AVALIAÇÃO DA SATISFAÇÃO COM OS CUIDADOS ANESTÉSICOS PELA APLICAÇÃO DO QUESTIONÁRIO DE HEIDELBERG NUMA POPULAÇÃO CIRÚRGICA PORTUGUESA

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Palavras-chave:
- Anestesia;
- Questionários;
- Satisfação do Doente

Resumo

Introdução: O nosso objetivo é aplicar o questionário "Heidelberg Peri-Anesthetic Questionnaire", em pacientes que receberam procedimentos eletivos em Cirurgia Geral, Vascular e Plástica, e confirmar as suas qualidades psicométricas, assim como estudar as influências das suas caraterísticas sociodemográficas e clínicas na satisfação.

Materiais e Métodos: Os 192 pacientes receberam o questionário de 32 itens por um membro do estudo, que não participou na equipa de anestesiologia que cuidou do paciente. Este mesmo questionário consistia em 4 dimensões (D1 – Equipa, D2- Medo/Ansiedade, D3- Solidão, D4- Desconforto). A entrega do questionário decorreu entre Julho e Outubro de 2013.

Resultados: Os resultados revelaram que todos os itens contribuíam para a consistência interna (Cronbach's α 0,614-0,826). O nível mais alto de satisfação verificou-se na Dimensão Equipa (D1) e o mais baixo na dimensão Desconforto (D4). Após uma análise de regressão linear múltipla, o género mostrou influência no Desconforto (D4) e Medo/Ansiedade (D2), com os homens a mostrar menor medo e ansiedade e menos desconforto. Também, pacientes com menos escolaridade mostraram-se mais satisfeitos com D1 assim como pacientes com consulta pré-anestésica.

Discussão: Estabelecemos uma correlação entre a consulta pré-anestésica e D1, evidenciando que estes pacientes se mostraram mais satisfeitos, provavelmente, devido a melhor comunicação e relação médico-doente. Não encontrámos uma correlação estatisticamente significativa no tipo e duração da anestesia, serviço cirúrgico, risco cirúrgico e estado físico ASA.

Conclusões: Globalmente podemos determinar que os pacientes estavam satisfeitos com os seus cuidados anestésicos e este questionário poderia facilmente ser aplicado na rotina diária e fornecer um *feedback* da prática anestésica durante o período peri-operatório.

EVALUATION OF SATISFACTION WITH ANESTHESIA CARE BY APPLIANCE OF HEIDELBERG'S QUESTIONNAIRE IN A PORTUGUESE SURGICAL POPULATION

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Keywords:
- *Anesthesia;*
- *Questionnaires;*
- *Satisfaction*

Abstract

Background: *Our aim is to apply the questionnaire "Heidelberg Peri-Anesthetic Questionnaire", on patients' receiving elective procedures in vascular, plastic and general surgery and confirm its psychometric qualities, as well as study the influence of their social-demographic and clinical characteristics on satisfaction outcome.*

Materials and Methods: *One hundred and ninety two patients were given a 32-item consensus version questionnaire by a member of the study who did not intervene in the patient's anesthesiology team. This questionnaire consisted of 5 dimensions (D1- Team, D2- Fear/Anxiety, D3- Loneliness, D4- Discomfort). Questionnaire delivery occurred between July and October 2013.*

Results: *The results revealed that all items contribute to instrument internal consistency (Cronbach's a 0.614-0.826). The highest satisfaction was associated with Team Dimension (D1) and the lowest satisfaction with Discomfort (D4). After a multiple linear regression analysis, gender showed influence on Discomfort (D4) and Anxiety/Fear (D2), with men showing less fear and less discomfort. Also, less literate patients were more satisfied with D1 as well as patients with pre-anesthetic consult.*

Discussion: *We established an important correlation between pre-anesthesia consult and D1 indicating that these patients were more satisfied probably due to communication and better doctor-patient relationship. We didn't find any significant effect of type and duration of anesthesia, surgical service, surgical risk and ASA physical state.*

Conclusions: *Globally we can determine that patients were satisfied with their anesthesia care and this questionnaire could easily be used in a day-to-day basis and could give a reliable feedback on the anesthesiologists' performance during perioperative period.*

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Introduction

The Royal College of Anesthetists (United Kingdom) states that "Reliable patient feedback will be a valuable indicator and source of supporting information of certain professional skills for appraisal and revalidation".[1]

Evaluation of healthcare is essential for quality improvement of services, but assessments usually give preference to technical and physiological reports of outcome.[2] The statement above reflects the importance of both technical and non-technical dimension of outcome. The technical outcome measures the abilities and skills of professionals and diagnostic or therapeutic procedures, whereas the non-technical dimension relates to a newly emerging concept in Anesthesia, the patients' subjective experience: satisfaction.[3] In fact, the majority of papers, published to date in this field of knowledge, compare anesthesia-related incidents and complications and not the quality of outcome, viewed as the satisfaction measure.[4]

Satisfaction is defined as a complex concept, including physical, emotional, mental, social and cultural factors. It is now regarded as a valid measure of outcome of healthcare, as it influences patients' compliance with procedures, treatments, relationship with physicians, among others.[5] As a complex concept, in anesthesia this is further intensified by the effect of drugs on cognition, short time interval of the anesthesia process and sometimes a strong emotional context.[5] Put simply, satisfaction, based on the theory of expectations, depends on the congruence between patients' expectations and reality.[6]

Anesthesiologists have been working for more than 40 years in the purpose of developing objective measures of patient satisfaction, though there is still lack of uniformly accepted methods for this evaluation.[7]

This study builds on important previous efforts made by Schiff *et al*, for measuring of patient satisfaction with perioperative services and takes as a foundation a 38-item pilot questionnaire designed as a psychometrically model, which has been proved as a valid and reliable tool.[8]

The questionnaire developed by Schiff *et al*, does not directly ask patients if they are satisfied with different aspects of care, but instead if certain events occurred during the course of the perioperative period. The events mentioned were proven to address important issues to patients, based on qualitative in-depth interviews with patients and focus group.[8]

Our aim is, regarding the "Heidelberg Peri-Anesthetic Questionnaire" developed by Schiff *et al*[8] and the Portuguese validation study conducted by Moura *et al*,[9] to confirm the psychometric qualities of this questionnaire and evaluate the influence of social-demographic and clinical characteristics, such as pre-operative consult, in satisfaction outcome.

Materials and Methods

Instrument

The "Heidelberg Peri-Anesthetic Questionnaire" consists of 38 items that are rated for preference on a four-point Likert scale (from 1 – unimportant - to 4 -very important). Factor analyses identified 5 dimensions to which every question could be assigned.[8] Trust and Atmosphere; Fear; Discomfort; Treatment by Personnel; and Information and Waiting. Internal consistency was demonstrated for the 5 factors (dimensions), with a Cronbach's α: 0.42-0.79.

The Heidelberg questionnaire validation study for Portuguese language studied the psychometric properties in 111 general surgery patients.[9] The study revealed only 3 emerging dimensions [X, Y, Z] in this population, with a Cronbach's α between 0.776-0.875 and a total explained variance of 42.6%. As suggested in this previous study, we added an item to the quality of sleep after surgery. The instrument implementation used Schiff *et al* recommendations.[8]

Study Design

The questionnaire in this study was given to Portuguese patients in Hospital de São João EPE, Porto. After approval by the Hospital's Ethics Committee, informed consent was obtained from all patients.

Sample size was determined by the number of participants needed for the development of factor analyses, using the recommendation of at least 5 participants per each item.[10]

Within 12-24 hours after surgery, patients were given the 32-item consensus version questionnaire by one of the investigators. The anesthesiology team responsible for the patient was blinded to the study. To maximize the return rate, all questionnaires were administered and collected before patients left the hospital. Questionnaires were delivered every Tuesday through Saturday from 9th July to the end of October 2013.

The inclusion criteria were: age equal or older than 18 years, ability to read and write Portuguese and elective surgery in one of three services (Vascular Surgery, General Surgery and Plastic Surgery).

Exclusion criteria were ambulatory surgery, urgent/emergent surgery and cognitive impairment.

For each patient the following data was collected: gender, civil state, highest education level, previous surgeries, type and duration of anesthesia, existence or absence of a previous anesthesia consultation, ASA physical state, surgical risk, time between end of surgery and questionnaire fulfillment, the time consumed for completing the questionnaire and the surgical

service where they had surgery.

Statistical Analysis

Cronbach's α was calculated for item internal consistency and exploratory factor analysis (EFA) was performed to determine item structure relation. We chose to replace the missing values by mean values to reinforce data analyses. The dimensions were determined after varimax-rotation[11] and the number of dimensions to retain was established by Scree Plot criteria.

To assess EFA adequacy we used Kaiser-Meyer-Olkin (KMO) test and The Bartlett Sphericity test.[12] Only items with factorial load ≥ 0.35 were included in dimensions. Items whose factorial loads were below 0.35 and commonality values below 0.2 were rejected.

Items with negative meaning had reverse score. Score for each dimension was obtained as the sum of the answers for each item that compose that dimension and converted as a percentage (0-100%). Maximum value (100%) represents maximum satisfaction in a dimension.

Data was summarized with mean and standard deviation (SD±). Univariate analysis was performed between patient's characteristics and dimensions found. To estimate the difference significance between mean values of the dimensions and social-demographic and clinical values we used T-student test and Variance Analysis.

Variables that revealed significance for p<0.20 in univariate analyses were included in a multiple linear regression model. Relation between patients' characteristics and dimensions was determined by regression coefficients and respective confidence intervals 95% (CI 95%).

For statistical analysis we used the software Statistical Package for the Social Sciences (SPSS) version 20.0. A value of p < 0.05 was considered statistically significant.

Results

In the study 192 patients participated and their social-demographic and clinical characteristics are displayed in Table 1. Questionnaires had a mean fulfilling time of 10.5 minutes.

Table 1 - Distribution of patients Social-Demographic and Clinical characteristics

		Count	Column N %
Sex	Male	72	37.7 %
	Female	119	62.3 %
Civil State	Single/widow/divorced	55	29.3 %
	Married/Civil Union	133	70.7 %
Highest education	Did not finish high school	128	67.0 %
	High school diploma	38	19.9 %
	College degree	25	13.1 %
	Post-graduate study	0	0.0 %
ASA Physical State	ASA I	51	27.4 %
	ASA II	93	50.0 %
	ASA III	42	22.6 %
	ASA IV - V	0	0.0 %

		Count	Column N %
Surgical RisK	Minor	81	43.3 %
	Medium	87	46.5 %
	Major	19	10.2 %
Anaesthesia Type	General	166	88.8 %
	Other	21	11.2 %
Anaesthesia time	≤ 120 min	95	52.2 %
	> 120 min	87	47.8 %
Pre-anaesthesia consult	No	121	63.4 %
	Yes	70	36.6 %
Previous surgeries	0	30	16.0 %
	1 - 2	78	41.7 %
	3 +	79	42.2 %
Surgical Service	General	111	59.4 %
	Vascular	29	15.5 %
	Plastic	47	25.1 %

Construct Validity and Internal Consistency

Initially we verified if item distribution suited 5 dimensions such as found by Schiff.[8] However, the 5 dimension solution as it was presented in the original version of the scale proved to be inadequate, as the 5th dimension would be composed of only two items with different theoretical contents, reason why we preferred the 4 dimension solution. Seven out of 39 items of the questionnaire were excluded for presenting low commonality values.

Analysis of the Scree Plot graphic (Fig. 1) suggested, in a more clear way, the 4 dimension solution proves to be more accurate.
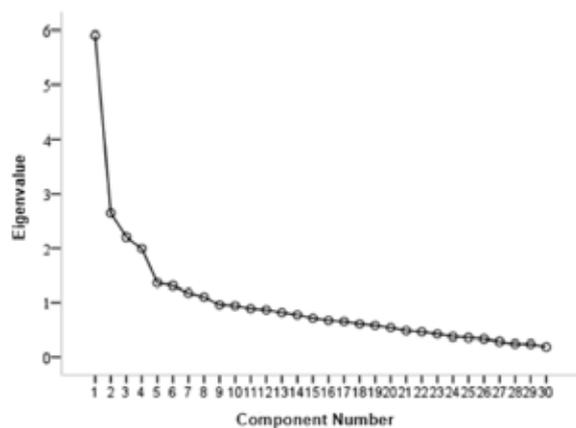

Figure 1 – Scree Plot of eigenvalues. The eigenvalues are the variables explained by each principal component and they diminsh from the first principal component to the last. If the eigenvalues are bigger than 1, it means the components explain more than the original variables.

Bartlett Spheicity test showed statistic significant results (p <0.001), indicating the items shared a common variance and were measuring the same variable (patient satisfaction, in our study) and KMO measure was 0.767, suggesting the variables measured more than one component.[12] In the KMO test, high values (0.5-1.0) indicate that factorial analyses is adequate, while low values (below 0.5) indicate that factorial analyses could be inadequate.

The validated scale remained with 30 items that had an expressive load in just one dimension. We excluded 9 items that

obtained commonality values <0.2 and factor load <|0.35| (10, 16, 17, 18, 21, 22, 23, 30, 31). The commonality is the proportion of the variance of each item explained by the solution factor, if that proportion is low it means the solution factor explains little of the item. Thus, there is no point including it. The factorial load is the correlation between the variable and the factor, the bigger it is more the factor explains the item.

The results obtained revealed that all items contribute to instrument consistency. Cronbach's α coefficient values for 4 dimensions presented consistency internal indexes between 0.614 and 0.826: Dimension 1 (D1)-Team: (α = 0.826), Dimension 2 (D2)-Fear/Anxiety: (α = 0.776); Dimension 3 (D3)-Loneliness: (α = 0.665) e Dimension 4 (D4)-Discomfort: (α = 0.614). The bigger the Cronbach's α coefficient values, the bigger the internal consistency of the questionnaire. In our case, D1 and D2 had good internal consistency and D3 and D4 had acceptable internal consistency.

Peri-anesthetic satisfaction

Considering the 4 dimension mean value, in a scale from 0 to 100 points, we verified the dimensions presented the following mean values: D1 (mean=90.8, ST±=12.0); D2 (mean=68.1, ST±= 26.5); D3 (mean=82.4; ST±=18.7); D4 (mean=62.1; ST±=21.9) (Fig. 2).

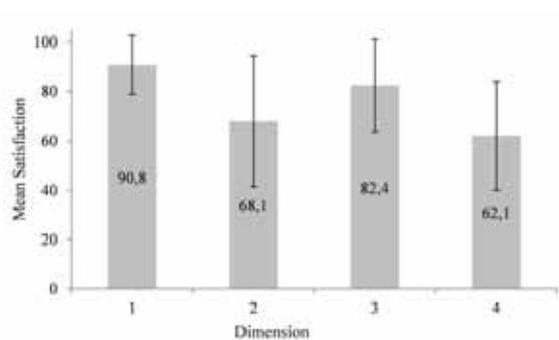

Figure 2 – Distribution of the 4 scale dimensions. D1 – Team. D2 – Fear/Anxiety. D3 – Loneliness. D4 – Disconfort. By the analysy of the graphic, we can see the highest satisfaction values were obtained in D1 (Team) while D4 had the lowest satisfaction score.

Effect of social-demographic and clinical characteristics in peri-anesthetic satisfaction

Univariate analyses demonstrated D1 dimension is influenced by highest education level (p=0.021) and pre-anesthetic consultation (p=0.012). D2 is influenced by gender (p=0.002) and surgical service (p=0.010). D4 is influenced by gender (p<0.001). (Table 2)

Table 2 – Comparison of Satisfaction Scores according to Social-Demographic Data and Clinical Characteristics

Variables	D1 Team Mean (SD)	p value	D2 – Fear/Anxietiy Mean (SD)	p value	D3 – Loneliness Mean (SD)	p value	D4 – Discomfort Mean (SD)	p value
Gender								
Male	90.9 (12.1)	0.959	75.6 (23.2)	0.002*	84.8 (17.7)	0.160	71.2 (22.0)	<0.001*
Female	90.8 (11.9)		63.6 (27.5)		80.9 (19.3)		56.4 (20.1)	
Civil State								
Single/divorced/widow	91.2 (11.4)	0.791	72.1 (26.0)	0.194	84.4 (18.9)	0.304	60.6 (22.3)	0.520
Married/Civil Union	90.7 (12.1)		66.6 (26.8)		81.3 (18.9)		62.9 (21.8)	
Highest education								
Did not finish high school	92.4 (10.8)	0.021*	69.7 (25.9)	0.436	82.9 (19.6)	0.852	63.3 (22.9)	0.176
High school diploma	89.8 (12.1)		66.5 (26.8)		81.3 (16.7)		63.7 (17.1)	
College degree	85.4 (14.4)		62.7 (26.6)		81.1 (17.7)		54.7 (21.9)	
ASA Physical State								
ASA I	89.4 (12.9)	0.177	62.9 (32.0)	0.180	79.3 (20.0)	0.106	56.4 (20.4)	0.106
ASA II	90.8 (12.1)		70.1 (22.6)		82.4 (20.1)		63.1 (22,7)	
ASA III	93.9 (9.4)		72.2 (27.8)		87.6 (12.9)		65.6 (22.4)	
Surgical Risk								
Low	91.7 (12.4)	0.572	67.0 (27.6)	0.435	83.6 (18.0)	0.797	61.1 (23.1)	0.904
Medium	90.2 (11.5)		68.3 (26.4)		82.0 (18.5)		62.2 (21.9)	
Major	92.7 (10.8)		75.7 (24.5)		81.0 (24.3)		63.4 (20.5)	
Type of Anaesthesia								
General	91.1 (11.6)	0.882	67.3 (26.9)	0.103	81.9 (19.2)	0.156	61.8 (21.5)	0.956
Local	90.7 (13.2)		77.4 (24.4)		88.1 (14.8)		62.1 (27.5)	
Duration of Anaesthesia								
≤ 120 min	91.6 (11.9)	0.518	70.5 (26.5)	0.231	81.6 (21.0)	0.594	61.8 (22.0)	0.984
> 120 min	90.5 (11.0)		65.7 (27.2)		83.1 (16.5)		61.7 (22.3)	
Pre-anaesthesia consult								
Without consult	89.1 (12.2)	0.012*	66.1 (26.9)	0.161	82.4 (19.5)	0.990	61.6 (22.0)	0.764
With consult	93.6 (11.5)		71.7 (25.6)		82.4 (17.6)		62.6 (22.0)	
Previous surgeries								
0	88.1 (12.6)	0.401	69.8 (21.3)	0.897	80.9 (17.0)	0.879	63.5 (23.0)	0.710
1 - 2	91.6 (10.5)		67.1 (25.3)		82.0 (19.8)		63.2 (21.2)	
> 2	90.6 (13.2))		67.7 (29.9)		82.9 (18.6)		60.6 (22.1)	
Surgical Service								
General	90.4 (12.2)	0.180	67.0 (25.5)	0.010*	81.2 (19.4)	0.318	60.7 (20.5)	0.293
Vascular	94.8 (7.7)		81.8 (21.7)		87.2 (20.0)		67.8 (27.0)	
Plastic	90.4 (12.6)		63.7 (30.2)		83.0 (16.7)		61.0 (22.5)	
* p value < 0.05								

After multivariate analysis, highest level of education and pre-anesthetic consult maintained a significant effect in D1 domain. Patients which did not finish high school were more satisfied with D1 compared with graduate and post-graduate patients (β=5.8; CI 95 %: [0.5;11.1]). Correspondingly, patients that attended a pre-anesthetic consult had higher levels of satisfaction in D1 (β=4.4; CI 95 %: [0.7;8.0]). (Table 3)

Table 3 – Association of D1 domain with patients' characteristics

Team (D1)	B (CI 95 %)	P value
Highest education		
Did not finish high school	5.8 (0.5;11.1)	0.033
High school diploma	4.1 (-1.8;10.0)	0.173
College degree	Reference	
ASA Physical State		
ASA I	0.1 (-5.7;5.8)	0.975
ASA II	-0.6 (-5.0;5.8)	0.804
ASA III	Reference	
Pre-anaesthesia consult		
Without consult	Reference	
With consult	4.4 (0.7;8.0)	0.021
Surgical Service		
General	Reference	
Vascular	3.7 (-1.2;5.6)	0.596
Plastic	1.2 (-3.2;5.6)	0.139

After multivariate analysis, gender and civil state maintained a significant effect in D2. Men felt less fear than women (β=11.5; CI 95 %: [3.2;19.8]). Furthermore, singles also felt braver than married patients (β=8.9; CI 95 %: [0.03;17.8]). (Table 4)

Table 4 – Association of D2 domain with patients' characteristics

Fear/Anxiety (D2)	B (CI 95 %)	P value
Gender		
Female	Reference	0.007
Male	11.5 (3.2;19.8)	
Civil State		
Married/Civil Union	Reference	
Single/Divorced/widow	8.9 (0.03;17.8)	0.049
ASA Physical State		
ASA I	0.9 (-12.0;13.9)	0.888
ASA II	5.8 (-4.4;16.1)	0.267
ASA III	Reference	
Anaesthesia Type		
Regional	Reference	
General	0.7 (-13.6;14.9)	0.923
Pre-anaesthesia consult		
No	Refence	
Yes	5.9 (-2.6;24.4)	0.173
Surgical Service		
General	Reference	
Vascular	12.2 (-2.2; 24.5)	0.053
Plastic	-2.1 (-12.2;8.0)	0.678

Significant effects were not found in D3. (Table 5)

Table 5 – Association of D3 domain with patients' characteristics

Loneliness (D3)	B (CI 95 %)	P value
Gender		
Female	Reference	0.403
Male	2.5 (-3.4;8.4)	
ASA Physical State		
ASA I	-6.4 (-14.8;2.1)	0.141
ASA II	-4.0 (-11.3;3.2)	0.275
ASA III	Reference	
Anaesthesia Type		
Regional	Reference	
General	-2.7 (-11.9;6.5)	0.562

Posterior to multivariate analysis, only gender provided a significant effect on D4, with men showing less discomfort than women (β=14.8; CI 95 %: [8.2;21.5]). (Table 6)

Table 6 – Association of D4 domain with patients' characteristics

Disconfort (D4)	B (CI 95 %)	P value
Gender		
Female	Reference	< 0.001
Male	14.8 (8.2;25.5)	
Highest education		
Did not finish high school	5.7 (-4.0;15.4)	0.245
High school diploma	8.0 (-2.7;18.7)	0.142
College degree	Reference	
ASA Physical State		
ASA I	-2.1 (-12.2;8.0)	0.684
ASA II	-1.6 (-6.4;9.6)	0.685
ASA III	Reference	

Discussion

Patient satisfaction is an important indicator of health care outcome and provides an insight of service quality in anesthesiology. In the increasing competition for patients among health insurance carriers, health maintenance organizations, and hospitals, satisfying the patient becomes a priority, in a business point of view.[13]

Furthermore, as patient satisfaction is proved to correlate with patient behaviors and compliance, more satisfaction will probably mean improved continuity of care.[13]

Many studies emphasized lack of standardized and valid instruments to assess patient satisfaction in anesthetic care.[6] The development of satisfaction questionnaires is relatively recent, as patient satisfaction was acknowledged as an indicator of the quality of practice for specialties such as anesthesia. Therefore, these questionnaires should be used to assess patient satisfaction as an outcome of anesthesia care.[6]

Most of previous projects to develop questionnaires on patient satisfaction paid little or no attention to involvement of patients when developing the question items and used single-item questions and yes/no or Likert response formats, which have yielded uniformly high scores, thus lacking reliability and validity.[4,6]

When multi-item scales are used, we can achieve more discrimination.[3] However, lower scores are significant only if those items represent the determinants most important to patient satisfaction, which is represented by content validity. Otherwise, evaluations reproduce only the biases of the physicians who constructed them.[6]

The "Heidelberg Peri-Anesthetic Questionnaire" has undergone validation at three different hospitals.[8] Besides considering potential confounding variables and cognitive methods, it puts emphasis on patients' concerns.

This original questionnaire was previously translated to Portuguese language and validated in another study.[9] We decided to proceed with this validated study and explore the effects of different social-demographic and clinical factors on satisfaction in anesthesia practice.

As we used a more heterogenic sample than Moura et al, we found 4 dimensions which suited better than the 5 dimensions presented by Schiff et al,[8] therefore excluding 2 items of the questionnaire.

The results of confounding variable analysis showed that there are statistical significant relationships between pre-anesthetic consult, highest school education, gender and civil state and different dimensions. In literature, the effects of these characteristics on satisfaction are inconsistent.

In a European study,[14] regarding fear and anxiety with anesthetic experience, there were no significant differences regarding literacy and previous surgeries, which is similar to our study (Fear and Anxiety = D2).

Regarding gender, we realized men are more satisfied when compared to women only on D2 and D4, reproducing the results of Moura et al, which also displayed better values for men only in these two dimensions. We also established a correlation between pre-anesthesia consults and D1, evidencing these patients were more satisfied probably due to better communication and doctor-patient relationship. In Moura et al,[9] values of satisfaction on D1 are also significantly influenced by pre-anesthesia consultation, although we found a more sustained evidence (p=0.012 in our study vs p=0.040 in Moura et al). Therefore, this proved to be an accurate and strong conclusion in both studies. In our study, D1 is also influenced by highest education, supporting that the higher education is associated with less satisfaction. This is a variable not studied by Moura et al[9] and that has proven its influence on the results and should therefore be regarded in future studies, as a potential confounding factor.

There was no significant effect of type and duration of anesthesia, pointing the satisfaction was universal regarding the different procedures. We also did not find relationships between surgical service, surgical risk and satisfaction, and, more surprisingly, there was no significant effect of ASA physical state on each satisfaction dimension. However, many previous studies supported a positive correlation between health status and satisfaction.[4]

As in other studies[14] we did not prove a significant correlation between the results and number of previous surgeries.

The authors of the original scale[8] and Moura et al[9] noted patients submitted to regional anesthesia had some limitations filling the questionnaire, a bias not sustained in our work.

We should also notice that high levels of satisfaction are found in many studies, independently of the evaluation instrument for satisfaction used. Fung et al[6] referred satisfaction could be perceived as a sense of gratitude towards the medical staff. In fact, "social desirability bias" is a recognized concept that transmits the tendency of respondents to answer questions in a manner that will be viewed favorably by other.[6] This bias poses a serious problem with our study and others alike, interfering with interpretation of results. To minimize this "social desirability bias" we followed Moura et al[9] recommendations and the questionnaire was given to the patient by a member of the study, who did not intervene in the anesthesia care of the patient. Furthermore, the patient was left alone filling the questionnaire.

Our study also presents limitations: the small sample size (192 patients) probably contributed to a low power to detect differences between dimensions and effects of variables. Although promising and consistent with previous results shown by Moura et al[9] in the same hospital, other studies should be conducted in larger samples and other Portuguese hospitals.

Conclusions

The results here displayed support that this questionnaire could easily be used in a day-to-day basis and could give a reliable feedback on anesthesiologists' performance during perioperative period.

As Schiff et al suggested[8] we could also cross-validate this questionnaire with others regarding aspects such as social desirability, hospital stay and surgery aspects (wound infection, etc), improving its performance of evaluating the professional's work. Probably other important correlates of satisfaction will be recognized with detailed research with patients either in-hospital ones or after they returned home.

Conflict of Interest

All authors declare that they participated in the work, are responsible for it and that there is not, in any part of the Authors' conflict of interest in the claims made in the work.

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QUESTIONÁRIO AO PARTICIPANTE

Assinale a resposta que corresponde à sua opinião, considerando a seguinte escala:	Discordo Plenamente	Discordo	Concordo	Concordo Plenamente
1. Antes da cirurgia, tempo de espera pelo anestesiologista foi longo.				
2. Antes da cirurgia, o contacto com o anestesiologista foi efetuado num ambiente agradável.				
3. O anestesiologista, que o contactou antes da cirurgia, deveria ser mais simpático.				
4. O anestesiologista, que o contactou antes da cirurgia, parecia estar com pressa.				
5. O anestesiologista, que o contactou antes da cirurgia, não deu informação suficiente.				
6. A informação dada pelo anestesiologista, que o contactou antes da cirurgia, foi fácil de perceber.				
7. O medo da anestesia foi importante para si.				
8. O medo da cirurgia foi importante si.				
9. Na noite antes da cirurgia sentiu-se calmo.				
10. A cirurgia foi adiada para outro dia.				
11. Antes da cirurgia sentiu um medo incontrolável.				
12. O tempo de espera no dia da cirurgia foi longo.				
13. Sentir-se sozinho/a incomodou-o/a.				
14. O medo ou agitação no momento antes da anestesia foi importante para si.				
15. A sede antes da anestesia foi um problema para si.				
16. Sentiu frio ou tremor na sala onde foi anestesiado/a.				
17. Dor antes da anestesia causou-lhe ansiedade.				
18. A anestesia decorreu exatamente como o anestesiologista lhe tinha explicado.				
19. O ambiente na sala onde foi anestesiado/a era agradável.				
20. Os membros da equipa cuidaram bem de si e foram prestáveis enquanto era anestesiado/a.				
21. O acordar da anestesia foi confortável.				
22. Depois de acordar da anestesia, sentiu dor na zona onde foi operado/a.				
23. Não teve dor nenhuma ou quase nenhuma noutras áreas do corpo após a cirurgia (por exemplo, cabeça).				
24. Os membros da equipa mostraram que estavam verdadeiramente preocupados com a minha dor.				
25. Os membros da equipa rapidamente aliviaram a minha dor.				
26. As náuseas ou vómitos foram um problema após a anestesia.				
27. A rouquidão ou dor de garganta foi um problema após a anestesia.				
28. A fraqueza muscular foi um problema após a anestesia.				
29. A sede foi um problema após a anestesia.				
30. Uma necessidade urgente de urinar foi um problema para si.				
31. A sensação de frio ou tremor foi um problema após a anestesia.				
32. Foi difícil respirar após a anestesia.				
33. O cansaço ou a incapacidade de concentração foi um problema após a anestesia.				
34. Imediatamente após acordar da anestesia, os membros da equipa estavam disponíveis para me ajudarem.				
35. Os membros do recobro ou unidade de cuidados intensivos eram simpáticos.				
36. A recuperação após a anestesia correu bem.				
37. Na noite após a cirurgia sentiu-se calmo.				
38. Sentiu que podia confiar na equipa de anestesia.				
39. Pôde ter a certeza que o anestesiologista tomava as decisões tendo em conta o melhor interesse do doente.				