

Patient's Knowledge of Anesthetic Practice and the Role of Anesthetists during COVID-19 Pandemic

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ABSTRACT

Introduction: Anesthesiologists play a vital role in perioperative and critical care medicine. The aim of the study was to assess the knowledge of patients' knowledge about the in-hospital role of anesthetists, anesthesia techniques and awareness during surgery.

Materials and methods: A survey composed of 13 close-ended questions (3 about demographic information and 10 anesthesia related), was submitted to 1400 patients during the pre-anesthesia visit between 10/01/2021 and 31/05/2021.

Results: We included in the analysis 1400 questionnaires. The role of anesthesiologists in the perioperative management was known by 1267 (90.5%) patients and the role of surgeons by 1143 (81.7%) patients. Knowledge on the anesthesiologist was obtained from personal or relatives' previous experiences (56.3%) or their family doctors (26.9%). Patients believed that anesthesiologists put people asleep while monitoring vital functions (44.1%) and authorize surgery (31.4%). Patients had fears of general (42.5%) and spinal/epidural (36.8%) anesthesia, more frequently related to death during anesthesia (34.6%) or to intra-operative pain (25.2%).
Conclusion: During COVID-19 pandemic, patients had knowledge about the role of anesthetists and anesthetic practice. However, information should be improved by supplying more educational material before the surgical procedure.

Keywords: Anesthesiology; Survey; Patients

INTRODUCTION

The COVID-19 pandemic has given prominence to the anesthesiology branch, often misunderstood, and not valued as much as other specialties [1]. The spirit of sacrifice shown by colleagues has confirmed the dedication to this profession. The period of health crisis offered the opportunity to emphasize how little has been done in recent years to facilitate and make public the daily work of anesthesiologists. Even before pandemic, the

situation in most hospitals was critical due to the lack of anesthesiologists needed for many medical and surgical branches [2]. Over the past few decades, anesthesiology as a specialty has seen a transition and made a huge impact on the way surgeries are being conducted and the type of care given to the patient. The role of anesthesiologists in the present era is not only confined to the operation theatre, but also emergency medicine, intensive care unit, and trauma center as well as chronic pain management [3]. However, there is minimal among the patients

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about the tasks played by anesthesiologists. Moreover, patients' awareness of the roles of anesthesiologists even in the operating room is limited, as reported in several studies [4-6]. The purpose of the present study was to assess the knowledge of patients about the in-hospital role of anesthesiologists, anesthesia practice and awareness during surgery.

MATERIALS AND METHODS

The questionnaire and informed consent were submitted to all patients who underwent the pre-anesthesia visit for surgical interventions, between 10/01/2021 and 31/05/2021, at Policlinico Universitario Campus Bio-Medico (number of local IRB approval: 105.21) Hospital of Roma (Italy).

The survey is presented in Supplementary Figure 1 and included 13 close-ended questions and it was organized in two main sections. The first section included questions about demographic information i.e., (1) Age, (2) Sex (3) and education. The second section, ten multiple-choice questions 4-13, aimed to evaluate the knowledge of the professional figure of the anesthesiologist and his fundamental role before, during and after the surgery, as well as the correct role of the surgeon: who deals with the surgical part of the operation. Answers given to items 5-13 in the table and explore basic knowledge of how anesthesia is performed, including the anesthesiologist's role in the perioperative management of patients and outside operating room such as critical care, pain clinic, and labor analgesia. We analyzed how many patients selected one or more responses at items 4,6,7,11 and 12 and then we calculated which modes have mostly been chosen. The Question 9 explored how much patients were interested to six different aspects of anesthesia and surgery; patients were free not to answer to each item proposed and identified as Non-Available (NA). Answers have been analyzed by explanatory analysis using R studio software Version 1.3.959 [7-10].

Socio-demographic characteristics

The questionnaire was answered by 1400 patients (response rate 100%) between 10/01/2021 and 31/05/2021. At the time of anesthesia, 48 (3.4%) patients were younger than 25 years (no one under the age of 16), 413 (29.5%) were between 25 and 49

years, 743 (53.1%) between 50 and 74 years, and 176 (12.6%) were older than 75 years; 1.4% of data was NA; 583 (41.6%) of patients were male, 119 (8.5%) did not respond. Most patients, i.e., 638 (45.6%), had high-school diploma, 337 (24.1%) had middle-school grade, 311 (22.2%) were graduates at university, just 85 (6.1%) and 8 (0.5%) had primary or no education, respectively; 1.5% of this information is NA. The answers to different items are presented in Table 1. Among enrolled patients, 1267 (90.5%) correctly described the professional figure of the anesthesiologist (5), 1166 (83.3%) knew how anesthesia was administrated (10), 897 (64.1%) could correctly identify anesthesiologist's course of study (13) and 1143 (81.7%) knew the role of surgeon (8). 165 (11.8%) patients found information about anesthesia techniques in more than one way, 1136 (81.1%) in just one: the most common information source was direct or indirect experience (56.3%), doctors (26.9%) while other options were reported in less than 25% of cases (4). Patients have been asked to indicate the concerning the professional role of anesthesiologists: 477 (34.1%) pointed out just one role, 870 (62.1%) more than one: putting the patient to sleep and monitor vital functions (44.1%) as well as giving the authorization for surgery (31.4%) Among respondents 634 (45.3%) believed that anesthesiologists worked just in one hospital setting, 726 (51.8%) in at least two: operating room was the most common reported option (48%). On one hand, 1033 (73.8%) patients were afraid of one type of anesthesia, 145 (10.4%) of two, 34 (2.4%) of three, 12 (0.9%) of four, and 9 (0.6%) of all of them [11-14]. The general anesthesia was most frequently reported to generate fear among patients (42.5%), followed by spinal and/or epidural anesthesia (36.8%). Patients were concerned about anesthesia-related complications: 869 (62.1%) indicates just one kind of complication and 411 (29.3%) more than one: respondents selected "do not wake up from anesthesia (death)" (34.6%) and feeling pain during surgery (25.2%) (12). Some patients wanted to know in advance how long the surgery would take (57.1%), how doctors would have dealt with their post-operative pain (47.2%), knowing all anesthesia options available for the surgery (42%), and possible anesthesia complications (50.1%). Respondents declared to have low interest in anesthesiologist's qualifications (49.1%) and in which drugs they are using during different anesthesia techniques (43.6%) (Table 1).

Items	n° (%)
Age	
<25 yrs	48 (3.4)
25-49 yrs	413 (29.5)
50-74 yrs	743 (53.1)
>75 yrs	176 (12.6)
N.A.	20 (1.4)

Sex			
Female	698 (49.9)		
Male	583 (41.6)		
N.A.	119 (8.5)		
Education			
No education	85 (6.1)		
Primary education	8 (0.5)		
Middle-school grade	337 (24.1)		
High-school diploma	638 (45.6)		
Graduated at University	331 (22.2)		
N.A.	1 (1.5)		
Where the information about anesthesia was obtained?			
Personal or Familiar Experiences	842 (56.3)		
Doctors	402 (26.9)		
Internet search	132 (8.8)		
Information booklets	52 (3.5)		
Tv/film series	36 (2.4)		
Newspapers or general magazines	32 (2.1)		
Items	n° Correct Answer (%)	n°Wrong Answers (%)	n° Missing Answers (%)
Role of the Anesthesiologist	1267 (90.5)	114 (8.1)	19 (1.4)
Items	n° (%)		
Indicate the activities performed by the Anesthesiologists			
Putting the patient to sleep and monitoring vital functions	1223 (44.1)		
Giving pre-operative clearance	871 (31.4)		
Managing the critically ill patients in ICU and in emergency	320 (11.5)		
Managing post-operative pain and chronic pain	253 (9.1)		
Monitoring for blood loss during surgery	53 (1.9)		
Administering blood transfusion if needed	47 (1.7)		
Taking X-rays during surgery	7 (0.3)		
Indicate in which setting the anesthesiologist is needed			
Operating room	1355 (48.0)		

Intensive care unit	497 (17.6)		
Delivery room (obstetrics)	459 (16.2)		
Emergency room	240 (8.5)		
Pain medicine clinic	212 (7.5)		
Haemodynamic room	52 (1.8)		
Blood bank	10 (0.4)		
Items	n° Correct Answer (%)	n° Wrong Answers (%)	n° Missing Answers (%)
The operating surgeon	1143 (81.7)	191 (13.6)	66 (4.7)
Where does general anesthesia take place?	1166 (83.3)	145 (10.3)	89 (6.4)
Items	n° (%)		
What Types of Anesthesia do you fear mostly?			
General anesthesia	645 (42.5)		
Spinal/epidural anesthesia	559 (36.8)		
Nerve block	149 (9.8)		
Local anesthesia	106 (7)		
Sedation	59 (3.9)		
What Complication of Anesthesia do you fear mostly?			
Don't wake-up from anesthesia	682 (34.6)		
Feeling pain during surgery	496 (25.2)		
Waking up during the surgery	376 (19.1)		
Nausea and vomiting after surgery	224 (11.4)		
Memory loss after surgery	192 (9.7)		
Items	n°CorrectAnswer (%)	n° Wrong Answers (%)	n°Missing Answers (%)
Course of study to get specialization as anesthesiologist	897(64.1)	396 (28.3)	107 (7.6)

Table 1: Questionnaire's Answers.

DISCUSSION

In the present survey performed during COVID-19 pandemic and including 1400 patients, we found that: 1) anesthesia represents a topic of interest for patients understanding its relevance in the diagnostic and therapeutic path; 2) direct or indirect experience is the most common information source about anesthesia; 3) patients fear both general and spinal/epidural anesthesia, possible death as well as intra-operative

awareness and feeling pain during the surgical procedure. This observation points out how much the patient still trusts mostly of direct and/or family experience, rather than completely relying on healthcare professionals [15-17]. This should prompt us towards the need of encouraging the use of more effective ways of communication between anesthesiologists, patients, and families. In most cases (62%), patients believe that anesthesiologists have more than one role during their work mainly "putting the patient to sleep", "monitoring vital

functions”, and “giving the authorization for surgery”. The patient can learn about these issues by using personal direct experience as a way of information rather than obtaining in-depth knowledge of anesthesiology profession. Patients fear possible complications of anesthesia, especially “do not wake up from anesthesia” in 35% of cases and “feeling pain during surgery” in 25% of cases [18-20]. This aspect related to the anesthesia procedures put in evidence how it is important to promote a through education and communication with the patients. Patients wish more information on some fundamental aspects of anesthesia and diagnostic/therapeutic path, mainly the duration of surgery (57%), how doctors will deal with post-operative pain (47%), different available anesthesia techniques (42%), as well as possible anesthesia and perioperative complications (50%). These data confirm how important it is to provide as much detailed and exhaustive information as possible in the pre-operative period. Instead, patients are not very interested in anesthesiologist's qualifications (49%) and in which drugs are going to be used during the procedure (44%). This suggests that patients have confidence with the qualification obtained by the anesthesiologists and training. In a similar survey, about patient's perception of anesthesiologists' job tasks and about expectations for anesthesia care, 91.3% of patients wished to receive more information about anesthesia and 77.4% anesthesiologist professional figure. Authors suggested that more efforts should be made to improve patient's education about anesthesia. This was especially true for older and less educated patients [9,10].

Another survey, about anesthetic preference and preoperative anxiety in hip and knee arthroplasty patients focused how the preoperative anesthesia could represent an important educational moment such as to influence the choice of the type of anesthesia by the patient helping to reduce preoperative anxiety. COVID-19 pandemic represented an opportunity to increase the professional visibility of anesthesiologists. 8-16 patients can now better understand the central role of anesthesiologists in health care organization, not only during surgery but also in emergency medicine, critical care, as well as chronic pain management.

CONCLUSION

Data from this survey shows that during COVID-19 pandemic, patients have knowledge about the role of anesthesiologists and anesthesia practice. Information to patients should be improved by providing more educational material before the surgical procedure.

SUPPLEMENTARY INFORMATION

The survey is presented in supplementary in English language.

DECLARATION

Ethics approval and consent to participate

This study was conducted in accordance and approved by the ComEt UCMB (Ethics committee Università campus Bio Medico, Roma, Italy) number of local IRB approval: 105.21.

Trial registration 2021.198, 21/09/2021. Observational monocentric study with anonymous questionnaire between 10/01/2021 and 31/05/2021. The informed consent was submitted to all patients. All methods were carried out in accordance with relevant guidelines and regulations.

Consent for publication

Not applicable.

Availability of data and materials

All data generated or analysed during this study are included in this published article.

Competing interests

There is no conflict of interest to report. The study was approved by the ethics committee on 28 September 2021, evaluating favorably. The Scientific validity and ethical justification of the study as to rationale and objectives and the correctness of the experimental design, justification of the sample size and of the plan Statistical. Adequacy of the information provided to the trial subjects and of the request procedures of consent. Safeguarding the rights, safety and well-being of the subjects participating in the study. Adequacy of the foreseeable risks/expected benefits ratio. Justification of investigations and/or proposed therapies. Appropriate qualification of the investigator and all persons involved in the study. Adequacy of spaces and personnel, structural and technological resources available. Compliance with international and national ethical standards on biomedical research with humans.

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AUTHOR'S CONTRIBUTIONS

FD: Project creator; Project Coordinator, Writing; PF: Review, Writing; DS: Writing, Review, Data Analysis; ES: Writing, Review, Data Analysis; AS: Project creator, Writing, Review, Data Analysis; JP: Project creator, Data Analysis; SA: Review, Writing; SF: Design, Data Analysis; CF: Writing; PP: Review; FEA: Review. All authors: Final approval to be published.

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REFERENCES

1. van KWA, Hollmann MW, Sneyd JR. The value of anesthesiologists in the Covid-19 pandemic: a model for our future practice? *Br J Anaest.* 2020; 125(5): 652-655
2. Mc Cartney CJ, Mariano ER. Covid-19: bringing out the best in anesthesiologists and looking toward the future. *Regional Anesthesia Pain Medicine.* 2020; 45(8): 586-588.
3. Holmer H, Shrimel MG, Riesel JN, Meara JG, Hagander L. Towards closing the gap of the global surgeon, anesthesiologist, and

- obstetrician workforce: thresholds and projections towards 2030. *Lancet*. 2015; 27(2): 385-390.
4. Kain ZN, Fitch JC, Kirsch JR, Mets B, Pearl RG. Future of Anaesthesiology is Perioperative Medicine: a call for action. *Anesthesiology*. 2015; 122(6): 1192-1195;
 5. Bhandary A, Pallath NM, Ramakrishna M, Shetty SR. A survey on patients' awareness about anesthesia and anesthesiologist. *Indian J Clin Anaesth*. 2016; 3(2): 196-206.
 6. Marulasiddappa V, Nethra HN. A survey on awareness about the role of anesthesia and anesthesiologists among the patients undergoing surgeries in a tertiary care teaching women and children hospital. *Anesth Essays Res*. 2017; 11(1): 144-150.
 7. Lee JJ, Lee NH, Park CM, Hong SJ, Kong MH, Lee KH, et al. Public awareness about the specialty of anesthesiology and the role of anesthesiologists: a national survey. *Korean J Anesthesiol*. 2014; 66(1): 12-17.
 8. Singh T, Sharma S, Banerjee B, Garg S. Knowledge regarding anesthesiologist and anesthesiology among patients and attendants attending a rural hospital of New Delhi. *J Educ Health Promot*. 2018; 10(3): 7-12
 9. Li MN, Ma LL, Yu XR, Huang YG. A Survey of surgical patient's perception about anesthesiologist in a large scale comprehensive hospital in China. *Chin Med Sci J*. 2019; 34(2): 140-146;
 10. Nagrampa D, Bazargan-Hejazi S, Neelakanta G, Mojtahedzadeh M, Law A, Miller M. A survey of anesthesiologists' role, trust in anesthesiologists, and knowledge and fears about anesthesia among predominantly Hispanic patients from an inner-city county preoperative anesthesia clinic. *J Clin Anesth*. 2015; 27(2): 97-104.
 11. Raghavan G, Shyam V, Murdoch JAC. A survey of anesthetic preference and preoperative anxiety in hip and knee arthroplasty patients: the utility of the outpatient preoperative anesthesia appointment. *J Anesth*, 2019 Apr; 33(2): 250-256.
 12. Budiman M, Izaham A, Abdul Manap N, Zainudin K, Kamaruzaman E, Masdar A, et al. The patients' understanding on the status and role of anaesthesiologists. *Clin Ter*. 2015; 166(6): 227-235.
 13. Smith A, Mannion S. Irish patients knowledge and perception of anaesthesia. *Ir Med J*. 2013; 106(2): 50-52.
 14. Hariharan S, Merritt-Charles L, Chen DJ. Patient perception of the role of anesthesiologists: a perspective from the Caribbean. *Clin Anesth*. 2006; 18(7): 504-509.
 15. Lin C, Prozesky J, Martin DE, Cherian VT. Patients' expectations of their anesthesiologists. *Am J Manag Care*. 2019; 25(10): 304-309.
 16. Gottschalk A, Seelen S, Tivey S, Gottschalk A, Rich G. What do patients know about anesthesiologists? Results of a comparative survey in an U.S., Australian, and German university hospital. *J Clin Anesth*. 2013; 25(2): 85-91.
 17. Garcia-Marcinkiewicz AG, Long TR, Danielson DR, Rose SH. Health literacy and anesthesia: patients' knowledge of anesthesiologist roles and information desired in the preoperative visit. *J Clin Anesth*. 2014; 26(5): 375-382;
 18. Ribeiro CS, Mourão JI. Anesthesiologist: the patient's perception. *Braz J Anesthesiol*. 2015; 65(6): 497-503.
 19. Baaj J, Takrouri MS, Hussein BM, Al Ayyaf H. Saudi patients' knowledge and attitude toward anesthesia and anesthesiologists ~ A prospective cross-sectional interview questionnaire. *Middle East J Anaesthesiol*. 2006; 18(4): 679-691.
 20. Mavridou P, Dimitriou V, Papadopoulou M, Manataki A, Arnaoutoglou E, Papadopoulos G. Effect of previous anesthesia experience on patients' knowledge and desire for information about anesthesia and the anesthesiologist: a 500 patients' survey from Greece. *Acta Anaesthesiol Belg*. 2012; 63(2): 63-68.