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What do Patients Know about the Work of Anesthesiologists?

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Summary: Oliveira KF, Clivatti J, Munechika M, Falcão LFR – What do Patients Know about the Work of Anesthesiologists?

Background and objectives: Modern international studies portray the lack of knowledge of patients regarding the education and role of anesthesiologists. There are no current data on this subject in the national scenario. The objective of this study was to assess the level of knowledge of patients about the education and areas of performance of these specialists.

Methods: This is a prospective study undertaken at a tertiary university hospital in São Paulo. During an 18-month period preoperative patients were interviewed. The data were analyzed by the Fisher's exact test, Chi-square test, and Mann-Whitney test according to the variable investigated. In the study, an α risk ≤ 0.05 of making a type I error was considered.

Results: Four hundred patients, 203 (50.75%) males and 197 (49.25%) females, aged between 18 and 89 years were included in this study. A total of 207 patients (51.75%) recognized anesthesiologists as physicians. Two hundred and eighty-nine (72.25%) patients answered that anesthesiologists care for patients during surgeries, while 256 (64%) did not know that anesthesiologists determine whether patients are fit to undergo surgery. A statistical correlation was observed between the level of schooling and the presence of prior experience with anesthetic-surgical procedures and the correct response to the medical education of anesthesiologists. A significant difference was not observed between the group of patients who underwent pre-anesthetic evaluation and those that did not undergo the evaluation regarding the knowledge of the medical education of anesthesiologists.

Conclusions: A large proportion of patients have a limited knowledge about the education and role of anesthesiologists. Pre-anesthetic evaluation did not increase the proportion of answers that anesthesiologists have medical education.

Keywords: Anesthesiology; Knowledge, Attitudes and Health Practice.

INTRODUCTION

Modern anesthesia demands that anesthesiologists have an encompassing medical knowledge to make vital decisions in a short time. In Brazil, nine years of dedication from medical school to the scarce medical residency positions are required to educate this professional. Even being a professional with a complex education, recent international studies show that patients do not recognize this [1,2].

Although it is controversial to state that the knowledge of patients about the education of anesthesiologists translates into benefits to them, several studies have been conducted to portray the public perception in relation to anesthesiologists [1-4].

In 1993, a Brazilian study conducted in a university hospital showed that only 50% of patients recognize anesthesiologists as physicians, while more than 20% did not know the role and attributions of professionals responsible for anesthesia [5].

In 1996, on a review on the subject in developed English-speaking countries, Klafta and Roizen [3] observed that between 50% and 88% of patients knew that their anesthesiologists had medical education, but a smaller number knew of their responsibilities in the perioperative period. In the study with the highest percentage, patients underwent prior preoperative orientation by the anesthesiologist or through a recording. Both types were highly effective in orienting patients regarding the education and role of anesthesiologists [6].

Shevde and Panagopoulos [7] did not observe differences when comparing patients with prior anesthetic experience and those in their first anesthesia regarding the level of concern with the procedure. The patients were also asked to indicate the level of confidence regarding the anesthesiologist. The results showed a high level of confidence without significant statistical difference between groups.

Based on these data, the objective of the present study was to portray the current scenario of patient knowledge regarding the education and role of anesthesiologists in a Brazilian university hospital, as well as evaluate its correlation with patient schooling, pre-anesthetic consultation, and prior anesthetic experience.

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METHODS

This study was approved by the Ethics on Research Committee of Universidade Federal de São Paulo and conducted from January 2008 to July 2009.

This is a prospective study undertaken at a tertiary university hospital in São Paulo. Inclusion criteria were as follows: older than 18 years of age, admission to the surgical ward in the preoperative period, and signing of an informed consent. Exclusion criteria were refusal to answer the questionnaire and the impossibility to answer the questionnaire due to altered mental status. The data investigated included gender, age, anesthetic history, and questions regarding the knowledge about anesthesiologists and the anesthetic procedure.

Data were analyzed by the Fisher's exact test, Chi-square test, and Mann-Whitney test according to the type of variable investigated. An α risk ≤ 0.05 of a type I error was considered.

RESULTS

Four hundred patients admitted to 10 surgical specialties, 203 (50.7%% males) and 197 (49.25%) females, ages between 18 and 89 years, were interviewed. The most prevalent educational level of patients interviewed was elementary education (up to the last year of junior high school), at 55.5% (Table I).

Regarding prior anesthetic-surgical experience, 131 (32.75%) patients had already undergone three or more procedures, 64 (16%) two procedures, 97 (24.25%) one procedure, and 108 (27%) had never undergone anesthesia. Two hundred and eighty-eight patients (72%) did not undergo preanesthetic evaluation.

Patients were questioned regarding the academic education of anesthesiologists. They were given six alternatives, including 'I do not know". Answers are in Table II.

When questioned about what the anesthesiologist does during the procedure, 289 (72.25%) answered that he takes

Table I – Schooling

Schooling	Nº	%
None	25	6.25
Junior high school	222	55.5
High school	98	24.5
University	55	13.75

Table II – Academic Education

Which professional anesthesiologists are?	Nº	%
Physician	207	51.75
Technician	56	14
Nurse	44	11
Paramedic	43	10.75
Physiotherapist	8	2
I do not know	42	10.5

Table III – Anesthesiologist Attributions

Is it the work of anesthesiologists?	Yes (%)	No (%)	I do not know (%)	Right answer (%)
To suture the skin at the end of surgery	33 (8.25)	340 (85.0)	27 (6.75)	85
To take X-rays during surgeries	33 (8.25)	325 (81.25)	42 (10.5)	81.25
To make sure the patient awakes without problems	302 (75.5)	73 (18.25)	25 (6.25)	75.5
To give surgical instruments to the surgeon	75 (18.75)	293 (73.25)	32 (8.0)	73.25
To determine whether the patient is fit for surgery	256 (64.0)	111 (27.75)	33 (8.25)	64
To control the heart rate and blood pressure	256 (64.0)	101 (25.25)	43 (10.75)	64
To guarantee the patient is not vomiting after the surgery	209 (52.25)	147 (36.75)	44 (11.0)	52.25
To guarantee the patient does not have pain after the surgery	176 (44.0)	195 (48.75)	29 (7.25)	44
Administer medications and fluids	141 (35.25)	214 (53.5)	45 (11.25)	35.25
Transfuse blood if necessary	90 (22.5)	246 (61.5)	64 (16.0)	22.5

care of the patient, 59 (14.75%) believed the anesthesiologist anesthetizes other patients, 27 (6.75%) answered that he leaves the room and only returns at the end of the procedure, and 25 (6.25%) did not know.

Patients were also questioned about the attributions of the anesthesiologist during surgery. The results are shown in Table III.

We asked patients whether they know who is responsible for deciding the type of anesthesia used. Two hundred and forty-eight patients (62%) answered the surgeon along with the anesthesiologist, 80 (20%) the surgeon alone, 52 (13%) the anesthesiologist, and 8 (2%) that the patient decides the type of anesthesia used.

Three hundred and two patients (75.5%) of patients knew it is the role of the anesthesiologist to make sure the patient awoke from the surgery without problems. However, very few thought the anesthesiologist was responsible for relief of postoperative pain (44%), infusion of fluids and drugs during the surgery (35.25%), as well as the decision to transfuse blood (22.5%).

Some places that anesthesiologists work were listed and patients were questioned about them. Three hundred and forty-three (85.75%) patients knew there is an anesthesiologist in the delivery room, 290 (72.5%) answered that he works in the ICU, 282 (70.5%) answered that he can work in the emergency room, 259 (64.75%) stated that the anesthesiologist works in small surgery outpatient clinic, 229 (57.25%) knew that anesthesiologists also undertake medical research, and 168 (42%) knew that pain is also an area where anesthesiologists work.

The answer on the professional education of anesthesiologists was analyzed according to the schooling of the patient, the presence of pre-anesthetic evaluation and the patient's prior experience with the anesthetic-surgical procedure. Analysis of tendency showed that the higher the schooling, the higher the probability of a patient to answer correctly, i.e., that anesthesiologists have medical education ($p < 0.01$), by the Chi-square test for tendency ($\chi^2 = 10.27$). Prior experience with anesthetic-surgical procedures was also a factor that increased the probability of knowing that anesthesiologists are physicians ($p < 0.001$), for the Fisher's exact test (RR = 1.59; 95%CI: 1.22 to 2.09). However, a significant difference was not observed in the answers between the group that underwent pre-anesthetic evaluation and those who had not spoken to the anesthesiologist ($p > 0.05$), for the Chi-square test ($\chi^2 = 2.12$; RR = 1.17; 95%CI: 0.96 to 1.43).

Finally, we asked patients to indicate a score between 0 and 10 that reflected the importance of the surgeon and anesthesiologist for the procedure he/she was going to undergo. The mean score of the importance of the surgeon was 9.68 ± 0.84 and the anesthesiologist, 9.5 ± 1.18, which did not show statistically significant difference ($p > 0.05$).

DISCUSSION

Despite the increased contact of anesthesiologists with patients through pre- and post-anesthetic visits, and the increased availability of information the knowledge of patients about the work of anesthesiologists is limited and has changed little in the last decades [1,4].

Among the subjects in this study only half knew that anesthesiologists are physicians (51.75%), while technical education was the second most mentioned (14%). This study observed percentages lower than those in developed countries where more than 60% of patients know anesthesiologists are physicians [4,6-11]. A 1993 [5] Brazilian study showed that 58% of patients knew that anesthesiologists are physicians with a specialization. They discussed whether this might not reflect the general population, since the study was conducted at a university hospital in which a large proportion of workers were residents, fact that was known to the majority of the local population. The same can be said about the hospital of the current study, despite the lower percentage of correct answers.

Schooling was a statistically significant factor to define patients who knew about the medical education of anesthesiologists, which might be explained by the fact that individuals with better intellectual level look for more information and show more coherent assimilation. The same correlation was observed in a study in a developing country [1] whose subjects had schooling levels ranging from none to complete university education. On the other hand, in developed countries, more than half of subjects have more than 10 years of schooling [2,12], which might influence the perception of the education of an anesthesiologist.

The present study demonstrated a significant correlation between well-informed patients about the medical education of anesthesiologists and prior anesthetic experience. This data is different from that of an Israeli study [2] that did not demonstrate differences between the group of patients who had prior anesthetic experience and the ones in the first exposure to anesthesia. However, both groups were homogenous, including the high socioeconomic level of the subjects, which may make the population better informed about medical issues.

American studies [6,7] indicate that patients do not know the role of anesthesiologists after anesthetic induction. Less than half knew that anesthesiologists monitor intraoperative breathing and hemodynamic parameters. Prophylaxis of postoperative pain and of nausea and vomiting were also weakly attributed to anesthesiologists. In the present study more than half of the subjects attributed anesthesiologists the role of "determining whether the patient is fit for surgery" and hemodynamic monitoring, besides ensuring the absence of postoperative vomiting.

A large part recognized anesthesiologists as having an important role in determining whether patients are fit for surgery, but the majority believes that the decision regarding the type of anesthesia belongs to the surgeon in association with the anesthesiologist.

In the present study the pre-anesthetic visit was not a determining factor for the comprehension of the medical education of anesthesiologists. A statistical significant difference between individuals who received pre-anesthetic visitation before the interview and those who had not been evaluated was not observed. However, comparing the mean scores of the importance patients gave surgeons and anesthesiologists

a statistically significant difference was not observed between both professionals, even though half of the patients did not recognize the medical education of anesthesiologists.

Among the objectives of the pre-anesthetic visit this is the moment to establish the physician-patient relationship, elucidate doubts regarding the anesthesia, and to orient patients regarding the planed procedure [4]. Some studies [1,2,5,12] have discussed that patient orientation in the pre-anesthetic visit is a way of publicizing the image of the professional and achieving patient recognition, besides reducing anxiety regarding the procedure.

This study concluded that patients have little knowledge about the role of anesthesiologists and that it has not changed in the last 18 years. Patients did not attribute anesthesiologists a fundamental role in perioperative care, such as deciding the type of anesthesia, transfuse blood, and treat postoperative nausea and pain, indicating the need to improve the spread of information during pre-anesthetic consultation.