Knowledge and perception about anesthesia and anesthesiologist in patients undergoing surgery in Nepal

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Received: 3 Dec 2020
Accepted: 19 Dec 2020

ABSTRACT

Background: Anesthesia as a distinct specialty has evolved much beyond the boundaries of operation theater but the services are yet under-recognized. This may be partly because of the lack of knowledge about anesthesia and anesthesiologist in general public and also due to lack of effort to raise awareness among the general public. This study was done to assess the knowledge and perception about anesthesia and anesthesiologist in patients undergoing surgery in Nepal.

Material and Methods: A total of 719 patients scheduled for elective or emergency surgery in eight hospitals of Nepal were consecutively recruited and interviewed using questionnaire at pre-operative period before evaluation by anesthesiologist or anesthesiology resident. Individual response to each question was graded using three point scale.

Results: The age of the patients ranged from 16 to 87 with a mean of 39.5±15.7 years. Only 31.6% and 28.2% had previous surgery and anesthetic exposure respectively. The majority (69.4% and 49.8% respectively) had good knowledge about health care workers present in operation theater and the ones delivering anesthesia. However, knowledge about anesthesia types and anesthetic agents was poor in 48.4% and 51.9% respectively. The knowledge was poor about person responsible for monitoring and maintaining homeostasis (49%), person responsible for resuscitation (46.5%) and management of anesthesia related complications (49.5%). Remarkably, 48.3% of the respondents had average knowledge about who manages post-operative pain. The mean knowledge score for individual patient was calculated and, 11.1%, 83.4% and 5.4% had poor, average and good knowledge respectively.

Conclusion: Majority of patients undergoing surgery had average knowledge and perception about anesthesia and anesthesiologist.

Keywords: anesthesia, anesthesiologist, knowledge, perception

Introduction

Anesthesiology has emerged as a distinct multimodal medical specialty with the spectrum ranging from providing anesthesia during surgery, perioperative patient care, critical care, acute and chronic pain management, resuscitation and palliative care. In general public, knowledge about the vital role of anesthesiologist and anesthesia is found to be poor in developed[1,2] and developing countries[3-7]. The poverty of knowledge was found even among paramedical staffs[8] and doctors[9]. Providing reliable information about anesthesia and anesthesiology to the patients may help reduce anxiety and improve perioperative care[6]. There is a need to highlight anesthesiology as a separate medical discipline to patients presenting for surgery. This study was conducted to assess knowledge and perception about anesthesia and anesthesiologist in patient undergoing surgery in Nepal.

Materials & Methods

After ethical approval and permission from participating hospitals, a cross-sectional questionnaire survey was conducted over a period of three months (May to July 2014) in the following hospitals of Nepal: Tribhuvan University Teaching Hospital, Maharajgunj, Kathmandu; Bir Hospital, Mahabouddha, Kathmandu; B. P. Koirala Institute of Health Sciences, Ghopa, Dharan; College of Medical Sciences, Bharatpur; Rapti Sub-regional Hospital, Ghorahi, Dang; Gurkha Hospital Pvt. Ltd, Dang; Grande International Hospital, Kathmandu and Alka Hospital Pvt. Ltd., Lalitpur.

Adult patients scheduled for elective or emergency surgery at the aforementioned centers were consecutively recruited at pre-operative period before pre-anesthetic evaluation by anesthesiologist or anesthesiology resident. Patients refusing to participate or unable to respond to the questionnaire verbally and independently were excluded. A written informed consent was obtained from all the participants.

A total of 719 patients were interviewed using pre-tested questionnaire during the study period. A prepared questionnaire was used. Patients able to read and write were instructed to fill the questionnaire on their own. For illiterate patients, nursing staff read out the questions and filled up the form as replied by the patient.

The questionnaire was prepared by a group of anesthesiologists with more than 5-year experience and was pre-tested through a pilot study of 20 patients. It had three parts. First part was about patient's socio-demographics: age, sex, educational status and permanent residence. Second was about previous exposure to surgery or anesthesia with "Yes" or "No" response. And the third was a set of multiple choice questions aimed at assessing knowledge about anesthesia and anesthesiologist. Individual response to each question was graded into 3 scores (1, 2 & 3; with 1 indicating poor knowledge, 2 indicating average knowledge and 3 indicating good knowledge) and mean knowledge score for each individual was computed with 1, 2 and 3 indicating poor, average and good knowledge respectively.

Data was entered and analyzed using IBM SPSS version 22.0. Demographic characteristics were presented in appropriate frequency tables. Categorical variables were summarized as frequencies and percentages and continuous variables were summarized as means and standard deviations. Mean knowledge score was computed as mentioned above and the chi-square test was used to determine association between knowledge, perception of anesthesia and other categorical variables like educational status, permanent residence, history of previous surgery and anesthetic exposure.

Results

A total of 719 patients were recruited in the study. The ages of the patients ranged from 16 to 87 with a mean of 39.5±15.7 years. Males outnumbered females by a ratio of 1.6:1. Regarding the educational status, majority of them had secondary (22.5%) and higher secondary (21.1%) education as shown in Table 2. However, 19.3% were illiterate and 16.4% managed just to read and write. The permanent residence of most of the participants was either Eastern (43.7%) or Central (38.1%) development region of Nepal. Among the participants, 12.2% were from Western region, 4.3% from Far-Western region and 1.7% from Mid-Western region. Only 31.6% and 28.2% had previous surgery and anesthetic exposure respectively.

Table 1: Socio-demographic characteristics (N=719)

Variable	Frequency	Percentage
Sex		
Male	442	61.5
Female	277	38.5
Education		
Illiterate	139	19.3
Manage just to read and write	118	16.4
Primary	47	6.5
Secondary	162	22.5
Higher Secondary	152	21.1
Graduate	73	10.2
Postgraduate	28	3.9
Permanent residence		
Eastern	314	43.7
Central	274	38.1
Western	88	12.2
Mid-Western	12	1.7
Far Western	31	4.3
Previous surgery		
Yes	227	31.6
No	492	68.4
Previous anesthesia		
Yes	203	28.2
No	516	71.8

In response to the questions about health-care workers present in operation theater and person providing anesthesia, the majority (69.4% and 49.8% respectively) had good knowledge (score of 3). However, patients' knowledge about anesthesia types and agents was poor with score of 1 in 48.4% and 51.9% respectively. As shown in Table 2, most of the subjects had score of 1 in the questions about person responsible for monitoring and maintaining homeostasis (49%), person responsible for resuscitation (46.5%) and management of anesthesia related complications (49.5%). Remarkably, 48.3% of the respondents had average knowledge (score of 2) about who manages post-operative pain. The mean knowledge score for individual patient was poor in 11.1%, average in 83.4% and good in 5.4%.

Table 2: Patients' response to questionnaire as graded knowledge score

Question	Knowledge score	Frequency	Percentage
People present in OT	2	220	30.6
	3	499	69.4
Who gives anesthesia?	1	127	17.7
	2	234	32.5
	3	358	49.8
Types of anesthesia	1	348	48.4
	2	287	39.9
	3	84	11.7
Different anesthetic agents	1	373	51.9
	2	332	46.2
	3	14	1.9
Who monitors and maintains homeostasis?	1	352	49.0
	2	286	39.8
	3	81	11.3
Who resuscitates the patient?	1	328	45.6
	2	314	43.7
	3	77	10.7
Who manage complications of anesthesia	1	356	49.5
	2	97	13.5
	3	266	37.0
Mean knowledge	1	80	11.1
	2	600	83.4
	3	39	5.4

Note: 1- Poor knowledge, 2- Average knowledge, 3-Good knowledge

Impact of education, permanent residence, previous surgery and previous anesthetic exposure on patient knowledge was statistically analyzed using Pearson Chi-Square tests. Significant association was found between mean knowledge score and the patient variables like education {χ^2 (2, N=719) = 54.38, p<0.01}, previous surgery {χ^2 (2, N=719) = 13.32, p=0.01} and previous anesthetic exposure {χ^2 (2, N=719) = 8.02, p=0.018} (Figure 1-3). However, the Pearson test was not valid to determine relationship between patient knowledge and permanent residence as the assumptions for a table larger than [2 X 2] in this test were not met (>20% of the cells i.e. 33.3% had expected frequency less than 5 and the minimum expected frequency was <1 i.e. 0.65). Therefore, we performed Likelihood Ratio Chi-Square test and nonetheless, no association was found, {χ^2 (8, N=719) = 10.94, p=0.205}.

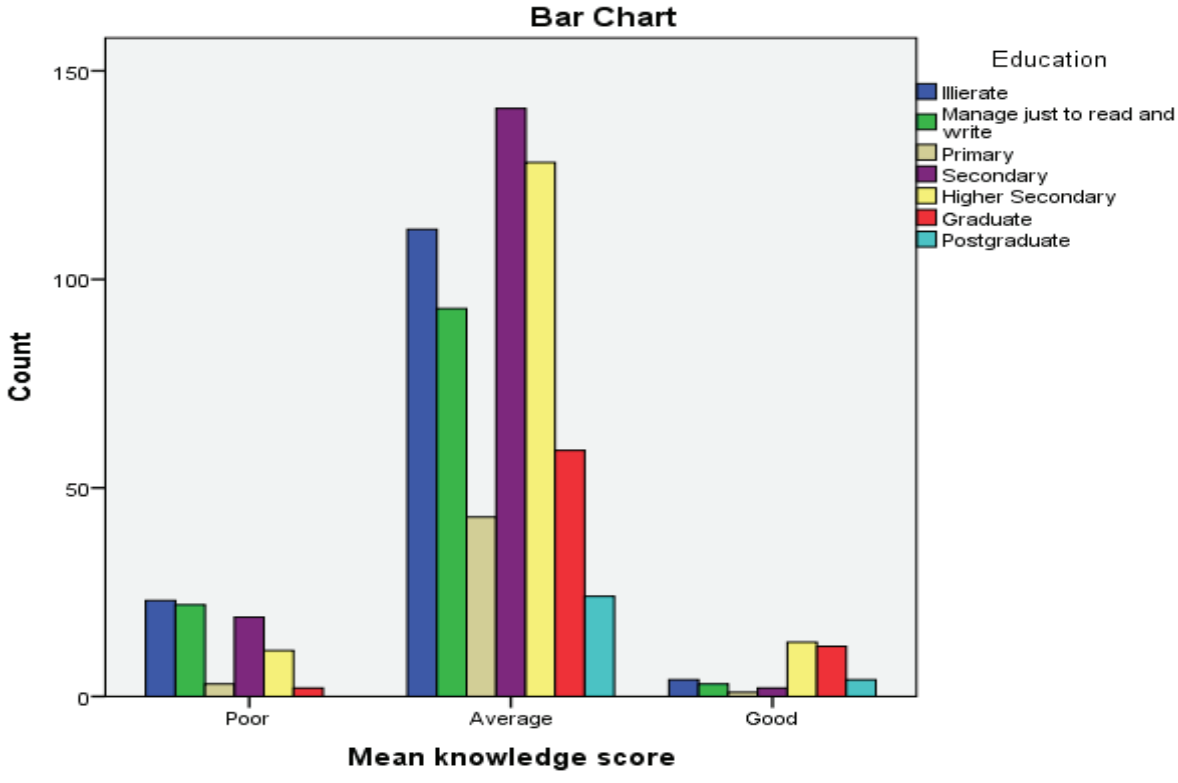

Fig 1: *Bar chart depicting distribution of subjects according to education in three knowledge groups.*

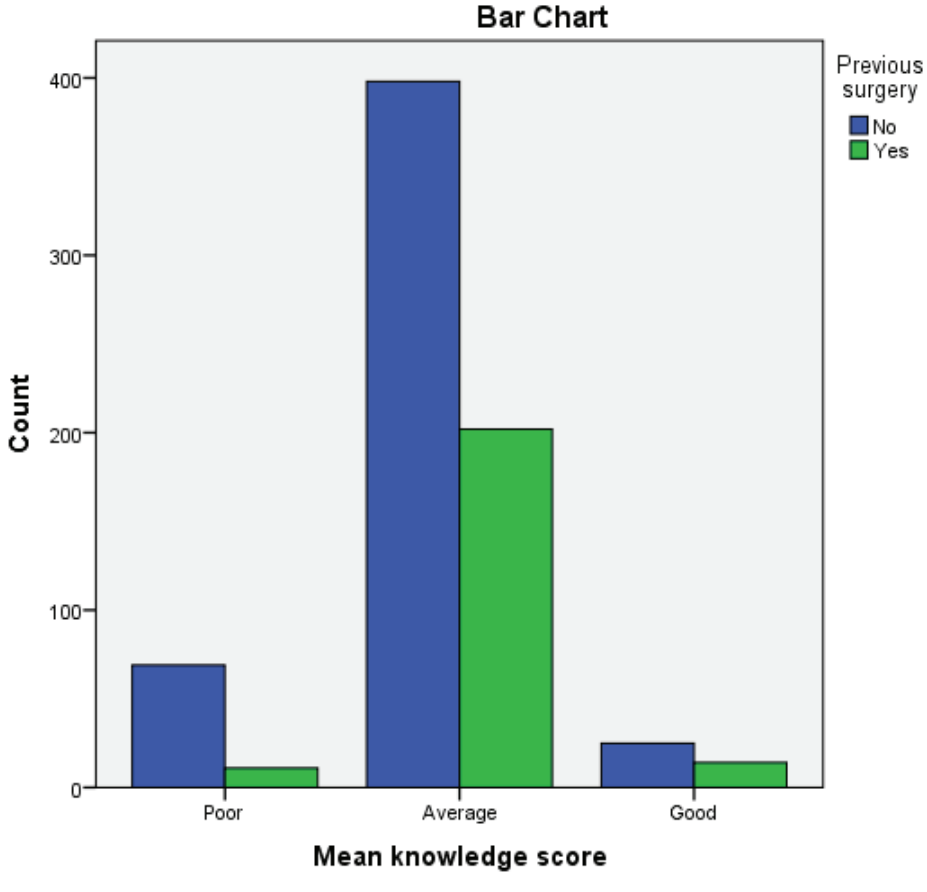

Fig 2: *Bar chart depicting distribution of subjects according to previous surgery in three knowledge groups*

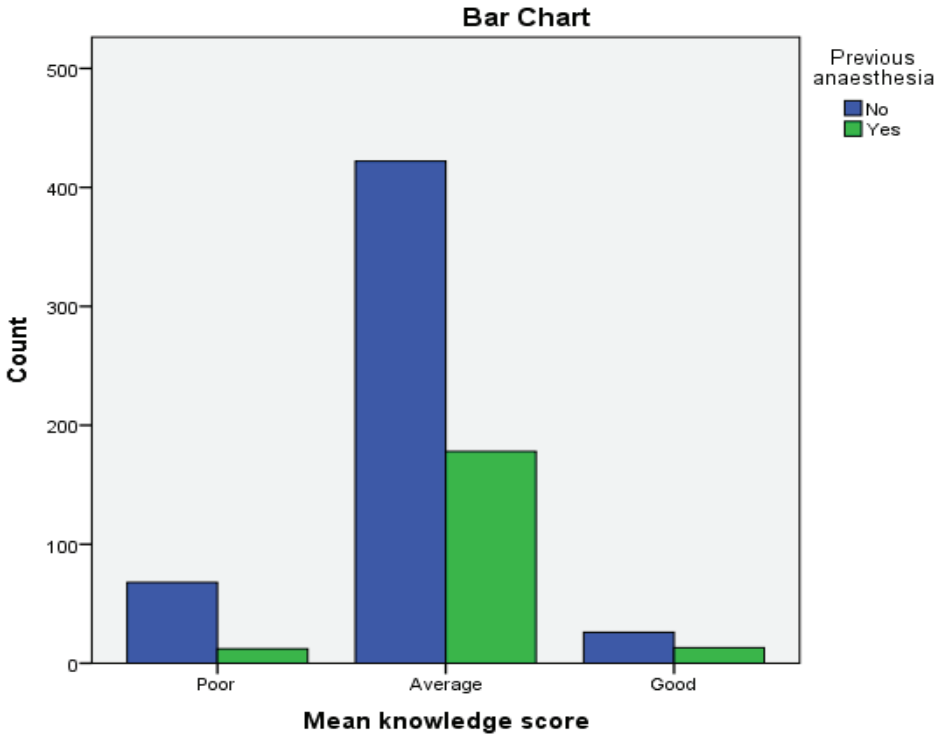

Fig 3: *Bar chart depicting distribution of subjects according to previous anesthetic exposure in three knowledge groups*

Discussion:

The role of anesthesiologists is not only limited within the boundaries of operation theater. With the evolution and advances in field of anesthesia, anesthesiologists have emerged as a leader in the field of critical care, pain management, resuscitation, trauma care, etc. The American Society of Anesthesiologists is supporting a strong campaign to improve the public perception about anesthesia and role of anesthesiologist in patient care and every year anesthesiologist all over the world celebrate world anesthesia day on 16th of October to mark the first successful demonstration of ether anesthesia in 1846 A.D. Despite all the efforts, the knowledge about anesthesia and role of anesthesiologist in general public is limited.

This study revealed that the mean knowledge about the anesthesia and the role of anesthesiologist as a perioperative physician in general public of Nepal presenting for surgery is average. It is despite the fact that anesthesiology as a separate branch of medicine was established a long time back and physician anesthesiologists have been providing anesthesia services since 1955 A.D in Nepal[10].

Although 69.4% of the participants had good knowledge about the persons present in Operation theatre only 49.2% of the participants knew about the person giving anesthesia. This finding is similar to the study done by Eyelad OR et al.[6] in Nigeria in 2010 where only 50% of the participants recognized anesthesiologist as a qualified doctor who give anesthesia. Our result is lower than the findings of the study from UK[11]and Hongkong[12], where almost 78% and 70% of the participants respectively knew about the person giving anesthesia. The reason behind the lack of knowledge about the anesthesiologist might be due to educational background of the participants in our study where almost 64.7% of the participants had education of secondary level or lesser. Other reasons might be because of the fact that most of the time, anesthesiologists are busy inside operating theater with limited time to interact with patients and family members[13] or it might be because of the fact that the patient first visits a surgeon for their disease and is later referred to an anesthesiologist[14]. Many a time anesthesiologists even do not introduce themselves, do not explain the procedure properly and even do not obtain separate consent, all of which might be the reason for the lack of knowledge about anesthesia and role of anesthesiologists.

It was found that patients with higher level of education, previous surgery and previous anesthesia exposure had higher mean knowledge score which is similar to the study by Baaj et al.[7] in which impact of education and previous surgical experience on the knowledge of anesthesia was studied. Similarly, in the study done by Kadri et al.[15] and Ahmed et

al.[16] patients with previous anesthesia exposure had better knowledge about anesthesia techniques and anesthesiologists as compared to those without previous anesthesia exposure. Though the patients with previous anesthesia exposure have higher mean knowledge, most of them have average knowledge about anesthesia and the role of anesthesiologists. It might be because the patients were not properly explained about anesthesia and the role of anesthesiologists during previous surgery.

Each patient coming for anesthesiology services and not being educated by attending anesthesiologists is a missed opportunity to spread awareness regarding anesthesiology. Therefore, it is of paramount importance that anesthesiologists take the responsibility to provide information about anesthesia, the role of anesthesiologists, possible complications and obtain separate anesthesia consent during each surgery.

Multicentric nature was the strength of the study. However, all the development regions were not equally represented. Further study incorporating balanced representation from all the development regions may better reflect the status of knowledge and perception.

Conclusions:

This study showed that the knowledge and perception about anesthesia and anesthesiologists in patients undergoing surgery in Nepal is poor. Patients with higher level of education, previous surgery and previous anesthesia exposure have better knowledge regarding anesthesia and role of anesthesiologists, however it is yet suboptimal. During peri-operative period, anesthesiologists should provide information about anesthesia, the role of anesthesiologists and possible complications, in order to improve the knowledge and perception about anesthesia and anesthesiologists in Nepal.

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