

# Awareness of the Role of Anaesthetists and Importance of Preanaesthetic Check-up among Patients: A Cross-sectional Study

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## ABSTRACT

**Introduction:** Patients scheduled to undergo elective surgeries should be assessed, well in advance, by anaesthetists with a view to plan optimal preparations and perioperative management regarding their anaesthetic requirements.

**Aim:** To assess the knowledge of the role of anaesthetists during the perioperative period and the importance of preanesthetic check-up among patients undergoing elective surgery.

**Materials and Methods:** A cross-sectional study was conducted in Khaja Bandanawaz Institute of Medical Sciences, Kalaburgi, Karnataka, India, from August 2019 to February 2020. The study involved 300 patients posted to the preanesthetic check-up clinic, over a span of six months for elective surgeries. Patients were asked to complete a questionnaire consisting of 17 questions. Statistical analysis was carried out using Statistical Package for the Social Science (SPSS) version 16.0 for Microsoft Windows and Excel.

**Results:** Out of total 300 patients, 198 (66%) were males with the mean age of 38.68±10.35 years. Graduates made up 28.6% of the participants, and 44.3% of them either had some schooling (primary or secondary) and the rest 27% did not have any education. Overall, 69 (23%) participants had a history of surgery and except one, all received both Preanaesthetic Check-up (PAC) and anaesthesia during their previous surgery. The mean awareness score was highest among the participants with a history of previous surgery (p-value <0.001).

**Conclusion:** The present study concluded that demographic characteristics such as age, sex, occupation, education and residence do not influence the awareness and importance of preanesthetic check-up clinic however, history of previous surgery was statistically significant.

**Keywords:** Perioperative morbidity, Previous surgery, Rural patients, Surgeon

## INTRODUCTION

Perioperative care encompasses total care from the time a patient is recommended that a surgical procedure may be appropriate or necessary until specialist medical management is no longer needed. It includes preoperative assessment, planning and provision of anaesthesia, and postoperative care including pain management, fluid and electrolyte management, resuscitation and relevant medical management [1].

Patients scheduled to undergo elective surgeries should be assessed, well in advance, by anaesthetists with a view to plan optimal preparations and perioperative management regarding their anaesthetic requirements. The main objectives of the Preanaesthetic Check-up (PAC) is to identify the correct anaesthetic techniques to be used during the surgical procedure; to provide the best perioperative care; and to ensure that an informed consent for anaesthesia is also obtained [2,3]. During PAC it is also important to identify individual risk factors concerned to the planned surgery. A thorough PAC with an additional advantage of patient satisfaction is more likely to result in better results for the patient [3].

A partial or rushed PAC could place patients at increased risk of perioperative morbidity and mortality. Patients are more likely to comply with anaesthetists (provide full medical, personal and family history, disclose any identified allergies, undergo blood checks, and physical examination) if they are aware of the need of a PAC in their perioperative treatment. If a patient shows a lack of interest in PAC or is unaware of its meaning or does not understand it, then this can undermine overall patient care.

Studies regarding the level of awareness of the role of anaesthetists and PAC among rural patients and general population in Northern parts of India have been conducted [4,5]. They have shown that

the patients attending PAC clinics have insufficient knowledge of preanaesthesia assessment and its role in improving surgical outcome [4].

However, in Karnataka (a Southern State in India), such studies have not been performed. The aim of the present study was to fill the gap in information and try to compare the results with previous studies. The study aimed to assess the awareness of the role of anaesthetists during perioperative period and the importance of PAC among the patients undergoing elective surgery.

## MATERIALS AND METHODS

This cross-sectional study was conducted in Khaja Bandanawaz Institute of Medical Sciences, Kalaburgi, Karnataka, India, for a period of 6 months from August 2019 to February 2020. The study involved 300 patients who were referred to PAC clinic for elective surgery. Written or verbal consent was obtained from all the participants in the study. Ethics approval for the study was granted by the Khaja Bandanawaz Institute of Medical Sciences Ethical Committee (Ref. No. KBNIMS/I.E.C/2020-21 dated 24<sup>th</sup> March 2021).

**Inclusion and Exclusion criteria:** Patients posted for elective surgery, aged between 18 years to 60 years were included in the study. Patients posted for emergency surgeries and who were unable to consent (due to mental conditions, medications, disabilities-hearing and speech) were excluded from the study.

The participants were invited to complete a questionnaire consisting of 17 questions [Annexure 1]. The representation of the questions were as follows:

- 1-6 questions were on demographic details,
- 7-10 questions were factual questions,
- 11-16 attitude based questions.

The questionnaire was developed by the researcher. Validation process was done in the Department of Anaesthesia of the study institution. This was to ensure that the questionnaire effectively captures the topic under investigation. Each question was validated with four experts with regards to relevance and clarity content using liberty scale form. And Scale-level Content Validity Index based on the Universal Agreement method (S-CVI/UA) index was 1. The questionnaire was also pilot tested among 20 patients by the researcher to understand whether the questions would be correctly interpreted by the participants.

The questionnaire was available in both English and Kannada (a local language). Instructions on how to answer the questionnaire were given to the patients. For the patients who could not read and/or write, the researcher read out and interpreted the questions and recorded their responses.

## STATISTICAL ANALYSIS

Statistical analysis was carried out using Statistical Package for the Social Science (SPSS) version 16.0 for Windows and Excel (2013; Microsoft Corporation, Redmond, WA, USA). Demographic characteristics were expressed in terms of frequencies and percentages. Unpaired t-test and one-way Analysis of Variance (ANOVA) was used to assess the impact of demographic variables on the awareness of PAC clinics and the role of anesthetists. A p-value < 0.05 has been recognised as statistically significant.

## RESULTS

In total 300 patients completed the questionnaire and among them 66% (198/300) were males [Table/Fig-1]. In terms of occupation of the participants, a majority (34.6%) were unskilled labourers. Graduates were 28.6% of the participants, and 44.3% of them either had some schooling (primary or secondary) and the rest 27% did not have any education. The urban-rural distribution of the study participants was almost similar, 50.6% and 49.3%, respectively.

Descriptive variable	n (%)
<b>Gender</b>	
Male	198 (66%)
Female	102 (34%)
<b>Age group (years)</b>	
≤20	3 (1%)
21-30 years	68 (22.7%)
31-40 years	125 (41.7%)
41-50 years	57 (19%)
51-60 years	39 (13%)
≥61	8 (2.6%)
Mean±SD	38.68±10.35
<b>Occupation</b>	
Business	79 (26.3%)
Government employees	35 (11.6%)
Farmers	65 (21.6%)
Skilled labourers	17 (5.6%)
Unskilled labourers	104 (34.6%)
<b>Education</b>	
No education	81 (27%)
Primary school	89 (29.7%)
Secondary school	44 (14.7%)
University graduate	86 (28.6%)
<b>Residential Area</b>	
Urban	152 (50.6%)
Rural	148 (49.3%)

[Table/Fig-1]: Demographic features of the study participants (N=300).

The participants were asked whether they had previous surgery and if yes, whether they had received any anaesthesia [Table/Fig-2]. Out of the total, 69 (23%) of the study participants had a history of surgery and except one, all received both PAC and anaesthesia during their previous surgery. When asked about the main reason/s for them to attend PAC clinic, all of them said that their surgeon had advised them to do so [Table/Fig-2]. Total 24 patients (8%) indicated that they were attending PAC to get investigations; 182 patients (60.6%) felt that the reason was to get a date for their surgery; 180 patients (60%) said that the reason for attending PAC was to understand about anaesthesia [Table/Fig-2].

History of surgery and reason for visit to PAC	Yes n (%)	No n (%)
<b>History</b>		
Underwent surgery previously	69 (23%)	231 (77%)
Received anesthesia during previous surgery	68 (98.5%)	1 (0.5%)
Received preanesthetic check-up during previous surgery	68 (98.5%)	1 (0.5%)
<b>Reason for your visit to PAC</b>		
Advised by surgeon	300 (100%)	0
To get investigation done	24 (8%)	276 (92%)
To get the date of surgery	182 (61.6%)	118 (39.3%)
To understand about anesthesia	180 (60%)	120 (40%)
For legal documentation and consent	32 (10.6%)	268 (89.3%)

[Table/Fig-2]: History of surgery and reason for visit to PAC (Q-10).

Total 85.6% of the participants felt that PAC was necessary before a surgery [Table/Fig-3]. Total 78.3% of the participants said that anaesthetists were present at PAC clinic. All participants felt that either it was very or moderately important to give accurate medical and personal habit histories at PAC clinic. All of them also indicated that they were either likely or very likely to follow presurgical instructions given at PAC clinic. Total 78.3% of the participants indicated that anaesthetists would give anaesthesia for their planned surgery.

Awareness of preanaesthetic check-up	n (%)	
Q.11 PAC before surgery is	Necessary (1)	257 (85.7%)
	Not necessary (-1)	10 (3.3%)
	Don't know (0)	33 (11%)
Q.12 Who do you think is in the PAC clinic?	Nurse/technician (-1)	0
	Surgeons (-1)	0
	Anaesthetists (1)	235 (78.3%)
	Don't know (0)	65 (21.6%)
Q.13 Important to giving accurate medical history in PAC	Very important (2)	210 (70%)
	Moderately important (1)	90 (30%)
	Slightly important (0)	0
Q.14 Important to disclose smoking, alcohol, other drugs and medication in PAC clinic	Very important (2)	241 (80.3%)
	Moderately important (1)	59 (19.6%)
	Slightly important (0)	0
	Not at all important (-1)	0
Q.15 How likely you will follow instructions given at PAC before surgery?	Very likely (2)	178 (59.3%)
	Likely (1)	122 (40.6%)
	Neutral (0)	0
	Not likely (-1)	0
	Very unlikely (-1)	0
Q.16 Anaesthesia is administered by	Nurse (-1)	0
	Surgeon (-1)	0
	Anesthetists (1)	235 (78.3%)
	Don't know (0)	65 (21.6%)

Scoring	(n,%)
Unaware (-5 to 0)	0
Probably aware(1-4)	10 (3.3%)
Truly aware(>4)	290 (96.6%)
Total	300 (100)

**[Table/Fig-3]:** Awareness of PAC among study participants (Q-11 to Q-16).

When asked about the role of the anaesthetist during their surgery, all of them said that anaesthetists would put them to sleep and 78.3% felt that anaesthetists control pain during the surgery [Table/Fig-4]. Total 27.3% indicated that anaesthetists manage pain postsurgery and 10.6% said that they also manage patients in the Intensive Care Units. Overall mean scores of awareness of importance of PAC among patients was  $0.73 \pm 0.45$ , the percentage score was 73.2%. Awareness regarding PAC before surgery was 85.7% of patients, followed importance to disclose personal habits and medications in PAC clinic was 80.3%. The lowest score of awareness was 59.3%, for presurgical instructions given to be followed PAC given in clinics. A majority of the participants were found to be 'probably aware' about the role of anaesthetists in surgery [Table/Fig-4].

Role of anaesthetist during surgery	Yes n (%)	No n (%)
Performing the surgery	0	300 (100%)
Ensuring you not feel pain	235 (78.3%)	62 (20.6%)
Monitoring vital signs of patients	139 (46.3%)	161 (53.6%)
Putting people to sleep during surgery	300 (100%)	0
Giving pain relieving medications after surgery	82 (27.3%)	218 (72.6%)
Managing patients in ICU	32 (10.6%)	268 (89.3%)
Scoring	(n,%)	
Role of anaesthetist during surgery (n,%)		
Unaware (0-1)	65 (21.6%)	
Probably aware (2-4)	203 (67.6%)	
Truly aware (>4)	32 (10.6%)	
Total	300 (100)	

**[Table/Fig-4]:** Role of anaesthetist during surgery (Q-17)

The scores of awareness of PAC among the participants were analysed by demographics. It showed that the mean percentage of awareness was highest among the participants with a history of previous surgery (89%) [Table/Fig-5]. This was also statistically significant ( $p$ -value  $< 0.001$ ).

Variable	Value	Number of participants	Awareness score	p-value
			Mean $\pm$ SD	
Age (years)	$\leq 30$	71	$0.68 \pm 0.51$	0.353
	31-40	125	$0.76 \pm 0.43$	
	41-50	57	$0.63 \pm 0.37$	
	51-60	39	$0.78 \pm 0.46$	
	$\geq 61$	8	$0.71 \pm 0.61$	
Sex	Male	198	$0.77 \pm 0.38$	0.257
	Female	102	$0.71 \pm 0.54$	
Occupation	Business	39	$0.76 \pm 0.51$	0.442
	Government employees	21	$0.81 \pm 0.43$	
	Farmers	64	$0.61 \pm 0.37$	
	Skilled labourers	476	$0.69 \pm 0.46$	
	Unskilled labourers	104	$0.67 \pm 0.61$	
Education	No education	81	$0.59 \pm 0.69$	0.089
	Primary education	89	$0.61 \pm 0.73$	
	Secondary education	44	$0.75 \pm 0.48$	
	Graduation	86	$0.81 \pm 0.34$	

Residence	Urban	152	$0.80 \pm 0.43$	0.136
	Rural	148	$0.70 \pm 0.57$	
Previous Surgery	Yes	69	$0.89 \pm 0.38$	$< 0.001$
	No	231	$0.59 \pm 0.59$	

**[Table/Fig-5]:** Comparison of awareness by demographic features.  $p$ -value  $< 0.05$  was considered as statistically significant

## DISCUSSION

As a discipline, anaesthesia has grown from being simply a supportive specialty to surgery to one engaged in safe and full patient care, not just in operation theatres, but also in intensive care units and pain clinics. Despite this, there is varying degree of awareness among general population, patients, paramedical personnel and even surgeons on different aspects of anaesthesia [4,6-10]. In low-income countries, where just 50% to 60% of patients consider anaesthesiologists to be doctors, compared to 90-99% of patients in high-income countries [11-13]. This hinders the growth of anaesthesiology as a speciality [14]. While this can be ascribed to several reasons, one of the main reasons for this is that patients first consult surgeons for their illness and are later referred to anaesthesiologists [15]. However, it was encouraging to see that all participants in the study were advised by surgeon/s to attend the PAC.

Prenaesthetic assessment involves taking of history, adequate physical examination and laboratory investigations. Although, only 24 (8%) of the participants indicated that they were attending PAC for investigations however, this difference was not statistically significant from other reasons for their visit to PAC. The purpose of the PAC is to optimise the patient care before the surgery such that the risk of anaesthesia and surgery are minimised as much as possible and results in enhanced outcomes for the patients [3]. Most of the study participants (85.7%) felt that PAC before their surgery was necessary and 70-80% of them said that it is important to provide accurate medical and personal history at PAC.

In addition, PAC provides the patient with the opportunity to address any anaesthesia questions or concerns. Therefore, the role of an anaesthesiologists becomes more difficult if a patient displays a lack of interest during PAC or attempts to hurry through it. This could result in insufficient optimisation of the patient prior to surgery. It is a well-established fact that morbidity and mortality during surgery are affected by both the preoperative physical state of the patient and the surgical procedure [16]. It is encouraging to see that all study participants completed their PAC visits as advised by their surgeons.

Although demographic characteristics such as age, sex, occupation, education and residence did not influence the awareness and importance of PAC however, prior history of surgery did, and this difference was statistically significant.

### Limitation(s)

The relationship between lack of information related to PAC and insufficient optimisation of preanaesthesia was not studied. In addition, this research does not propose potential steps that can be taken to enhance information about preanaesthesia check-up for patients. Therefore, further research may be needed to address this issue in detail to improve patient care.

## CONCLUSION(S)

Patients have limited information about the evaluation of preanaesthesia and its role in enhancing the outcome of the procedure. Therefore, not only anaesthesiologists, but also surgeons involved in patient care should make efforts to stress the importance of the PAC clinic to reduce perioperative morbidity and mortality.

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## Annexure 1:

### Questionnaire

1. **Name:**
2. **Age in (years):**
3. **Gender (tick only one):**  
Female  
Male
4. **Profession (please specify):**
5. **Educational status (tick only one):**  
No schooling  
Primary school  
Secondary school (10<sup>th</sup> or PUC 2<sup>nd</sup> year)  
Graduate  
Postgraduate
6. **Where do you usually live?**  
Kalaburgi city (Gulbarga city)  
Taluka place  
Village  
Other: (please specify)
7. **Have you undergone any surgery/ies in the past? (tick only one)**  
Yes  
No If "No" go to question 10
8. **Did you receive any anesthesia during the previous surgery? (tick only one)**  
Yes  
No
9. **Did you receive any Preanesthetic Check-up (PAC) during the previous surgery? (tick only one)**  
Yes  
No  
Cannot remember
10. **What is the reason for your visit to Preanesthetic Clinic today? (tick all that apply)**  
As advised by surgeon/s  
To get investigations done  
To get the date of surgery  
To understand about anesthesia  
For legal documentation and consent  
I don't know
11. **Preanesthetic check-up before surgery is: (tick only one)**  
Necessary  
Not necessary  
I don't know
12. **Who do you think is in the PAC clinic? (tick all that apply)**  
Nurse/technician  
Surgeons  
Anesthetists  
I don't know
13. **How important do you think giving accurate medical history (pre-existing conditions like heart disease, breathing problems, kidney problems, etc) in PAC clinic is?**  
Very important  
Moderately important

- Slightly important  
Not at all important
- 14. How important is it to disclose smoking, alcohol consumption and use of other drugs and medications in PAC clinic today?**
- Very important  
Moderately important  
Slightly important  
Not at all important
- 15. If some presurgical instructions are given to you to follow at PAC clinic today, how likely is that you will follow them?**
- Very likely  
Likely  
Neutral  
Not likely  
Very unlikely
- 16. Anesthesia for your planned surgery will be given by: (tick only one)**
- A nurse  
A surgeon (a specialist doctor who does surgeries)  
An anesthetist (a specialist doctor)  
I don't know
- 17. What do you think is the role of an anesthetist during surgery? (tick all that apply)**
- Performing the surgery (or procedure)  
Ensuring that you do not feel pain  
Monitoring vital signs of patients  
Putting people to sleep during surgery  
Giving pain relieving medications after surgery  
Managing patients in intensive care unit (ICU)  
I don't know