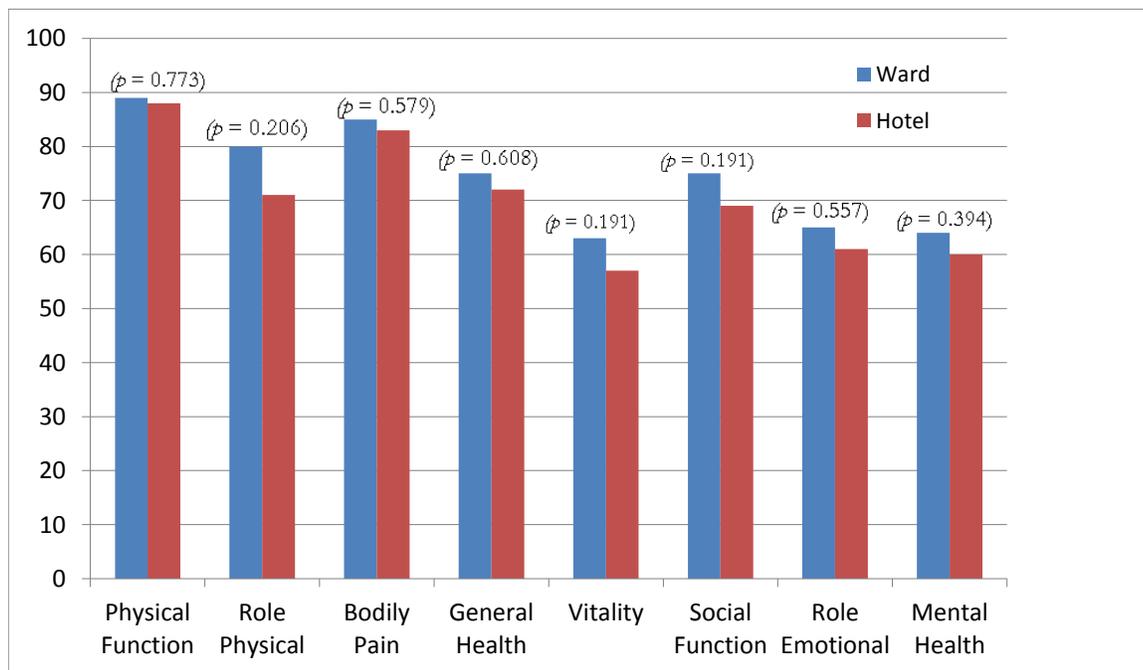


Table 2. IN2005-E. Question K1: Post-operative self-reported quality of health

		K1 "In general, would you say your health is:"					Total
		Excellent	Very good	Good	Fair	Poor	
Ward	N	15	30	12	2	1	60
	(% within ward)	(25.0%)	(50.0%)	(20.0%)	(3.3%)	(1.7%)	(100.0%)
Hotel	N	17	25	14	8	1	65
	(% within hotel)	(26.2%)	(38.5%)	(21.5%)	(12.3%)	(1.5%)	(100.0%)
Total	N	32	55	26	10	2	125
	(%)	(25.6%)	(44.0%)	(20.8%)	(8.0%)	(1.6%)	(100.0%)

Figures are numbers (percentages) of patients. $p = 0.884$

their perioperative stay. In addition, there was no difference concerning the possibility to talk to a doctor or nurse.

Patient comments

The final part of the IN2005-E gives the respondents the opportunity to, in their own words, describe what was good about their care and what could have been improved. Approximately three quarters of both the ward and the hotel group took the opportunity to do so. The comments were predominantly positive, but negative comments/suggestions for improvement did occur. The following summary focuses on and highlights some key messages from these patients' comments. These comments only constitute a sample of the total comments provided and are not representative of all the views of all the patients who took part in the survey.

Many of the patients, who received perioperative care at a general surgical ward, praised the courtesy and the efficiency of the staff. Furthermore, many respondents reported that they felt safe and secure at the ward:

"The staff was excellent!"

"I was provided with excellent care and I felt very safe and secure."

Quite a lot of negative comments were made with regards to the environment at the ward. Many patients mentioned that they had to wait for a long time in order to get a bed. In addition, many patients felt that there was a lack of privacy and felt discomfort in having to share a room with other patients. Having to share a room with other patients made it more difficult to talk to the staff about sensitive issues and the atmosphere during the nights was described as disorderly. Furthermore, some patients experienced the ambience at the ward as very stressful:

"I had to wait for a very long time in order to get a bed. There were people everywhere and I could not sleep due to all the noise."

"There was no bed ready for me when I arrived at the ward and I also felt like there was no privacy."

"To share a room with other people was a real struggle for me. I couldn't sleep, I lacked privacy and I found it very difficult to talk to the staff about personal issues. The whole environment was really stressful."

The majority of the patients, who received perioperative care at the hotel, expressed great appreciation with regards to the environment. Many positive remarks about having their own room were noted and with this came also a feeling of calm and serenity. In addition, it was pointed out on numerous occasions that the environment at the hotel made the patients feel not quite as ill, since the hotel itself was not regarded as a regular hospital:

"It was nice to have my own room, where I could choose how I wanted to spend my time—reading, sleeping, eating etc."

"It was much appreciated to get some peace and quiet at the hotel!"

"The environment at the hotel made me feel less ill!"

"It was amazing to have your own room and not being disturbed by other patients, machines and other activities."

"To be able to avoid 'the feeling of a regular hospital', but still having excellent care within reach was wonderful. I am convinced that this facilitates the recovery!"

Many respondents reported that an important advantage was the possibility for relatives/friends to stay with the patient at the hotel. The staff and the continuity of the staff, along with the feeling of safety and security were also greatly appreciated:

"I greatly appreciated that my husband could stay with me at the hotel."

"I liked that my relatives could visit at any time and that my husband could stay for the night."

"To have the same nurse following me from the beginning until the end was very positive"

"The staff was excellent and I felt safe at all times."

A couple of patients explained that they felt too isolated and alone at the hotel, and would have preferred a

Table 3. Results of the IN2005-E. Number of patients that answered "high perceived quality" to different questions in the IN2005-E questionnaire

Question in the IN2005-E	Definition of "high perceived quality"	Number of patients that answered "high perceived quality"		<i>p</i>
		Ward <i>N</i>	Hotel <i>N</i>	
Information, education and coordination of care:				
B2 If you had to wait for a bed when arriving at the ward/hotel, did a member of the staff explain to you why?	Yes/ I did not have to wait	54 (85.7)	64 (100)	0.002
B3 When you reached the ward/hotel, did you get enough information about routines, such as timetables and rules?	Yes, completely	32 (54.2)	59 (93.7)	<0.000
C2 When you had important questions to ask a doctor, did you get answers that you could understand?*	Yes, always	64 (98.5)	60 (100)	0.335
D1 When you had important questions to ask a nurse, did you get answers that you could understand?*	Yes, always	57 (91.9)	59 (98.3)	0.223
F1 Sometimes in a hospital, a member of staff will say one thing and another will say something quite different. Did this happen to you?*	No	55 (87.3)	49 (76.6)	0.116
Physical comfort:				
G5 If you were in any pain, do you think the hospital staff did everything they could to help control it?*	Yes, definitely	33 (97.1)	26 (96.3)	0.868
Respect for patient preferences and emotional support:				
C3 If you had any worries or fears about your condition or treatment, did a doctor discuss them with you?*	Yes, completely	34 (68.0)	37 (78.7)	0.233
C5 Did doctors talk in front of you as if you weren't there?*	No	61 (96.8)	62 (98.4)	0.559
D2 If you had any worries or fears about your condition or treatment, did a nurse discuss them with you?*	Yes, completely	33 (73.3)	49 (92.5)	0.011
D4 Did nurses talk in front of you as if you weren't there?	No	62 (96.9)	56 (90.3)	0.132
C4 Did you have confidence and trust in the doctors treating you?	Yes, always	63 (96.9)	64 (100)	0.157
D3 Did you have confidence and trust in the nurses treating you?	Yes, always	58 (89.2)	61 (98.4)	0.034
F9 Did you feel you were treated with respect and dignity while you were in the hospital?*	Yes, always	61 (95.3)	64 (98.5)	0.302
F2 Were you involved as much as you wanted to be in decisions about your care and treatment?*	Yes, definitely	45 (76.3)	51 (82.3)	0.416
F3 Were you given enough privacy when discussing your condition or treatment?	Yes, always	40 (63.5)	62 (95.4)	<0.000
Involvement of family and friends:				
F4 If your family or someone else close to you wanted to talk to a doctor, did they have enough opportunity to do so?*	Yes, definitely	17 (68.0)	31 (86.1)	0.089
I5 Did the doctors or nurses give your family or someone else close to you all the information they needed to help care for you?*	Yes, definitely	7 (33.3)	18 (56.3)	0.102
Continuity and transition:				
H6 Did a member of staff explain the purpose of the medicines you were to take at home in a way that you could understand?*	Yes, completely	43 (89.6)	63 (98.4)	0.039
H7 Did a member of staff tell you about medication side effects to watch for?*	Yes, completely	9 (31.0)	28 (59.6)	0.016
H8 Did a member of staff tell you about any danger signals you should watch for after you went home?*	Yes, completely	27 (54.0)	49 (83.1)	0.001
Overall impression:				
B4 How would you rate the courtesy of the staff who admitted you to the ward/hotel?	Excellent	30 (46.9)	43 (67.2)	0.020
C7 How would you rate the courtesy of your doctors?	Excellent	44 (67.7)	52 (81.3)	0.078
D6 How would you rate the courtesy of your nurses?	Excellent	39 (60.0)	54 (88.5)	<0.000
C6 If you ever needed to talk to a doctor, did you get the opportunity to do so?*	Yes, always	24 (85.7)	26 (92.9)	0.388
D5 If you ever needed to talk to a nurse, did you get the opportunity to do so?	Yes, always	56 (100)	47 (97.9)	0.278
J4 Overall, how would you rate your experience at the ward/hotel?	Excellent	33 (55.0)	53 (82.8)	0.001
J5 Would you recommend this type of perioperative care to others?	Yes, definitely	42 (72.4)	61 (95.3)	<0.000
F8 Did you feel safe and secure during your stay at the ward/hotel?	Yes, completely	60 (93.8)	63 (98.4)	0.171

Figures are number (percentages) of patients. There were a total of 65 respondents in each group. However, numbers vary due to correction of the base, where "non-answers" such as "non relevant" etc. were excluded, explaining why the base might be less than 65 (i.e. 64 respondents might equal 100% of the group).

*PPE-15 question

negative comments about the beds in the hotel not being adjustable:

“Arriving at the room and realizing how alone I was.

It made me feel very unhappy.”

“I got very lonely in my hotel room and I would have preferred to stay in a shared room at the ward.”

“I would have liked an adjustable bed for my bad back.”

Discussion

The patients in the study perceived the quality of the provided care as high, regardless if they were allocated to perioperative care at a general surgical ward or at the patient hotel. In the hotel group, there was a significant better experience of care regarding issues such as coordination, privacy, some aspects of medical information, availability, and the courtesy of the nurses.

In general, there was a tendency for patients in the hotel group to be more positive in their experiences of the care than patients in the ward group. However, the study is fairly small, which implies that it is difficult to determine if this tendency is due to a real difference in the perioperative care itself or if it is constituted of a bias in the meaning that the patients being treated at the hotel had a more positive attitude to the care they received. A way to reduce this risk and other systematic errors would be to blind the study, but for obvious reasons that was not applicable in this case. Individual factors, such as age, self-reported quality of health, gender, marital status, level of education/income and pain, have been found to be associated with satisfaction and patients' experience, and are plausible confounding factors in patient surveys.^{3, 16, 20, 21, 23-25, 28} How these sociodemographic variables affect patient satisfaction and patients' experience differ between studies. However, the majority concludes that greater age and a high self-reported quality of health imply greater satisfaction.^{3, 16, 20, 21, 23-25} Furthermore, being married as well as having a low level of education seem to increase the level of patient satisfaction, although the latter is contradicted by Xiao.^{24, 25, 28} There were no statistical differences between the two groups regarding the confounding factors mentioned above. Furthermore, there was no difference in other patient characteristics, tumour characteristics, type of surgery, or adjuvant therapy, which suggests that both groups were equally ill/healthy (Table 1). Hence, by randomizing patients some systematic errors were avoided, even though they could not be eliminated entirely since the study was not blinded. As well as being randomized, the patients in the two different groups were questioned during the same observational period, which further contributes to the strength of this study. In addition, having the same surgeons performing surgery on patients in both groups, as well as using a well-validated questionnaire (IN2005-

E) to evaluate the patients' experiences, also contribute to the strength of the study. Since self-reported quality of life may influence the result of a patient experience of care survey, this entity was measured pre-operatively with the SF-36. No difference could be found between the two groups (Table 1 and Fig 2). However, it is possible that the patients would rate their health differently after having surgery. Since the experience of care (IN2005-E) was assessed post-surgery, it would have been desirable to measure the self-reported quality of life post-operatively as well. The SF-36 was not repeated after surgery and this is a limitation in the study. However, in one question (K1) in the IN2005-E, the patients were asked to assess their health. Even though this one question cannot replace the SF-36, it gives some indication of the post-operative self-reported quality of health. No difference could be found between the two groups (Table 2).

From the patients' perspective, the organization and information system was better at the hotel than at the ward. At the hotel there was almost no delay in bed allocation and the routines were explained clearly. This difference can maybe be explained by the fact that the general ward was usually fully occupied and sometimes overcrowded, resulting in a longer waiting period for a bed for the patient and less information about daily routines from nurses that often were working under higher stress levels due to the greater patient load.

The increased possibility for privacy for the patients staying at the hotel is significant and a factor that should not be undervalued or overlooked. The advantages with having your own room and bathroom, having the possibility for family members to stay with you during your whole time at the hospital are obvious. However, having privacy might also result in patients being more prone/willing to discuss worries, fears and sensitive issues with their doctors and nurses.

The results favoring the hotel group, regarding the courtesy of the nurses and the availability of nurses to discuss worries and fears with could perhaps be explained by what has been discussed in the two sections above. Consequently, an organized and less hectic/stressful environment in combination with privacy should result in the feeling of excellent courtesy and a higher degree of availability.

Continuity and transition were perceived as better in the hotel group than in the ward group. Furthermore, patients in the hotel group found that family and friends were involved in the details of their care to a greater extent than in the ward group. This is quite interesting, since the same doctors were working at both the hotel and at the ward – hence, it is likely not attributable to a personal issue. One could speculate that this difference,

at least to some extent, also is due to privacy. At the hotel, the patient will receive coherent information by the doctor in a separate room and with the opportunity to ask questions that are not overheard by others as well as the possibility for family members to attend. At the ward the setting sometimes tends to be quite different. The patient might be receiving their discharge information at the side of their bed in a room shared with three other patients and factors that might disturb the conversation (other hospital staff, patients, call buttons etc.) are commonly occurring. During these circumstances it is not difficult to understand that the information tend to be conveyed in a better manner at the hotel than compared to at the ward.

It seems really important to point out that there was no difference between the two groups regarding if the patients felt safe and secure during their stay at the hotel or at the ward.

Many of the postulated explanations above derive from the speculation that privacy is an important factor that may have an impact on many different aspects of care. To our knowledge, there are no available studies comparing perioperative care in a patient hotel (offering private rooms) with a general ward (consisting of shared rooms), with the primary outcome being patients' experience. However, there are reviews regarding the comparison of single patient rooms versus multiple occupancy rooms and which therapeutic impacts the different settings may have on patients' experiences, satisfaction etc. Single patient rooms are associated with better privacy and as a result of this patient satisfaction is increased^{29, 30}. Privacy is also thought to improve social support and the involvement of family and friends, which reduces stress and enhances recovery. Furthermore, the opposite is believed to be true for multibed rooms.²⁹ In their summarized report, Ulrich et al found that patient consultation with physicians and nurses was far better in single rooms compared to multiple occupancy rooms. The communication from staff to patient as well as the communication from patient to staff was improved. These findings were mainly based on the "National patient satisfaction data for 2003" from Press Ganey Inc.²⁹ Communication, information and education are very important aspects when patients evaluate their experiences of the provided care.^{5-10, 29} It is plausible to stipulate that good communication, education and information result in better patient safety and if privacy equals an improvement within these areas, then privacy also equals patient safety. This assumption can be supported by the fact that 5 percent of patients in curtained spaces in an ED withheld portions of their medical history as compared to no patient withholding information in the same ED when being questioned and examined in a room with walls. Consequently, lack of privacy can

reduce patient safety.³¹ It has also been suggested that staff treating patients in multibed rooms are more reluctant to discuss sensitive patient issues or give extensive information, out of respect for privacy²⁹. However, in the review by Chaudhury et al, no conclusive evidence could be found regarding the difference in the patient-physician consultation between patients in single occupancy rooms and patients in multiple occupancy rooms³⁰. Moreover, patients in single rooms are exposed to less noise, which results in better sleep and reduced stress^{29, 30}.

The purpose of this study was never to investigate eventual cost benefits for the hospital. Nonetheless, it is difficult not to comment upon the cost effective perspective of care at the hotel compared to at a general surgical ward. The cost of one day of perioperative care in a surgical ward at Danderyds University Hospital is five times higher than at the hotel. Another important issue is that the use of the patient hotel for relatively "healthy" patients results in the unblocking of beds at the general ward for patients with more severe surgical illnesses/comorbidities.

We conclude that perioperative care at the patient hotel appears to offer better experience of care, as compared to perioperative care at a general surgical ward, for patients undergoing surgery for breast cancer. For selected patients perioperative care at a patient hotel is a safe, secure and appreciated alternative.

References

1. Cancer Incidence in Sweden 2011. *Socialstyrelsen, Centre for Epidemiology, Stockholm 2012.* www.socialstyrelsen.se
2. Holte HH, Harboe I, Vist GE. "Effect of patient hotels for hospitals and patients". *Systematic review. Rapport fra Kunnskapssenteret nr 11-2011. Oslo: Nasjonalt kunnskapssenter for helsehjelpen, 2011.*
3. Cleary PD, Edgman-Levitan S, McMullen W, Delbanco TL. "The relationship between reported problems and patient summary evaluations of hospital care". *Quality Review Bulletin, February 1992; 53-59.*
4. Sixma HJ, Kerssens JJ, van Campen C, Peters L. "Quality of care from the patient's perspective: from theoretical concept to a new measuring instrument". *Health Expectations 1998; 1, 82-95.*
5. Coulter A. "What do patients and the public want from primary care?". *Br Medical J 2005; 331: 1199-1201.*
6. Hall JA, Dornan MC. "What patients like about their medical care and how often they are asked: a meta-analysis of the satisfaction literature". *Soc. Sci. Med. 1988; 27: 935-939.*

7. Sofaer S, Crofton C, Goldstein E, Hoy E, Crabb J. "What do consumers want to know about the quality of care in hospitals?". *Health Serv Res* 2005; 40: 2018-2036.
8. Leinonen T, Leino-Kilpi H, Ståhlberg M-R, Lertola K. "The quality of perioperative care: development of a tool for the perceptions of patients". *J Adv Nurs* 2001; 35: 294-306.
9. Otte DI. "Patients' perspectives and experiences of day case surgery." *J Adv Nurs* 1996; 23: 1228-1237.
10. Rhodes L, Miles G, Pearson A. "Patient subjective experience and satisfaction during the perioperative period in the day surgery setting: A systematic review." *Int J Nurs Pract* 2006; 12: 178-192.
11. Coulter A, Cleary PD. "Patients' Experiences With Hospital Care In Five Countries". *Health Affairs* 2001; 20: 244-252
12. Jenkinson C, Coulter A, Bruster S. "The Picker Patient Experience Questionnaire: development and validation using data from in-patient surveys in five countries". *Int. J for Quality in Health Care*; 5: 353-358
13. <http://nhssurveys.org/surveys/712>
14. Burr J, Nicolson P. "Researching Health Care Consumers – critical approaches" Chapter 4 Seeking the Views of Consumers Using Quantitative Measures: Patient Experience Surveys by Steven Bruster. *Palgrave Macmillan* 2004: 55-70
15. Fitzpatrick R, Hopkins A. "Problems in the conceptual framework of patient satisfaction research: an empirical exploration". *Sociology of Health and Illness* 1983; 5: 297-311
16. Cleary PD, Edgman-Levitan S, Roberts M, Moloney TW, McMullen W, Walker JD, Delbanco TL. "Patients evaluate their hospital care: a national survey". *Health Affairs* 1991; 10: 254-267.
17. Cleary PD, Edgman-Levitan S, Walker JD, Gerteis M, Delbanco TL. "Using patient reports to improve the medical care: a preliminary report from 10 hospitals". *Quality Management in Health Care* 1993; 2: 31-38.
18. Glenngård A & Anell A. "Vad påverkar patientupplevd kvalitet i primärvården?. *Vårdanalys* 2012; 1.
19. Retrieved August 31, 2015, from Indikator: <http://www.indikator.org/english.htm>
20. Cleary PD, McNeil BJ. "Patient satisfaction as an indicator of quality of care". *Inquiry* 1988; 25: 25-36.
21. Hall JA, Feldstein M, Fretwell MD, Rowe JW, Epstein AM. "Older patients' health status and satisfaction with medical care in an HMO population". *Med care* 1990; 28: 261-270.
22. Hall JA, Milburn MA, Roter DL, Daltroy LH. "Why are sicker patients less satisfied with their medical care? Tests of two explanatory models". *Health Psychology* 1998; 17: 70-75.
23. Rahmqvist M. "Patient satisfaction in relation to age, health status and other background factors: a model for comparisons of care units". *Int. J for Quality in Health Care* 2001; 13: 385-390.
24. Ren XS, Kazis L, Lee A, Rogers W, Pendergrass S. "Health status and satisfaction with health care: a longitudinal study among patients served by the Veterans Health Administration". *American J of Med Quality* 2001; 16: 166-173.
25. Xiao H, Barber JP. "The effect of perceived health status on patient satisfaction". *Value in Health*. 2008; 11:719-725.
26. Sullivan M, Karlsson J, Ware JE Jr. "The Swedish SF-36 Health Survey—I. Evaluation of data quality, scaling assumptions, reliability and construct validity across general populations in Sweden". *Soc Sci Med* 1995; 41: 1349-1358.
27. Ware JE Jr. "SF-36 Health Survey Update". *Spine* 2000; 25: 3130-3139.
28. Hall JA, Dornan MC. "Patient sociodemographic characteristics as predictors of satisfaction with medical care: a meta-analysis". *Soc. Sci. Med* 1990; 30: 811-818.
29. Ulrich R, Quan X, Zimring C, Joseph A, Choudhary R. "The Role of the Physical Environment in the Hospital of the 21st Century: A Once-in-a-Lifetime Opportunity". *Report to the Center for Health Design for the Designing the 21st Century Hospital Project* 2004.
30. Chaudhury H, Mahmood A, Valante M. "Advantages and Disadvantages of Single versus Multiple-Occupancy Rooms in Acute Care Environments – A Review and Analysis of the Literature". *Environ and Behav* 2005; 37: 760-786.
31. Barlas D, Sama AE, Ward MF, Lesser ML. "Comparison of the auditory and visual privacy of emergency department treatment areas with curtains versus those with solid walls." *Ann Emerg Med* 2001; 38: 135-139