

Patient satisfaction with anesthesia care: information alone does not lead to improvement

[La satisfaction du patient face à l'anesthésie : l'information ne suffit pas à l'amélioration]

Thomas Heidegger MD,* Matthias Nuebling PhD,† Reinhard Germann MD,‡ Hans Borg MD,‡
Katrín Flückiger MD,§ Trinidad Coi,§ Yvonne Husemann LIC PHIL¶

Purpose: To evaluate if information campaigns and introduction of information leaflets lead to an improvement in patient satisfaction with anesthesia care.

Methods: In 2000, we carried out an assessment of patient satisfaction with anesthesia care. "Information/involvement in decision making" was identified as the worst problem area. The three hospitals involved in this study introduced strategies to improve this dimension of patient satisfaction by launching information campaigns, producing or improving information brochures (particularly in hospitals A and C), and by expanding the preanesthetic care unit (hospital B). In 2002, a second survey was carried out. Each of the hospitals sent questionnaires to 600 elective surgery patients after discharge. We compared the total problem scores (the percentage of patients who responded that a problem was present) and the problem scores for the dimension 'information/involvement in decision making' between 2000 and 2002.

Results: The total problem score (mean in %, 95% confidence interval) for all three hospitals together remained unchanged [19% (1)], as well as the problem scores for each hospital [hospital A 16% (1), hospital B 21% (1), hospital C 20% (1)]. The problem score for 'information/involvement in decision making' remained unchanged also: 31% (29–33) in 2000 compared to 28% (26–30) in 2002.

Conclusion: Information campaigns and the introduction of information leaflets alone do not improve patient satisfaction with anesthesia care.

Objectif : Évaluer si les campagnes et les brochures d'information améliorent la satisfaction des patients face à l'anesthésie.

Méthode : En 2000, nous avons procédé à l'évaluation de la satisfaction des patients face à l'anesthésie. «L'information/l'implication dans la prise de décision» a été désignée comme la composante critique du problème. Dans le but d'augmenter la satisfaction des patients, les trois hôpitaux concernés par l'étude ont lancé des campagnes d'information, produit ou amélioré des brochures d'information (surtout dans les hôpitaux A et C) ou agrandi l'unité de soins préanesthésiques (hôpital B). En 2002, une seconde enquête a été menée. Chacun des hôpitaux a posté des questionnaires à 600 patients de chirurgie réglée en convalescence. Nous avons comparé les scores du problème global (le pourcentage de patients qui répondaient qu'un problème était présent) et les scores de problème pour l'aspect «information/implication dans la prise de décision» entre 2000 et 2002.

Résultats : Le problème global (moyenne en %, intervalle de confiance de 95 %) est demeuré inchangé pour l'ensemble des trois hôpitaux [19 % (1)], de même que pour chaque hôpital [hôpital A 16 % (1), hôpital B 21 % (1), hôpital C 20 % (1)]. Le score concernant «l'information/l'implication dans la prise de décision» n'a pas changé non plus : 31 % (29-33) en 2000, comparé à 28 % (26-30) en 2002.

Conclusion : Les campagnes d'information et l'introduction de brochures d'information seules n'améliorent pas la satisfaction des patients face à l'anesthésie.

From the Department of Anaesthesiology,* Cantonal Hospital, St. Gallen, Switzerland; Empirical Consulting,† Freiburg, Germany; Department of Anaesthesiology and Intensive Care Medicine,‡ Landeskrankenhaus Feldkirch, Austria; Department of Anaesthesiology,§ University Hospital of Bern, Switzerland; Picker Institut,¶ Zug, Switzerland.

Address correspondence to: Dr. Thomas Heidegger, Department of Anaesthesiology, Cantonal Hospital, St. Gallen, Rorschacherstrasse 95, 9007 St. Gallen, Switzerland. Phone: +41-71-494-1509; Fax: +41-71-494-2889; E-mail: thomas.heidegger@kssg.ch
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THE assessment of patient satisfaction with anesthesia care is increasingly gaining in importance.^{1,2} In a previous article we described the development of a psychometric questionnaire for the measurement of patient satisfaction with anesthesia care.³ In that study, a rigorous protocol was applied in the development of the questionnaire, for example testing for validity and reliability.⁴⁻⁷ The most important finding of the first survey was that the assessment of patient satisfaction in the form of dimensions (groups of items or aspects which cover a special area, for example, information) was methodologically superior to a global rating like 'How would you rate the overall care you received for your anesthetic?' since specific improvement strategies can only be derived from specific problems. Further, we found that the area of patient information and involvement in decision making was by far the most important and the most problematic (31%). Therefore, it was obvious that improvement strategies should be aimed at this problem area.

The goal of the present study was to evaluate if concrete measures taken to improve 'information/involvement in decision making' undertaken after the survey in 2000 would lead to an improvement in this dimension and decrease the total problem score.

Methods

Based on the findings of the first assessment in 2000, the three hospitals involved initially introduced improvement strategies dealing with 'information/involvement in decision making.' The improvement measures were introduced between spring 2001 and spring 2002. All three hospitals launched information campaigns and introduced or improved information brochures. Table I lists the actual measures taken in each hospital. For practical reasons, these varied from one institution to the other. Each hospital adopted specific measures which had a good chance of realization in the institution.

After Ethics Committee approval, each of the three participating hospitals sent questionnaires to 600 elective surgery patients within one month after discharge, together with an accompanying letter and a stamped, pre-addressed envelope. Non-responders were sent a second questionnaire one month later, together with a reminder letter. All questionnaires were returned to an independent institute for evaluation. Outpatients and emergency admissions were excluded. Patients aged 16 yr and older were enrolled in the study.

The psychometric qualities of the dimensions were verified again in 2002.

The items of the questionnaire which measured potential problems, for example 'Did you feel that the anesthesiologist gave you enough of his time?' were dichotomized (i.e., were assigned to one of two groups depending on whether a problem was mentioned or not). For the above mentioned question the following answers were possible: 'yes - completely' (not a problem response); 'yes - to a certain extent,' and 'no' (problem responses). Therefore the problem score of the question is the percentage of patients who responded that a problem was present (in this example 'yes - to a certain extent' or 'no'). The problem score for a dimension (group of items) is the proportion of problems mentioned for all relevant questions in the dimension. The total problem score is the percentage of problems mentioned regarding all questions measuring the quality of the anesthetic (for further details see Heidegger *et al.*³).

We compared the total problem score for all three hospitals together and for each hospital between 2000 and 2002. We also compared the problem scores for the dimension 'information/involvement in decision making' obtained in 2000 and 2002 for each of the hospitals and for all hospitals together. We focused on single-item analysis only where specific interventions were implemented and change could be expected.

Data are presented as means in % [95% confidence interval (CI)] or median (range) were appropriate; $P < 0.05$ for the comparison of means (ANOVA, t test)

TABLE I Strategies destined to improve 'information/involvement in decision making'

Hospital	Measures
Hospital A	Presentation of study results; expert meeting which decided to focus on 'information/involvement in decision making'; additions to the already existing patient information leaflet (information given before anesthesia; information on postoperative pain therapy); revised information campaign in the hospital; leaflets were sent to patients scheduled for surgery and distributed throughout the hospital.
Hospital B	Presentation of study results; expansion of the preanesthetic care unit (five times more patients in the year 2001 than in 2000) and presence of an anesthesiologist; focus on improvement of information by handing out an information sheet in the preanesthetic care unit or in the surgeon's consulting room; ensuring privacy by using single rooms.
Hospital C	Presentation of study results; introduction of patient information sheet from hospital A and repetition of information campaigns; information sheets were sent to patients scheduled for surgery.

TABLE II Number of items in each dimension of patient satisfaction and internal consistency (Cronbach's alpha); means (%) of the individual problem ratings per dimension; importance of the individual dimensions in the total problem score

Dimension	No. of items		Cronbach's alpha		Mean problem score in % (valid number of patients)		Beta coefficient* on total score (importance)	
	2000	2002	2000	2002	2000	2002	2000	2002
Year	2000	2002	2000	2002	2000	2002	2000	2002
Information/ involvement in decision making	9	9	0.72	0.69	31 (2295)	28 (994)	0.60	0.52
Respect/ confidence	6	6	0.77	0.74	5 (2307)	6 (1036)	0.26	0.28
Delays	4	4	0.75	0.66	7 (2185)	9 (891)	0.16	0.17
Nursing care in recovery room	2	2	0.69	0.81	2 (1506)†	3 (554)†	0.07	0.12
Continuity of personal care by anesthesiologist	4	4	0.43	0.46	32 (2324)	35 (1035)	0.27	0.28
Pain management	4	4	0.43	0.34	9 (2162)	11 (697)	0.16	0.14
Total summed problem score	29	29	-	-	19	19	R ² = 0.97	R ² = 0.91

*Beta coefficients are standardized regression coefficients. In the multiple linear regression analysis performed, the values of the standardized betas correspond to the relative importance of the single dimensions' scores on the total problem score.⁸ †Only applicable for patients who were in the recovery room or could remember being there.

was considered significant. All analyses were conducted using the SPSS 10 analysis package (SPSS Inc., Chicago, IL, USA).

Results

The total response rate was 58% (1,051 out of 1,812 questionnaires; range 55%–59%). The median (range) age of the respondents was 54 yr (16–96), and the female:male ratio was 50:50. The extent of surgery and the duration of hospital stay had no effect on problem scores in the first survey. Therefore we did not investigate these potential confounders in 2002. Analysis of the perioperative characteristics of the non-respondents showed that sex and age had no influence on participation. Patients with an ASA physical status III and IV participated much less.

The psychometric qualities of the dimensions were very similar to those found in the first survey in 2000. Table II shows the six dimensions together with the results of the reliability analysis and the analysis of the importance of the dimensions using the standardized beta coefficients⁸ of multiple linear regression on the total problem score as the criterion. The dimension 'information/involvement in decision making' again had the greatest influence.

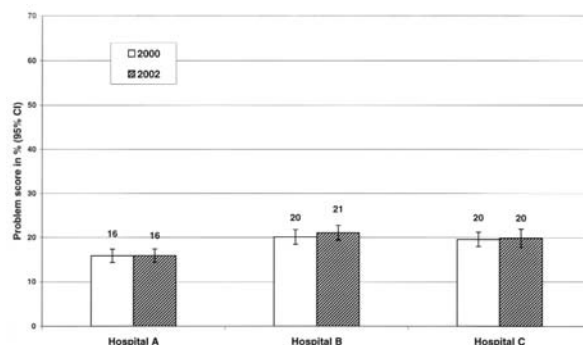


FIGURE Comparison of the total problem scores in each hospital between 2000 and 2002.

The total problem score (all three hospitals together) remained unchanged [19 (1) %], as well as the total problem scores in each hospital (Figure). The problem scores for 'information/involvement in decision making' at all hospitals remained unchanged [31% (2) in 2000 *vs* 28% (2) in 2002] ($P = ns$).

TABLE III Comparison of single items of the dimension 'information/involvement in decision making' between 2000 and 2002 within the three hospitals

<i>Information/ involvement in decision making</i>	<i>Hospital A</i>		<i>Hospital B</i>		<i>Hospital C</i>	
	<i>2000</i>	<i>2002</i>	<i>2000</i>	<i>2002</i>	<i>2000</i>	<i>2002</i>
All in all, did you feel that you received enough information concerning your anesthetic before you went into hospital?	39 (34-45)	37 (32-43)	45 (40-50)	32 (27-37)*	51 (46-56)	45 (39-51)
Were you able to talk to the anesthesiologist about the anxiety/doubts you felt concerning your forthcoming anesthetic?	20 (15-25)	21 (16-26)	21 (16-26)	20 (14-25)	32 (25-39)	23 (17-29)
If you asked the anesthesiologist questions during this discussion, did you fully understand the replies you got?	14 (11-18)	10 (6-13)	15 (11-19)	13 (9-17)	17 (13-22)	16 (12-21)
Did you feel you had enough say in the choice of method of anesthesia?	19 (14-24)	15 (11-20)	29 (24-34)	21 (16-27)*	32 (25-38)	27 (21-33)
Did the anesthesiologist tell you how you would feel after anesthesia?	40 (35-46)	38 (33-43)	39 (34-44)	40 (35-46)	51 (46-57)	51 (45-56)
Did you feel that the anesthesiologist gave you enough of his time?	16 (13-20)	15 (11-18)	22 (18-26)	17 (13-21)	22 (17-26)	18 (14-23)
Did you have enough privacy during this briefing session?	24 (19-28)	23 (18-27)	36 (31-41)	21 (16-25)*	31 (26-36)	24 (19-29)
At the start of anesthesia, did the anesthesia team keep you fully informed about what was happening to you?	16 (12-20)	15 (11-19)	27 (22-33)	28 (23-34)	22 (17-26)	25 (20-31)
Did the anesthesia team (anesthesiologist and anesthesia nurse) keep you fully informed about what was happening to you during the operation?	36 (27-46)	30 (17-42)	55 (44-67)	52 (38-66)	50 (41-59)	37 (26-48)
Mean problem score	26 (23-28)	24 (21-27)	32 (29-35)	28 (25-31)	34 (31-38)	32 (28-35)

Data are means in % (95% confidence interval). * $P < 0.05$ compared to 2000.

Table III shows the results of single-item analysis of the dimension 'information/involvement in decision making.' Although there was an improvement in some areas where concrete interventions were taken, for example 'information before anesthesia' in hospital B [problem score decreased from 45 (CI 40-50) to 32 (CI 27-37), $P < 0.001$] and 'privacy during preanesthetic talk' in hospital B [36 (CI 31-41) vs 21 (CI 16-25), $P < 0.001$] (Table III) the problem score of the whole dimension did not change significantly.

Discussion

The goal of the study was to evaluate if concrete measures dealing with 'information and involvement in

decision making' lead to an improvement of patient satisfaction with anesthesia care. The results clearly show that the total problem score remained unchanged.

In the present study we focused on items of the dimension 'information' where changes were expected, for example by improving privacy by providing single rooms in the preanesthetic care unit (intervention in hospital B). In this limited area there was an improvement.

Assessment of patient satisfaction with anesthesia care or interventions must use reliable and valid instruments.⁴⁻⁷ We found very similar psychometric qualities of the questionnaire between 2000 and

2002,³ demonstrating a high degree of stability of the instrument and its scales.

There are several potential reasons why we could not demonstrate an improvement of the total problem score. First, our strategies focused only on one dimension ('information and involvement in decision making') and not on other areas with a high problem score ('continuity of personal care by anesthesiologist') or a high importance ('respect and confidence').³ This resulted from an agreement of the participating hospitals which decided to focus primarily on the dimension with both a high problem score and a high importance. Second, we used a practical approach instead of a detailed breakdown of the interventions, as recommended by Hulscher *et al.*⁹ This means that each hospital took measures with a good chance of realization within their own department. The pragmatic nature of our design may have affected the results but it represents the real clinical impact of introducing leaflets and information campaigns. As Hulscher *et al.*⁹ further point out, it is also important to determine unsuccessful interventions, as in our case.

Another limitation is that we did not use evidence-based leaflets. Therefore the effectiveness of our leaflets in providing information is questionable. However, as O'Cathain *et al.*¹⁰ showed, even the use of evidence-based leaflets was not effective in promoting informed choice in women using maternity services.

A further limitation of the study is that we did not investigate the potential influence of improvement strategies directed towards 'information and involvement in decision making' on other dimensions, mainly 'continuity of care.' From an organizational point of view the preanesthetic visit is conducted more and more in preanesthetic care units (as in hospital B). As a result, the subsequent anesthetic is seldom administered by the same anesthesiologist.¹¹ This probably has an influence on the patient's perception of continuity of care and would therefore result in a dilemma, not only for the patient but also for the anesthesiologist and the process management of the hospitals, as recently pointed out by Simini *et al.*¹² We focused only on inpatients because outpatients were not visited systematically postoperatively by an anesthesiologist and, therefore, this would render comparisons difficult.

In conclusion, information campaigns and introduction or improvement of information leaflets alone do not improve patient satisfaction with anesthesia care. We believe that measures destined to improve patient satisfaction with anesthesia care should be accompanied by other measures, such as improvement in communication skills. Further studies will determine the most effective strategies to improve patient satisfaction.

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