

The quality of patient education in day surgery as evaluated by adult patients

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ABSTRACT

Purpose: The purpose of the study was to describe the quality of patient education in day surgery as evaluated by adult patients.

Design: Descriptive design using survey methodology.

Methods: The data were collected by questionnaire and measured the quality and implementation of education resources for day surgery patients (n=600) in a university hospital. The data were analyzed statistically using basic and multivariate methods.

Findings: Half of respondents assessed the implementation of patient education to have been done in a patient-centered and goal-oriented way. Most respondents (81%) were satisfied with the interaction in the patient education. The education resources were reported as good by 77% of respondents.

Conclusions: Greater account should be given in patient education to the patients' emotional well-being, feelings, their family members and patients' expertise in their own life. In developing patient education, the excellent knowledge and skills of health care staff in educating patients should be utilized.

Keywords: Patient education, Counseling, Quality, Day surgery, Adult patient

Introduction

The aging population is expected to increase pressure on hospitals.¹⁻⁵ Outpatient treatment and day surgery can be used to free up hospital ward places and operating rooms for more demanding treatments, while pressure on the wards due to ambulatory activity is reduced.⁶⁻⁸ However, successful day surgery requires not only surgery, but also successful post-treatment, with patient education having a particularly important role in this. Effective and clear patient education seeks to improve patient knowledge and operational performance,⁹⁻¹³ optimize patient recovery, shorten hospital stays for patients, improve satisfaction with health care, reduce the risks associated with surgery,¹⁴⁻¹⁷ as well as help to reduce the pressures on societal health services.¹⁸

Day surgery is an innovative treatment whose popularity and demand is growing all the time.^{1,6,19,20} It offers high-quality and effective surgical management for a wide range of procedures^{6,18,20} and is a well-designed, cost-effective and people-serving activity.^{6,7,18,19} Surgery and pain treatments constantly develop, so more and more surgeries can be done as a day surgery.^{6,21-23} The prevalence of day surgery varies considerably between various countries, from 0% to 90%.⁶ In the United States and Canada, almost 90% of specialized elective operative surgery is done as day surgery.⁶ In Finland, about 50% of elective operative surgery is done as day surgery,⁶ with patients being very satisfied with day surgery.^{7,20,24,25} While the health care system benefits from the lower costs of day surgery, patients appreciate a rapid recovery and effective analgesia.¹⁸

Day surgery patients arrive at the hospital on the day of surgery and leave home on the same day²² or at the latest within 24 hours of surgery.^{1,6} Day surgery treatment is therefore fast and efficient. The importance of patient education has grown, since the responsibility for follow-up care is very quickly transferred to the patient.^{6,26-30} Significant aspects of the optimal management of day surgery are providing the patient with information about the routines for day surgery, the intended surgical procedure, and postoperative recovery.¹⁰ Nursing interventions noted to be of highest priority in day surgery included more extensive and individualized information before surgery and education at discharge.¹⁰ The rapid increase in day surgery has led to changes in treatment interventions.^{7,31} Patient education has raised concerns among day surgery healthcare staff, since it has proved difficult to develop outpatient education.³²⁻³⁴ Achieving a patient education that is optimally effective is a challenge for healthcare staff, patients and patients' family members.^{9,28,35-37}

Patient education enables the management of necessary information and the development and motivation of patient knowledge, while also supporting patients to cope with their illness.³⁸ Education should support the achievement of the patient's educational goals³⁷⁻³⁹ and patient's self-care.^{28,30,37,39} There is no general definition of quality in patient education. In this study, quality education refers to patient-centered education, an interactive and goal-oriented implementation, and the provision of appropriate education resources.³⁸⁻⁴¹

The patient's context should be the starting point for high-quality patient-centered education that is geared to finding solutions to patients' problems.^{10,26,39} Patient education should where beneficial include help for patients in processing their emotions, as well as emotional and social support,^{40,42} so that the patient can utilize the information received and can feel safe and appreciative.⁴³ Surgical treatment is often experienced as emotionally distressing,^{2,44-48} so it is important that patients participate in decision-making and that they receive targeted, personalized and relevant information, which helps to reduce preoperative anxiety.^{2,14,34,43,46,47,49} Interaction in which patients are listened to, can ask questions, are given feedback, and are encouraged to talk about their background

factors^{38,43} helps to build a positive and confident relationship.³⁸ Patients are actively involved in the education process and are allowed the opportunity to explain their perceptions of educational goals.^{28,38,39,50} Goal-oriented education is one of the most important factors in how much patients will benefit from that education.^{30,32}

High quality patient education requires there to be adequate resources among healthcare staff,^{38,39} including knowledge, skills, attitudes, educational management, professionalism in regard to patient education, and interaction skills.^{35,37-39} Factors that affect the quality of education include appropriate facilities, time, materials and the cooperation of the personnel participating in patient education.^{30,38,39}

Patient education has been studied extensively, with the aim of developing effective and high-quality education. Since different health units work in different ways, each unit needs to do their own research into how best to develop patient education in their unit.⁵¹ As day surgery increases globally, so producing information that explores care and education from the patients' perspective becomes increasingly important. The purpose of this study was to describe the quality of patient education in day surgery as evaluated by adult patients. Further, we sought to obtain information related to patient education in day surgery and to identify areas of strength and also development needs.

Methods

Participants

The selection criteria for the study were 1) a day surgery patient aged 18 years or older, 2) patient came to the surgical unit from home and was discharged home no later than on the morning after surgery and 3) patient was able to respond to the questionnaire. The study was a cross-sectional survey study that used sequential random sampling, with the inclusion of the first 600 outpatients that met the selection criteria within the study period.^{52,53} Questionnaires were returned by 238 adult patients. Two questionnaires were excluded as they did not meet the selection criteria (not 18 years old and less than 50% questions answered). The final data sample for analysis consisted of 236 questionnaires (response rate = 39%).

Instrument and data collection

Data were collected using a modified version of the Counseling Quality Instrument (CQI),⁴¹ which was adjusted to fit the target group of this study.⁵² The CQI structural validity and internal consistency have been tested and found to be good in earlier studies.³⁹⁻⁴¹ The Cronbach's alphas (0.8–0.9) for the instrument have indicated a high internal consistency.^{39,41} In this study, the questionnaire was modified (added two background questions and modified some items) based on previous studies and instructions concerning patient education in day surgery, and the researcher's own content expertise. The content validity of the questionnaire was estimated according to experts in patient education in day surgery (n=5). In addition, the questionnaire's comprehensibility were tested on day surgery adult patients (n=10) before starting the actual data collection. One background question and a few items were clarified following the pretesting and instructions and proposals received from the content experts. These were made to ensure that the instrument measured the specific items that were under investigation.⁵²

The first part of the questionnaire sought background information from the patient, such as age, gender, education, and background information related to the day surgery. The second part assessed the quality of patient education in the following areas: implementation (19 items) and patient education resources (11 items). A 5-point Likert scale (totally agree-partially agree-partially disagree-totally disagree-cannot say) was chosen as it yields a dispersion in responses that are easier to handle and analyze by computer.^{52,53}

The data were collected during November 2014–June 2015 from a Finnish university hospital day surgery unit. The structured questionnaires were given to adult patients (n=600) meeting the selection criteria. Recovery room nurses gave the questionnaires to adult day surgery patients in a discharge situation, and patients were asked to complete the questionnaire within two weeks of the surgery. The questionnaire was returned in a postpaid preaddressed envelope given with the questionnaire. The day surgery healthcare staff was given instruction by the researcher and on the distribution of questionnaires before the data collecting commenced. At the same time, the healthcare staff was motivated to implement the research and they likewise had the chance to ask questions.^{52,53}

Analysis

The data were analyzed using SPSS Statistics 22.0 (SPSS Inc., Chicago, IL, USA) software. The distribution of variables was examined (frequency and percentages, as well as averages and standard deviations) as were connections between variable groups. Analysis of background variables was intended to see if there are differences in the quality of patient education between different patient groups. Background variables were constructed directly from background questions, only patients ages were formed by the re-rating (patients under 65 years and patients aged 65 years and over) in accordance with the definition of the standard retirement age of the European.

Sum variables were constructed from items relating to the implementation of patient education and patient education resources on the basis of previous research (Table 1).^{38,39,41} Three sum variables were identified from the implementation of patient education: patient-centered education, interaction during education, and goal-oriented education. From patient education resources, a single sum variable was identified. The Cronbach's alpha values varied in this study between 0.78–0.89.

Sum variables were categorized into three groups based on means, histograms and boxplots. The values 1.00–1.99 represented good patient education, 2.00–2.99 a satisfactory education and 3.00–4.00 poor education. The higher was the summation value, the less the patient agreed with the item. Since the distributions were skewed, non-parametric tests such as the Mann-Whitney U-test and the Kruskal-Wallis test were used to compare the differences between groups (background variables and sum variables). The Kruskal-Wallis test's statistically significant results were also specified with pairwise comparisons using Bonferroni correction. The level of statistical significance was set at $p < 0.05$.⁵³

Ethical considerations

All study phases complied with the ethical principles outlined in the Declaration of Helsinki. Research permits were sought from the appropriate research organization. Patients participated in

the study voluntarily. The questionnaire contained a cover letter that described the purpose and benefits of the research as well as patient rights during the study. The study participants were adults who were independently able to respond to the questionnaire and understand its content. Voluntary compliance with the questionnaire was taken to mean informed consent for the research. Refusal was possible at any stage of the research.⁵² The individual opinions of patients could not be identified at any stage. As the objective of the study was to develop patient education further and since previous studies have shown the importance of patient education for both patients and society, the subject of the research is considered to be ethically justified.

Results

Participant characteristics

Over half of respondents (58%) were women, aged from 18 to 87 years (average age of 52 years). The biggest surgical specialty group was comprised of orthopedic patients (45%). Surgery was usually expected for 3–6 months prior. The duration of the cause or the illness leading to the surgery varied from four days to 45 years, while 36% of respondents had previously been in surgery with the same illness or cause. The demographic characteristics of the participants are shown in Table 2.

Implementation of patient education

The implementation of patient education was assessed in the areas of patient-centered education, interaction during education, and goal-oriented education. Results are shown as sum variables (Table 3) and examples of the variables (Table 4).

Patient-centered education

Patient-centered education was experienced to be good by 58% of respondents and poor by 19%. Two fifths (41%) of respondents felt that they were treated as the best experts in their own life circumstances. A third of respondents (31%) had been asked what they already knew about the issues (mean 2.10, SD = 1.08) and almost half (45%) were encouraged to ask questions and to present their wishes regarding education. Half of respondents discussed issues important to them (50%) while a third (31%) discussed issues applying to the respondent's life situation. A third of respondent's (31%) felt their feelings were taken into account. A third of respondents reported that if they had wanted, close family members were involved in the education (29%). A third (30%) of respondents reported being informed about their patient rights, for example, in connection to their own patient data. Respondents aged over 65 years were more satisfied with patient-centered education ($p=0.002$), and while those that waited less than 3 months for surgery compared to 3–6 months were more satisfied with the patient-centered education ($p = 0.047$) (Table 3).

Interaction during education

Most respondents (81%) were satisfied with the interaction during education. The majority of respondents' education was implemented through discussion (75%) and three quarters of respondents (76%) reported that clear and comprehensible language was used in the education. Over half of respondents (65%) felt that they were listened to and supported during the education and that an appropriate number of issues were discussed (67%). Half of respondents (53%) felt they

were able to express their opinions about the care and follow-up instructions received. Half (51%) thought that the key issues were repeated at the end. Respondents who were aged 65 years and over were more satisfied with the interaction ($p = <0.001$) while university graduates more than compulsory school graduates felt that the language used in education was clear and understandable ($p = 0.002$) (Table 3).

Goal-oriented education

Goal-orientation in the education was rated as good by slightly over half of respondents (56%) and as satisfactory by a third (31%). Less than half of respondents (41%) were asked how well they understood these education issues being discussed. About a third (39%) of patients discussed appropriate recovery objectives and over half (53%) felt the objectives set were clear. Being aged 65 years and over appeared to have a significant impact on satisfaction. They were more satisfied with the goal-orientation of patient education ($p=0.002$) (Table 3).

Resources of patient education

Patient education resources were charted through items as given in Table 4. In total, 77% of respondents reported that education resources were good. Most respondents (72%) fully agreed that healthcare staff had given time to educate them, that education was carried out in suitable facilities (71%), and that education staff had shown good cooperation (78%). Written instructions were received nearly everyone (88%). The material used in patient education, such as home care instructions, were considered up to date (76%) (mean 1.28, SD = 0.59). The majority of respondents felt that healthcare staff had a positive attitude to education (77%) and knew how to educate patients well (76%). Approximately a third of respondents considered that the issues were dealt by means of many different educational methods (36%). Useful equipment, such as video, was used as an aid in patient education only in a small portion of cases (14%). Under half (44%) of respondents felt that healthcare staff were able to educate about postoperative issues, such as training with assistive technologies and operating restrictions. Those respondents aged 65 years and over were more satisfied with the resources used in education ($p<0.001$), as were those who waited less than 3 months for surgery compared to those waiting 3–6 months for surgery ($p = 0.034$) (Table 3).

Discussion and conclusion

Discussion

The short hospital episodes in day surgery have set new challenges for healthcare staff.³¹ Day surgery patients should be given incentives in addition to psychological education, with an emphasis on communicating that day surgery is real surgery, which may entail a long convalescence.⁴² Previous research has shown the most important skill demands relate to patient-centered education, as well as patient welfare and safety.³¹

According to this and a previous study, developing patient-centered and goal-oriented education requires more work to identify the need for emotional education and to recognize the educational needs of the patient and patient's family members.³¹ Patients should be encouraged more to ask questions during education, as well as inquiring about the patient's previous knowledge of the illness, so that the education can deal with those things that are particularly important to the patient. Education issues should be applied increasingly to the patient's life situation by taking into account

patients as an expert in their own life; considering should be given to appropriate individual goals for the patient in regard to education and recovery. Patients should also know more about their rights in regard to treatment. Previous studies have shown that when patients have the possibility to influence their care, they are more likely to be satisfied with the education they receive.⁵⁴ In this study, those who were most satisfied had a university education and were aged 65 years and over.

Patients in this study felt that clear and understandable language was used in their education, that they were listened to, and that the atmosphere was calm and open, which certainly contributed to the education and interaction being experienced as positive by patients. From the perspective of healthcare staff, patient education is widely implemented in a way that is patient-centered and interactive, even if patients are not always taken into account in the planning of the education or its evaluation.³⁹

The results of this study support previous research on healthcare staff perceptions regarding education resources.³⁹ Skills, knowledge and the attitude to patient education were seen as excellent from the point of view of adult day-surgery patients. Patients felt that the staff has time to educate them, although previous studies have shown that the healthcare staff considers the time permitted for education to be inadequate.^{35,37-39} Development in relation to the education facilities used has also been positive. Previous studies have shown that the facilities used in patient education are often inappropriate,^{38,39} but in this study, patients felt that education was carried out in suitable facilities.³⁹ These experiences likely affect the positive attitudes of healthcare staff toward patient education,^{38,39} as well as the attitude toward developing good skills in verbal and individual patient education.³⁹ Healthcare staff also consider themselves highly competent at managing the content of patient education, in identifying the appropriate timing of education, and in obtaining individual materials to aid education.³¹

In this study nearly all patients received both verbal and written education and their combined use has been found to significantly improve understanding and patient satisfaction.⁵⁴ The education of day surgery patients' usually employs either verbal or written methods of education or both together.^{15,19,34,44,54,55} Patients' questions also affect the content of education.³⁴ The more patients discuss their illness and treatment, the more they receive verbal and written education.⁵⁶ However, verbal education needs to be comprehensive and consistent with the written material.^{11,19} The use of other education methods is lower^{34,39} and this research also shows that the use of other educational equipment, such as videos, is not widespread, although previous studies have shown the positive effects of these on the effectiveness of education. Images, various concept maps, brochures and videos can promote the effectiveness of information and increase interest in the information.³⁴ Previous studies have also shown that the effects of an additional intervention in patients' activity regarding their own care, knowledge and behavior has yielded positive results.⁵⁷⁻⁵⁹

According to Heikkinen et al.⁵⁶, patients have high expectations regarding education, and they expect to receive more information than they actually receive. Expectations about the available information and perceptions of the actual information received clearly differ from each other. By targeting the particular educational factors and issues raised in this study may help reduce uncertainties related to surgery,^{19,42,44} reduce anxiety associated with surgery^{2,14,34,44,46,47,49} and improve the patient's position in education, with the patient being more actively involved in the education process.^{28,38,39,50} However, it must be remembered that even though the hospital routinely provides education to all patients, not all remember receiving adequate instructions.¹¹ It may be that communication is not always met between the healthcare staff and patients.¹¹

The reliability issues of this study relate particularly to the instrument used, the data collection method, and the sample. Surveys are considered very important sources of information⁵³ and in this study it made it possible to obtain important information about education in day surgery from the perspective of adult patients. Use of a previously validated questionnaire, the Counseling Quality Instrument, was intended to ensure the reliability of the questionnaire.⁴¹ The content validity of the questionnaire was tested by healthcare professionals, while the comprehensibility and clarity of the content and instructions were tested on adult day surgery patients. Patients who participating in this study answered the questions carefully; they showed no difficulty in interpreting the questions.

The researcher was aware when deciding on the data collection method that the response rates for mailed surveys are generally low (25–35%).⁵³ However, many factors supported the use of a traditional questionnaire. The benefits of the survey were that patients received a questionnaire personally at the time of discharge, which made it possible to collect an extensive sample. The size of the sample was quite big and it was possible to ask about several issues.^{52, 53} The purpose of using a questionnaire to be returned by post was to give each patient the same opportunity to respond to the questionnaire; it was ready for patients, it was easy to fill in, it could be completed later, and participation in the research did not require an internet connection. The chosen data collection method was also supported by the fact that previous studies have shown that in electronic surveys, the response rates have been worse than in traditional questionnaires.⁶⁰

To minimize nonresponses, a number of measures were taken at different stages of the research: the widest possible sampling was done, the healthcare staff received instruction and were motivated to implement the study and patients were motivated to answer through being told about the significance of the study. Patients were told about their rights during the study and the contact information of the researcher was given in the covering letter. The questionnaire was quite long, which may have negatively impacted the response rate, though it took only about 15 minutes to complete, as was informed about in the covering letter. The timing of survey immediately after surgery may have contributed to nonresponse, as may the absence of follow-up reminders. A nonresponse analysis was not done in this study and information about the patients who omitted to reply to the questionnaire was not available. As respondents were of different ages and had different educational backgrounds, the research can be considered to give a comprehensive picture of the views of adult patients about education in day surgery.

However, generalizing the results of this study should take into account the fact that the survey results are based on a single Finnish day surgical unit and its working practices. On a general level, the results can be utilized for developing patient education in any day surgery unit.

Conclusion

The study highlighted a number development challenges in patient education that can be addressed in developing further the already high-quality patient education. Patient education should take into account patients' emotional well-being and feelings, patients' expertise in their own life, as well as encouraging patients to ask questions. In day surgery, patient education should pay more attention to the patients' family members and give them the possibility to be involved more actively in the education situations. In further developing patient education, healthcare staff's excellent knowledge and competencies, as demonstrated in this study, should be utilized. Education in day surgery

involves still mainly verbal and written instruction, but it is useful to examine and try to exploit other education methods, such as video.

Practice implications

These results on adult patients' perspectives on patient education can be utilized in the training of healthcare staff and develop practices in patient education toward being more holistic and patient-centered. The excellent results regarding the knowledge, skills and positive attitude towards patient education on the part of healthcare staff shows that there are strong foundations for high-quality and comprehensive patient education. Taking into account the development challenges associated with operational education will better contribute to the success of patient care, thus facilitating the development of patient knowledge and the management of necessary information, as well as supporting the achievement of objectives and patient self-care.

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Conflict of interest

The authors declare that they have no conflict of interests.

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Table 1

Sum variables of education implementation and resources and Cronbach's alpha values

Sum variable name	Amount of items	Cronbach's alpha
Implementation of education		
Patient-centered education	8	0.88
Interaction of education	8	0.89
Goal-oriented education	3	0.78
Resources of education		
	11	0.86

Table 2

Demographic characteristics of the participants (n=236)

Variable	Frequency	Percent	Mean	Standard deviation	Standard range
Gender					
Female	138	58			
Male	98	42			
Age					
Under 65 years	185	81	52	14.50	18-87
65 years and over	44	19			
Civil status					
Single	21	9			
Cohabiting	51	22			
Married/Registered partnership	138	59			
Divorced	19	8			
Widow	6	2			
Education					
Compulsory school	62	26			
High school	7	3			
Vocational school	54	23			
College	80	34			
University	32	14			
Surgical specialty					
Hand surgery	27	11			
Orthopedics	107	45			
Plastic surgery	41	18			
General and abdominal surgery	60	26			
Duration of the illness					
In days	10	4	12	7.39	4-25
In months	59	25	6	2.49	1-10
In years	167	71	6	6.85	1-45
Surgery waiting time					
Less than 1 month	39	16			
Less than 3 month	82	35			
3-6 month	91	39			
More than 6 months	24	10			
Previous surgery					
No	152	64			
Yes	84	36			

Table 3

The sum variables measuring quality of patient education (implementation and resources) and statistically significant ($p < 0.05$) background variables (n=236)

Sum variable	Mean (SD)*	Background variable	p
Implementation of education			
Patient-centered education	1.96 (0.88)	Age 65 and over ^a	0.002
		Surgery waiting ^b	0.007
		- Surgery waiting < 3 months ^c	0.047
Interaction of education	1.47 (0.59)	Age 65 and over ^a	0.000
		Education ^b	0.004
		- University ^c	0.002
Goal-oriented education	1.82 (0.84)	Age 65 and over ^a	0.002
Resources of education			
	1.58 (0.57)	Age 65 and over ^a	0.000
		Surgery waiting ^b	0.005
		- Surgery waiting < 3 months ^c	0.034

*Range 1-4: 1= Totally agree, 2= Partially agree, 3= Partially disagree, 4= Totally disagree

^aMann-Whitney U-test

^bKruskal-Wallis Test

^cPost Hoc Tests Bonferroni

Table 4

Examples of the variables of education implementation and resources in day surgery evaluated by adult patients (n=236)

Sum variable name Variable	Totally agree n (%)	Partially agree n (%)	Partially disagree n (%)	Totally disagree n (%)	I cannot say n (%)	Missing n (%)	Range 1-4* Mean (SD)
Implementation of education							
Patient-centered education							
- I was taken into account as the best expert of my life.	97 (41)	57 (24)	28 (12)	12 (5)	28 (12)	14 (6)	1.77 (0.92)
- My feelings, such as fear and potential disappointment, were taken into consideration.	72 (31)	39 (17)	36 (15)	27 (11)	49 (21)	13 (5)	2.10 (1.11)
- A family member was according to to education situation if I want.	69 (29)	32 (14)	26 (11)	27 (11)	65 (28)	17 (7)	2.07 (1.15)
Interaction of education							
- The atmosphere of education was calm and open.	180 (76)	30 (13)	13 (6)	2 (1)	3 (1)	8 (3)	1.28 (0.61)
- Education was implemented by discussing.	177 (75)	33 (14)	6 (3)	5 (2)	6 (2)	9 (4)	1.27 (0.62)
- I got arguments for issues.	116 (49)	55 (23)	30 (13)	5 (2)	22 (9)	8 (4)	1.63 (0.82)
Goal-oriented education							
- Objectives that were set for recovery/healing were clear.	125 (53)	67 (29)	22 (9)	8 (3)	7 (3)	7 (3)	1.61 (0.81)
- Appropriate recovery objectives to me were discussed during education.	91 (39)	56 (24)	25 (10)	26 (11)	30 (13)	8 (3)	1.93 (0.89)
- I was asked how I understood educated issues.	97 (41)	54 (23)	33 (14)	22 (9)	22 (9)	8 (4)	1.90 (1.03)
Resources of patient education							
- Healthcare staff was able to educate me well.	180 (76)	39 (17)	8 (3)	2 (1)	2 (1)	5 (2)	1.27 (0.57)
- Healthcare staff dominated by under education the necessary information.	179 (76)	38 (16)	7 (3)	2 (1)	2 (1)	8 (3)	1.26 (0.55)
- In order to help education were used useful tools (e.g. video).	34 (14)	25 (11)	39 (16)	72 (31)	49 (21)	17 (7)	2.88 (1.17)

* 1= Totally agree, 2= Partially agree, 3= Partially disagree, 4= Totally disagree