



**PATIENTS' KNOWLEDGE AND ATTITUDE TOWARDS  
ANESTHESIA IN TIKUR ANBESA SPECIALIZED HOSPITAL IN  
ADDIS ABABA, ETHIOPIA.**

**By:**

**Naod Bulti (B.Sc)**

**A thesis submitted to the school of graduate studies of Addis Ababa University  
in partial fulfillment of the degree of Masters of Science in Anesthesia in  
department of Anesthesia.**

**July, 2015**

**Addis Ababa, Ethiopia**

**ADDIS ABABA UNIVERSITY**

**FACULTY OF MEDICINE**

**DEPARTMENT OF ANESTHESIA**

**Postgraduate Program**

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**Advisor: Wosenyeleh Admasu (B.Sc, MSc)**

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## ABSTRACT

**Background:** In Ethiopia, anesthesia as a discipline and anesthetist as a professional is not well recognized by the public. In studies done in around the world, the public knowledge of the anesthesia a discipline and is lower compared to other medical discipline.

**Objectives:** The objective of this study was to determine patients' knowledge and attitude towards anesthesia in Tikur Anbesa specialized Hospitals, Addis Ababa, Ethiopia from March 30- June 11, 2015 G.C

**Method:** The study was conducted in Tikur Anbesa Specialized Hospital. An analytic cross-sectional study design was followed from March 30- June 11, 2015 G.C. All adult elective patients in Tikur Anbesa Specilaized Hospital during the study period were used as a sample.

**Results:** Ninety two percent (92%) of the patients believed that anesthesia is necessary for surgery and 79% of patients responded that a surgeon decides if a patient is fit for anesthesia. Sixty eight percent (68.2%) had poor knowledge & attitude towards anesthesia with a mean score of 9.98.

**Conclusion:** Despite surveys on the overall knowledge & attitude of patients overseas also shows poor results, in our study it is much more significant number of patients who had poor knowledge & attitude.

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# Table of content

<b>Contents</b>	<b>Page</b>
Abstract.....	<b>I</b>
Acknowledgement .....	<b>II</b>
Table of contents.....	<b>III</b>
List of Tables.....	<b>V</b>
List of Figures.....	<b>VI</b>
Abbreviations.....	<b>VII</b>
<b>CHAPTER ONE</b>	
1. Introduction.....	<b>1</b>
1.1 Background information.....	<b>1</b>
1.2 Statement of the problem.....	<b>4</b>
1.3 Significance of the study.....	<b>5</b>
<b>CHAPTER TWO</b>	
2.1. Literature review.....	<b>6</b>
2.2 conceptual frame work .....	<b>13</b>
2.3 Research Questions.....	<b>14</b>
<b>CHAPTER THREE</b>	
3. Objectives.....	<b>15</b>
3.1 General objective.....	<b>15</b>
3.2 Specific objectives.....	<b>15</b>
<b>CHAPTER FOUR</b>	
4 .Methods and Material.....	<b>16</b>
4.1 Study area and period .....	<b>16</b>
4.2 Study design .....	<b>16</b>
4.3 populations.....	<b>16</b>
4.3.1 Source population.....	<b>16</b>
4.3.2 Study population.....	<b>16</b>
4.4 Eligibility Criteria.....	<b>17</b>

4.4.1 Inclusive criteria.....	17
4.4.2 Exclusive criteria.....	17
4.5 Sample size .....	17
4.6 Sampling Procedure.....	17
4.7 Data collection technique.....	17
4.7.1 Data collection tool.....	17
4.7.2 Method of Data collection.....	18
4.7.3 Data quality assurance.....	18
4.7.4 Pretest.....	18
4.7.5 Data analysis.....	18
4.8 Variables.....	19
4.8.1 Dependant Variables.....	19
4.8.2 Independent Variables.....	19
4.9 Operational definition.....	19
4.10 Ethical consideration .....	19
4.11 Dissemination of results.....	20
<b>CHAPTER FIVE</b>	
5. Results.....	21
<b>CHAPTER SIX</b>	
6. Discussion.....	33
<b>CHAPTER SEVEN</b>	
7. Strength and limitation of the study.....	37
<b>CHAPTER EIGHT</b>	
8.1 Conclusion.....	38
8.2 Recommendations.....	39
<b>References.....</b>	<b>40</b>
<b>Annex I.....</b>	<b>42</b>

## **List of tables**

Table 1: Socio-demographic characteristics of patients in Tikur Anbesa specialized Hospital, Addis Ababa, Ethiopia, 2015 GC.

Table 2: Percentage distribution of patients knowledge of anesthesia in Tikur Anbesa specialized Hospital, Addis Ababa, Ethiopia, 2015 GC.

Table 3: Percentage distribution of knowledge of patients in Tikur Anbesa specialized Hospital, Addis Ababa, Ethiopia, 2015 GC.

Table 4: Percentage distribution of patients attitude towards anesthesia & anesthetists in Tikur Anbesa specialized Hospital, Addis Ababa, Ethiopia, 2015 GC.

Table 5: Socio-demographic characteristics & other factors, related to knowledge & attitude towards anesthesia and anesthetists among patients in Tikur Anbesa specialized Hospital, Addis Ababa, Ethiopia, 2015 GC.

## **List of figures**

Figure 1: Previous history of anesthesia exposure in Tikur Anbesa specialized Hospital, Addis Ababa, Ethiopia, 2015 GC.

Figure 2: Patient's response for complications of anesthesia in Tikur Anbesa specialized Hospital, Addis Ababa, Ethiopia, 2015 GC.

Figure 3: Patients response, on roles anesthetists are involved in Tikur Anbesa specialized Hospital, Addis Ababa, Ethiopia, 2015 GC.

Figure 4: Patients knowledge on roles anesthetists are involved in Tikur Anbesa specialized Hospital, Addis Ababa, Ethiopia, 2015 GC

Figure 5: Percentage distribution of score values for knowledge in Tikur Anbesa specialized Hospital, Addis Ababa, Ethiopia, 2015 GC.

Figure 6: Percentage distribution of score value for attitude in Tikur Anbesa specialized Hospital, Addis Ababa, Ethiopia, 2015 GC.

Figure 7: Percentage distribution of knowledge and attitude among patients in Tikur Anbesa specialized Hospital, Addis Ababa, Ethiopia, 2015 GC.



## **Abbreviations**

**AA:** Addis Ababa

**AAU:** Addis Ababa University

**EAA:** Ethiopian Anesthetist Association

**GA:** General Anesthesia

**SA:** Spinal anesthesia

**TASH:** Tikur Anbesa Specialized Hospital

# Chapter 1

## 1. Introduction

### 1.1 Background information

Anesthesia has evolved immensely since the first anesthesia was administered publicly by TG Morton in 1846. The experience and skill acquired from intra-operative patient care have been extended from the operating theatre to resuscitation, intensive care and acute and chronic pain management. (1)

Anesthesiology as a medical specialty had its beginnings in the early part of this century when physicians began to manage vital functions during surgery in addition to simply performing the surgical prerequisites of inducing unconsciousness and waking patients at the end of surgery. Complex surgery performed on sicker patients became increasingly possible as anesthetists developed techniques for critical care and active perioperative management of vital functions. The general public understood little of these developments. At the 1939 New York World's Fair, the nascent specialty of anesthesiology announced itself to the nonmedical world. (3)

An anesthetist does not spend as much time with a patient as a surgeon does. He/she gets to „talk“ with his patient only during his one or two preoperative visits. The fact that patients who have undergone previous operations have learned little about the anesthetist and their work compared to those who have not indicates a lack of proper communication between anesthetist and their patients. Hence there is a widespread misconception amongst the public about the role of anesthetist and their responsibilities inside or outside the operating room. (4)

Many studies have demonstrated poor public knowledge of anesthesia and the role of anesthetists in developing and developed countries, despite their increasing involvement in resuscitation, intensive care, and acute and chronic pain management. (1) (2)

In Ethiopia, Anesthesia as a discipline and Anesthetist as a professional is not well recognized by the public. In studies done in around the world, the public knowledge of the anesthesia a discipline and the professionals (Anesthetists) is lower compared to other medical discipline. (1) In our country, Ethiopia, the term „Anesthesia“ has no equivalent Amharic meaning. The commonly used terms” ማደንዘዣ” and/or “ሰመመን” also mean Numbness and illusion respectively. The professionals are also commonly referred as “ የሰመመን ሰጪ ባለሙያ” or “ማደንዘዣ ሰጪ”. These terms do not reflect the true meaning of anesthesia and the roles played by the anesthetist and this may have contributed for wrong perception about anesthesia and anesthetists.

Different studies suggest that, the possible reasons for decreased knowledge and attitude towards anesthesia and anesthetists could be limited educational level, lack of previous pre anesthetic teaching and health information and the city where a person lives i.e. urban or rural.

Nowadays, Anesthetists are involved in running the intensive care unit and are an integral parts of the resuscitation team in most hospitals; however, only 8.3% of patients in Hong Kong thought that they were involved in this field. Giving medical advice to other specialties, teaching in universities and doing research were not generally considered part of their role. There also appears to be little recognition of the important role of anesthetists in research and development, and their clinical involvement in the management of acute and chronic pain. Overall respondents who had received post- secondary school education had a good knowledge of anesthetists“ roles. Particularly in relation to obstetric work, emergency transfers, teaching, and research. (1)

Preoperative patient evaluation is invaluable task. It not only help the anesthetists to know their patients, choose appropriate anesthetic and get important equipments ready; but also helps educate the patient on what to expect and what will happen to the patient. This eventually help the patient become more calm and comfortable.

Recognition of the anesthesia profession as an independent specialty would encourage future recruits to take up the specialty. Lack of recognition and decreased appreciation of the role of the anesthesiologist by the patient contributes to the frustration of the anesthetic practitioner and would decrease the staff recruiting and retaining. (21) In a study done in Hong Kong in 120

Chinese patients aged over 18, showed that there is harmony with studies of other developing countries that the patients are not well informed about the specialty and therefore necessitating more information. (1) In Indian rural hospital, only 22% of the cases know correctly that anesthetist is the person who is a team leader who will resuscitate the patients if any mishap occurs in operation theatre. (13)

## 1.2 Statement of the Problem

Studies conducted to assess the patient's knowledge and/or perception about the role of anesthesiologists and their concerns regarding anesthesia in a developing country like India shows issues of public awareness and litigation are taken more lightly than in Western countries. (7)

Because our patients have less knowledge and attitude towards anesthesia,, they are often confused to choose between the types of anesthesia provided. They also can not identify the risks and benefits of each types of anesthesia. In study done in Pakistan they have come across obstetric population who frequently refuse regional anesthesia or analgesia and suggested it could be from multi factorial reasons including cultural differences, lack of knowledge and false beliefs. (9)

Patients who are less aware about anesthesia could manifest behavioral measures of distress such as anxiety, tachycardia, crying out, tension, hostility, hand clenching. (8) Therefore, patients are not calm and hesitate to give their consent to be anesthetized.

During perioperative period the patients usually contact with anesthetist for a brief period of time. In Ethiopia, there are no studies done to determine patient's image about anesthesia. One study reported that perception of the anesthetist and satisfaction were significantly increased by a single postoperative visit by the anesthetist. (17)

The cornerstone to adequate patients' knowledge and attitude towards anesthesia is giving health information by different mechanisms. However, researches related to patients knowledge and attitude towards anesthesia remains limited despite an increased awareness of the significance of the problem in our country. Therefore, it is imperative that anesthesia scholars should give due attention to this area of problem.

### **1.3 Significance of the study**

A study on this subject matter will help anesthetists know where patient's level of knowledge and attitude towards anesthesia is in Ethiopian context. This research paper will eventually help in identifying the areas of weakness and based on the findings, strategies to improve the knowledge and attitude of patients may be designed, implemented and evaluated ultimately reducing the problems arising from the knowledge and attitude gap.

If patients have good information about anesthesia, they would be able to differentiate between the different types of anesthesia, their risks and benefits for each type and they would be less anxious, would follow guidelines ordered by the anesthetists such as fasting guidelines. Also if patients knew that anesthesia personnel are trained and will take care of them during the perioperative period they would be much calmer and would not hesitate to give an informed consent to be anesthetized.

Patient's awareness about Anesthesia and its professional's increases recognition of the anesthesia profession as an independent specialty would encourage future recruits to take up the specialty. Lack of recognition and decreased appreciation of the role of the anesthetist by the patient contributes to the frustration of the anesthetic practitioner and decreases staff retaining.

Ethiopian anesthetists have an information gap for patient's knowledge and attitude towards anesthesia and anesthetists, the causes and the solutions have not been determined. To my knowledge, to this date no study of patient's knowledge and attitude towards anesthesia in Ethiopia has been explored.

This research is the first of its kind in our country; therefore it will be used as a base line for further studies that will be conducted on related issues.

## Chapter 2

### 2.1 Literature review

Patients around the world have little or limited knowledge regarding anesthesia. In less developed countries the patients' knowledge tends to be less than that of the developed once. In a survey conducted in Karamasa rural tertiary hospital, Knowledge about the types of anesthesia was present among 170 (56.7%) of the participants, that is they knew at least one among the various types of anesthesia. (13) There are different types of anesthesia: mainly categorized as general and regional anesthesia. And in those categories there are different general and regional anesthetic techniques. In a similar study done in Nigeria, which determined the types and technique of anesthesia, Out of 229 patients surveyed, 91.3% knew the type of surgery they were going to have, while 67.6% had knowledge of the anesthetic techniques to be used. The knowledge of types of anesthesia ranged from general anesthesia (27.5%) to spinal anesthesia (17.0%), epidural (4.8%) and local infiltration (18.3%). (10)

In other study conducted in the USA, 69% of the patients preferred to have general anesthesia so that they would not see or feel anything (66%) and/or because they believed spinal anesthesia to be dangerous (3%). Twenty two (22%) patients expressed a preference for local anesthesia because they wished to remain awake and aware throughout the procedure (13%) and to avoid side effects of general anesthesia (9%). Only 9% of the patients preferred either spinal or epidural anesthesia in order to remain awake and aware. (11) This survey also shows patients in developed countries also have a limited knowledge that lead to unnecessary fear of anesthetic techniques.

Similar results were observed in recently done study in Pakistan parturient that had caesarian section. Out of all, 198 (48.3%) women chose general anesthesia, 137 (33.4%) preferred regional anesthesia while 75(18.3%) were not sure of the selection. Univariate analysis carried out to see the factors associated with the women's knowledge regards options of anesthesia technique for caesarean section has found significant association: The women aged between 25-29 years had significantly higher knowledge as compared to age <25 years. They also found significant association of knowledge of the women with their occupational status.

Health care professionals were found well aware as compared to house wives. Women with previous history of anesthesia were found more knowledgeable as compared to those without previous anesthesia experience. (12)

The study done in Nigeria shows a knowledge gap quite vividly for a lot of patients opted not to choose the anesthetic technique to be used. Out of 229 patients, 179 (78.2%) patients said they would agree with the type of anesthesia suggested to them by the anesthetist, while 155 (67.7%) reported their desire to have some information about anesthesia before the day of surgery. (10) Whereas patients in Pakistan, indecisive women had left the decision either on their obstetrician (87%), anesthetists (53.3%) or husband/family (9%). In both scenarios patients had limited knowledge that they were unable to make a clear choice. (12)

Even though Regional anesthesia has many advantages over general anesthesia, such as decreased mortality and morbidity, patients in USA prefer general anesthesia more often. Among the 254 first-time surgical patients, there was a strong preference for general anesthesia (72%), followed by local (22%) and spinal or epidural (6%) anesthesia. This finding mirrored the preferences of the total population. (11) Studies in Saudi Arabia show that the induction of anesthesia intravenously or by inhalation was rightly answered by 57.7% of the respondent while 42.3% did not know. The question on what was the anesthetic during surgery? It was not clearly answered and it was distributed around all the possibilities. (14)

In the same study when asked about their opinion regarding „high risk patients for anesthesia“ 41% of the patients felt that patients with diabetes, hypertension or asthma belong to that group. 19% felt that anesthesia is risky in small children, whereas 16% felt accident victims are more prone for risks. 13% did not have any idea. Rest of the patients gave varied answers like old patients, patients coming for major surgery, patients with heart problems and mothers coming for caesarean. 6% felt anesthesia is risky in all patients. In Nigeria Eighty-one (35.4%) patients had some knowledge about the complications of anesthesia, the worst listed was death or not waking up (34.5%), while the majority (64.6%) did not know any. (7) (10)



In one study patients were asked if they felt fasting was needed before surgery. Seventy three (73%) agreed with this but of them 35% did not know the reason for fasting, 24% knew that it was to prevent vomiting. Rest of them gave answers like to „make surgery successful“, „to avoid heart attack“, „to avoid bowel problems“, „to make patient comfortable“ etc. These answers were given by even the patients who had previous experience of anesthesia. (7)

### **Knowledge about the anesthetist**

In 1996, on a review on the subject in developed English speaking countries, Klaufa and Roizen 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)

In King Kalid University Hospital, 55.3% of patients recognized that anesthesia is given by a doctor specialized in anesthesia, while 44.7% either stated they did not know or gave a wrong response. As for the knowledge of who took care of the patient during surgery or resuscitated the patients? A great proportion of the respondents did not know the correct answer 43.6% 40.6% respectively. No definite correct answer indicated to the effort of the anesthesiologist. The role of the anesthesiologist for post operative analgesia was not clear in the mind of the majority of patients. (14) Where as in Hong Kong 71% of the patients thought that the anesthetist was a medically qualified and of those approximately 2/3<sup>rd</sup> thought that the anesthetists were experts who required special training after becoming medically qualified. (1)

Korean National survey conducted by their society of Anesthesiologists, had a staggering results. Regarding to the preoperative role of anesthesiologists, 86.5% and 70.8% of those surveyed thought that the surgeon decides the operability and NPO time, respectively. During surgery, 46.2% of them answered that the surgeon is in charge of monitoring vital signs, despite the fact that this is actually one of most important roles of anesthesiologists. Strikingly, even the nurse was more likely to be selected as responsible for this role (33.3%), and only 18.8% of

people chose the anesthetist, considerably lower than in other surveys. They also thought that estimation of blood loss and administration of transfusions were performed by the surgeon (65.1% and 45.5%), followed by the nurse (24.3% and 42.7%). Only 8.2% and 9.5% of people chose the anesthesiologist for these roles. Also, the majority of participants (91.6%) believed that the surgeon performed resuscitation during surgery. Although many of those surveyed believed that the anesthesiologist performed anesthesia for surgery, most of them seemed to have very little understanding of the province of anesthesia itself. Regarding the roles outside the operating room, 6-28.7% of those surveyed were aware of anesthesiologists' other roles outside the operating room. On the other hand, 50.1% thought that the anesthesiologist performed local anesthesia for a simple surgery in the OPD, indicating that the public has little understanding of the actual roles of an anesthesiologist. (15)

In Brazil University hospital when patients questioned about what the anesthesiologist does during the procedure, 289 (72.25%) answered that he takes 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. They 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. (16)

In a developing country like Nigeria the figures show very limited knowledge of patients regarding the role of anesthetist. When asked who should administer anesthesia, only 25 (19.2%) of patients without a history of previous anesthetics (130) knew that anesthetists should administer anesthetics, whereas the majority (80.8%) did not know. Half (50%) of this cohort knew that the anesthetist is a qualified doctor, while those with tertiary education (69%) had the highest proportion ( $p < 0.05$ ). When asked what the role of the anesthetist was, 63 of 130 patients (48.5%) had no idea, while 31 of 130 patients (23.8%) listed putting patients to sleep, monitoring vital signs and offering pain relief. Twenty three (17.7%) patients mentioned putting patients to sleep only, while six (4.6%) mentioned offering pain relief and monitoring vital parameters. (10)

Korean study results showed that 38.7% of those surveyed experienced the roles of anesthesiologists via the mass media, and the results were similarly ordered in both groups (television > internet > informational brochure). Those surveyed differed in their opinion about the best way to raise awareness about anesthesia and the anesthesiologist depending in part on whether they had prior experience with anesthesia. The experienced public chose television program > information brochure > internet, but none of the experienced public chose television program > internet > information brochure. This difference may reflect the effects of information about anesthesia and the anesthesiologist given by brochure during admission for surgery. (15)

Despite the significance assigned to the anesthesiologist's qualifications, an overwhelming number of patients (77%) were reluctant to select their own anesthesiologist primarily because of their unfamiliarity with anesthesiologists and lack of ability to select an anesthesiologist. Fourteen percent of the patients left such a decision to the surgeon because they believed that the surgeon would make the best choice for them. Apparently, patients were unaware that the choice of the anesthesiologist does not always lie with the surgeon. (11)

### **Attitude towards Anesthesia**

Different studies were done regarding the patients attitude towards anesthesia and anesthetists. Respondents in Hong Kong the majority of patients would like to see the anesthetist preoperatively and many would like to see the anesthetist after the operation to find out how the anesthetic went. Thirteen percent (13%) of the patients did not really care about the anesthetic, as long as their operation turned out well. Over 1/3<sup>rd</sup> of the patients felt that the surgeon could tell them everything that they needed to know about the anesthetic for the operation. Ten percent (10%) of the respondents thought that the less they knew about the anesthetic the better; in contrast, some were quite concerned about anesthesia- about 20% of the patients were more nervous about anesthesia than the surgery itself. Most patients (90%) preferred to know all the possible complications of an anesthetic, no matter how serious they were. (1)

Indian Patients when asked about the information they would like to acquire during the preoperative visit by the anesthesiologist, 22% did not want any details. 39% wanted to know when they would recover from anesthesia, 26% wanted to know about postoperative pain, nausea and vomiting, 18% wanted to know when they could „get up from the bed and walk“, 17% wanted to have an account of the present illness, 6% only wanted to have a general idea about anesthesia and different methods of anesthetic techniques but 11% wanted to have a detailed description of anesthesia including its complications. (7)

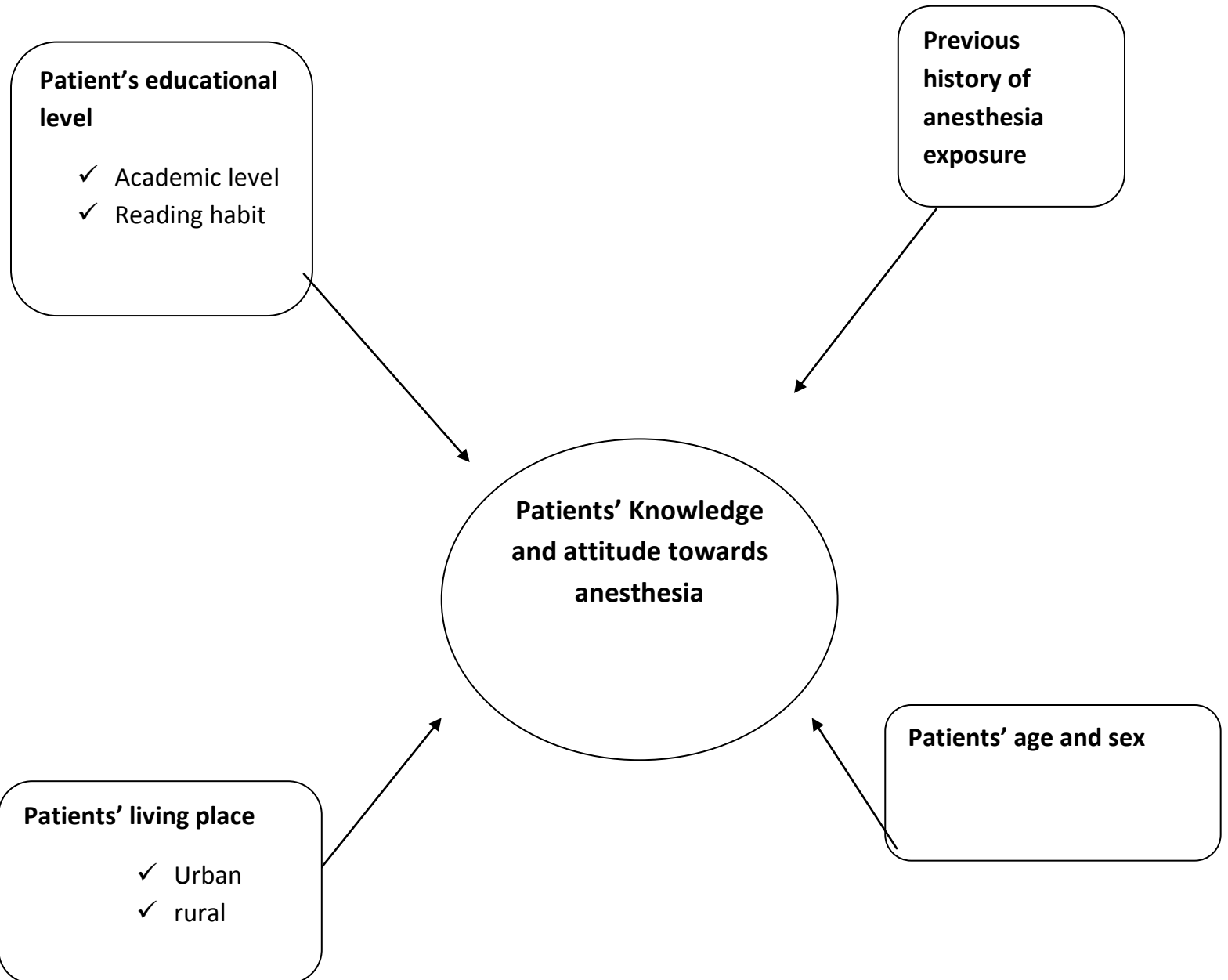
In Canada, women desired more information than men, as measured by the number of patients who responded to each question with one or both of the options ”have a right to know” and “would like to know.” Patients’ overall strong desire for information was not significantly affected by the number of previous operations. Patients placed the highest priority on meeting their anesthesiologist before the procedure. Receiving details of dangerous complications of anesthesia and surgery was consistently given low priority. (20) Findings from a similar study in Australia (18) were consistent with the Canadian data; however, more Australian patients had a desire to know about all possible complications including dangerous ones (Australian patients 92%, Canadian 72%, Scottish 43%). Similar results that imply that Americans want to know even more about anesthetic risks have been found. (19)

The most common fear among the participants about the anesthesia is the fear of pain during surgery. Other fears were needle prick, awareness during surgery, not coming out of anesthesia, backache, pain after surgery and death. (13) Similar results were obtained in the study done by Ketan Shevde. (11) An earlier survey carried out in Singapore reported that patient’s fear of surgery was that they might not come out of anesthesia but most of the patients were more afraid of post operative pain. (22) A survey done by Ahsan- Ul-Haq showed that 40% patients were afraid of surgery and 60% were afraid of anesthesia. (23)

Recently, the Korean society of anesthesiologists (KSA) produced a simple but informative cartoon brochure that was distributed to hospitals nationwide, and both the patients’ and anesthesiologists’ response was very positive. Considering that the most frequent source of media awareness about anesthesiologists is television program, the public seems to prefer to be

informed by methods already present in their daily lives. To provide information most effectively, the National Society of Anesthesiology of each country should consider its publics' thoughts and preferences, and periodic surveys every 5-10 years may be helpful to gather feedback from the public on this topic. (15)

## 2.2 Conceptual frame work



**Figure:** 1- Conceptual frame work of factors affecting patients' knowledge and attitude towards anesthesia and anesthetists.

## **2.3 Research Questions**

1. What information do patients have regarding anesthesia and anesthetists?
2. In Patients belief who anesthetizes them and what is the role of anesthetists?
3. What are factors associated with knowledge and attitude towards anesthesia and anesthetists?

## **Chapter 3**

### **3. Objectives**

#### **3.1 General objectives**

The objective of this study was to determine patients' knowledge and attitude towards anesthesia in Tikur Anbesa specialized Hospitals, Addis Ababa, Ethiopia from March 30- June 11, 2015 G.C

#### **3.2 Specific objectives**

The specific objective of this study included the following

1. To determine factors associated with patients' level of knowledge about anesthesia in Tikur Anbesa specialized Hospitals, Addis Ababa, Ethiopia from March 30- June 11, 2015 G.C
2. To identify patients attitude towards anesthesia in Tikur Anbesa specialized Hospitals, Addis Ababa, Ethiopia from March 30- June 11, 2015 G.C



## **Chapter 4**

### **4. Methods and Materials**

#### **4.1 Study area and period**

This study was conducted in Tikur Anbesa Specialized hospitals (TASH) in Addis Ababa – the capital city of Ethiopia. Addis Ababa is the largest city in Ethiopia with a population of 3,384,569 according to the 2007 population census in an estimated area of 530.14 square kilometer. In the city there are 11 hospitals have functional operation room and out of this 5 are Federal Hospitals. People from different regions of Ethiopia come to those hospitals to get specialized services. Currently TASH gives surgical services in the following departments Neurosurgery, Cardio-Thoracic surgery, Pediatric surgery, Urological surgery, ENT surgery and orthopedic surgery. There are around 100 surgical beds for all disciplines and there are 5 functional operating rooms. This study was conducted from March 30- June 11, 2015 G.C at TASH Addis Ababa, Ethiopia.

#### **4.2 Study design**

An analytic cross-sectional study design was followed from March 30- June 11, 2015 G.C A quantitative method was used since it enables us to collect numerical data and perform quantitative analysis using statistical procedures in order to determine the knowledge and attitude.

#### **4.3 Populations**

##### **4.3.1 Source population**

All patients who were admitted to undergo surgery at TASH in Addis Ababa, Ethiopia.

##### **4.3.2 Study population**

All patients who were admitted for elective surgery at TASH during the study period from March 30- June 11, 2015 G.C in Addis Ababa, Ethiopia.

## **4.4 Eligibility Criteria**

### **4.4.1 Inclusive criteria**

- All Elective surgical patients who were above 18 years of age.

### **4.4.2 Exclusive criteria**

- None elective Patients who were less than 18 years of age.
- Patients who were difficult to communicate (Unconscious, psychotic demented and Patients with language barrier).

## **4.5 Sample size**

Sample size for this study was not determined as all patients during the study period were included.

## **4.6 Sampling Procedure**

The sampling technique – all patients in TASH during the study period were used as a sample. Selection of hospital for the study was carried out using purposive sampling. Tikur Anbesa Specialized Hospital was selected, for the service it provides and for the number of case flow, (~ 100 adult elective patients per month). All adult elective patients who were to be operated during the study period were included in the study. Tikur Anbesa specialized hospital was selected for it is at the top of referral hospitals and tends to serve all kinds of people from all directions of Ethiopia.

## **4.7 Data Collection techniques**

### **4.7.1 Data Collection tool**

For data collection structured questionnaires were used. Structured English questionnaire was prepared and translated to Amharic at the time of data collection by data collector. The English questionnaire was prepared using literature review used in this study.

#### **4.7.2 Method of Data collection**

Data was collected using structured questionnaire a day before the surgery by data collector. Patients were informed they have a right not to participate in the study and the data collected from them was confidential. The data collection process was supervised by the principal investigator (PI) from March 30- June 11, 2015 G.C. Before the actual data collection, 1 data collector was provided with half day training about the aim of the study and the content of the data collection tool.

#### **4.7.3 Data quality assurance**

During data collection both principal investigator and data collector were checking for the completeness of the information needed. Furthermore the data was also checked for its completeness during analysis. After each day of data collection principal investigator stored data in a secure place.

#### **4.7.4 Pretest**

One week before the actual data collection 5% (10) of the questionnaires were tested for their validation. That is assessing their ease of comprehension, relevance in their intended topics, effectiveness in providing useful information and the degree to which the questions are understood by different individuals. The pretest was conducted at TASH Addis Ababa.

#### **4.7.5 Data analysis**

Data was cleared, coded and entered into computer and SPSS (version 20) was used for analysis. The univariate analysis such as percentage and frequency distribution of different characteristics of the questionnaire were analyzed. Bivariate analysis was used to determine the association of independent with the dependent variable. Logistic regression model was employed, odds ratio was used to measure their association and some of the results were computed with results of other study.

## 4.8 Variables

### 4.8.1 Dependant Variables

- Patients level of knowledge and attitude towards anesthesia.

### 4.8.2 Independent variables

- ✓ Age
- ✓ Sex
- ✓ level of education
- ✓ Previous History of anesthesia exposure
- ✓ living place (Urban/ rural)

## 4.9 Operational Definitions

**Anesthesia:** Regional or general anesthesia.

**Attitude:** A patient was considered as having positive attitude if he/she answered more than half of correct behavior (out of 11 score points).

**Good Knowledge & attitude:** a score point of  $\geq 12.5$

**Knowledge:** A patient will be considered as having knowledge if he/she answers correctly more than half of the knowledge questions ( out of 12 score points).

**Specialized service:** surgical service from different specialties and sub specialties.

**Surgery:** All major operations requiring general or regional anesthesia.

## 4.10 Ethical Consideration

Paper of approval and letter of permission was obtained before the beginning of data collection from departmental review board of Anesthesia, college of health science, Addis Ababa University. Permission letter was provided to TASH for proceeding data collection. The data collected was confidential and handled with care.

#### **4.11 Dissemination of results**

The study result will be disseminated to AAU Anesthesia department, EAA and TASH Library.

## Chapter 5

### 5.1 Results

From the sampled 195 respondents, all were included in the study as they were complete and showed consistency of response. Complete subject analysis was done for 195 patients, yielding a response rate of 100 %. In Socio-demographic characteristics of the study, as shown in table 1, of the 195 respondents, 113 (57.9 %) were males, 50 (25%) were in the age group of 26-35 years, Patients who came from rural area accounted 114(58.5%) and the academic level of 65 (33.3%) of patients was illiterate.

Table 1: Socio-demographic characteristics of patients in Tikur Anbesa specialized hospita, Addis Ababa, Ethiopia, 2015 GC.

Characteristics		Frequency	Percent
Sex	Male	113	57.9
	Female	82	42.1
Age	18-25	46	23.6
	26-35	50	25.6
	36-45	46	23.6
	46-55	31	15.9
	>55	22	11.3
Residence of Patients	Addis Ababa	64	38.7
	Major regional city	17	2.8
	Rural area	114	58.5
Academic level	Illiterate	65	33.3
	Manage to write & read	21	10.8
	Primary school level	42	21.5
	Secondary school level	42	21.5
	College / University	25	12.8

We determined previous history of anesthesia exposure and only 52(26.7%) had had anesthesia exposure before and 143(73.3%) had not been anesthetized before as it is depicted in Fig 1.

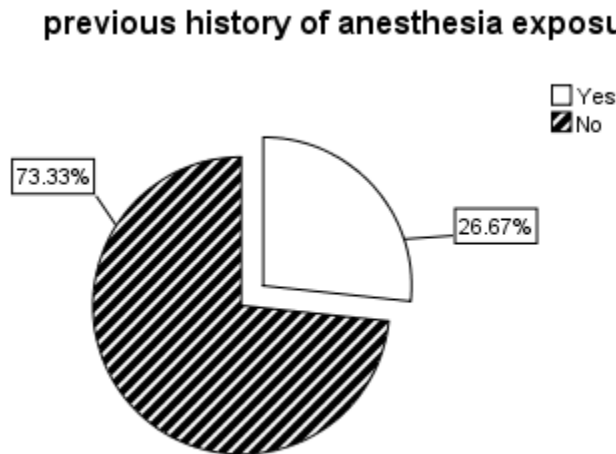


Figure 1: Previous history of anesthesia exposure in Tikur Anbesa Specialized Hospital, Addis Ababa, Ethiopia, 2015 GC.

### **Knowledge related results**

In this study we also assessed the knowledge of patients and 179(91.8%) of the patients believed that anesthesia is necessary for surgery. When asked about ways of anesthetic administration, 68(34.9%) did not know how. The question, foods allowed two hours before surgery, majority of Patients 123(63.1%) replayed nothing should be eaten.

Table 2: Percentage distribution of Patients knowledge of anesthesia in Tikur Anbesa Specialized Hospital, Addis Ababa, Ethiopia,2015 GC.

<b>Knowledge of Pt about anesthesia</b>		<b>Frequency</b>	<b>Percentage</b>
Is anesthesia necessary for surgery	Yes	179	91.8
	No	5	2.6
	Don't know	11	5.6
Foods allowed 2 hours before surgery	Liquid foods	14	7.2

	Solid foods	1	0.5
	Soft drinks	3	1.5
	None	123	63.1
	I don't know	54	27.7
Ways of anesthetic administration	Inhaled gas	8	4.1
	IV drug	67	34.4
	Inhaled gas & IV drug	34	17.4
	Oral pills	4	2.1
	Oral liquid	2	1.0
	Intramuscular injection	12	6.2
	I don't know	68	34.9
	Inhaled gas	67	34.4
Risk of anesthesia with co-existing disease	Yes	93	47.7
	No	10	5.1
	I don't know	92	47.2

Majority of patients 143(73.3%) said anesthesia has no complication as shown in figure 2. And the risk of anesthesia in co-existing disease and being a smoker or an alcoholic were around equal number of patients said it increases complication 93(47.7%) (Table 2).

On the assessment of patients knowledge about who provides anesthesia, majority 82(42.1%) of patients replied anesthetists. And 154(79%) of patients said the surgeon decides if a patient is fit for anesthesia or not.



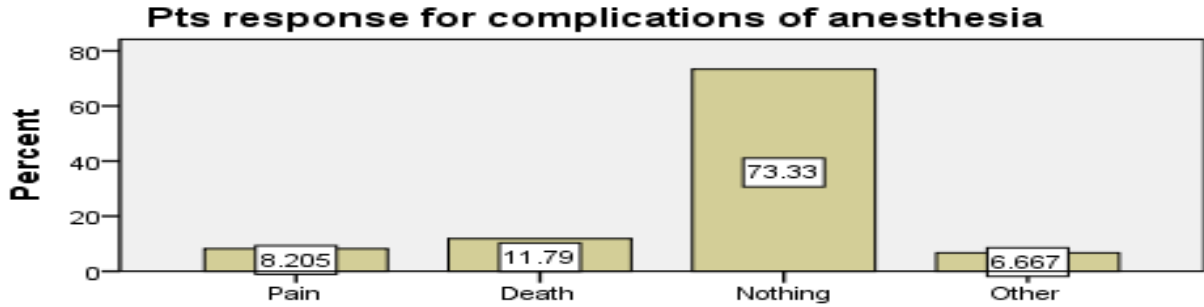


Figure 2: Patient’s response for complications of anesthesia in Tikur Anbesa Specialized Hospital, Addis Ababa, Ethiopia, 2015 GC.

Also majority of Patients 144(73.8%) thought Surgeons determines if they could eat before surgery and again only 6(3.1%) thought the anesthetist was responsible for it (shown in table 3).

The role of anesthetists intraoperatively by majority of Patients 112(57.4%) was replied as other than anesthetizing the patient, takes care of patient’s respiration, heart, blood pressure, pulse & other vital parameters and the roles anesthetists are involved, teaching and researching was 1(0.53%)(Fig. 3 & 4 respectively). Fifty four percent of the patients (106) thought the surgeon estimates and transfuses blood in OR. Majority of the Patients 139(73.1%) thought roles anesthetists involved was only anesthetizing in the OR. Once again surgeon took the lions share 102(52.3%) for making sure patient recovers smoothly post-op in the Patients response. The overall summery knowledge value shows that 156(80%) of Patients had poor knowledge.

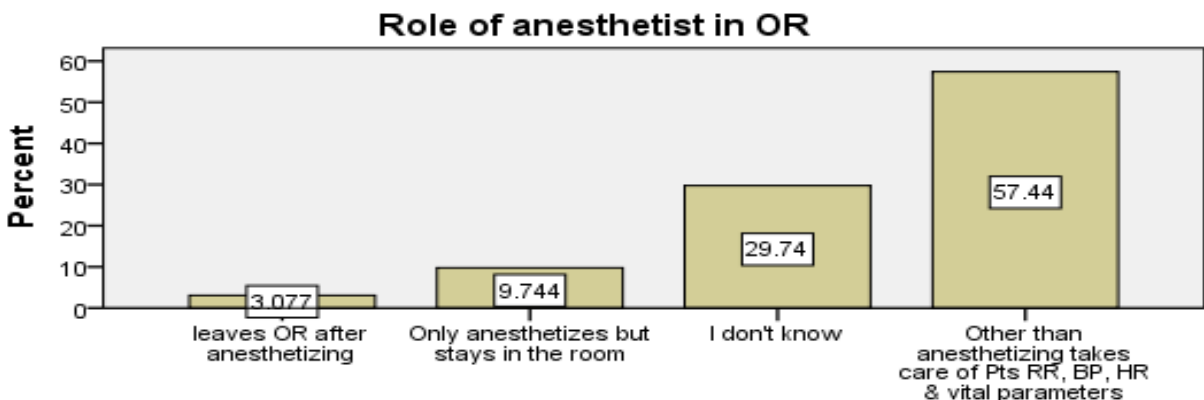


Figure 3: Patients response on roles anesthetists are involved in Tikur Anbesa Specialized Hospital, Addis Ababa, Ethiopia, 2015 GC.

Table 3: Percentage distribution of knowledge of Patients about anesthetists in Tikur Anbesa Specialized Hospital, Addis Ababa, Ethiopia, 2015 GC.

<b>Knowledge of Patients about anesthetist</b>		<b>Frequency</b>	<b>Percent</b>
In charge of administering anesthesia	I don't know	61	31.3
	Anesthetist	82	42.1
	Nurses	16	8.2
	Surgeons	36	18.5
Determines if the patients is fit for anesthesia	I don't know	30	15.4
	Anesthetists	6	3.1
	Nurses	5	2.6
	Surgeons	154	79
Decides if Patients can eat before the surgery	I don't know	30	15.4
	Anesthetists	6	3.1
	Nurses	15	7.7
	Surgeons	144	73.8
Role of anesthetist in OR	I don't know	58	29.7
	leaves OR after anesthetizing	6	3.1
	Other than anesthetizing takes vital parameters	112	57.4
	Only anesthetizes but stays in the room	19	9.7
Who estimate & transfuse blood in OR	I don't know	42	21.5
	Anesthetists	10	5.1
	Nurses	37	19
	Surgeons	106	54.4
Makes sure patients recovers smoothly post op	I don't know	33	16.9
	Anesthetists	41	21

	Nurses	19	9.7
	Surgeons	102	52.3
Summery knowledge value	Good knowledge	39	20
	Poor knowledge	156	80

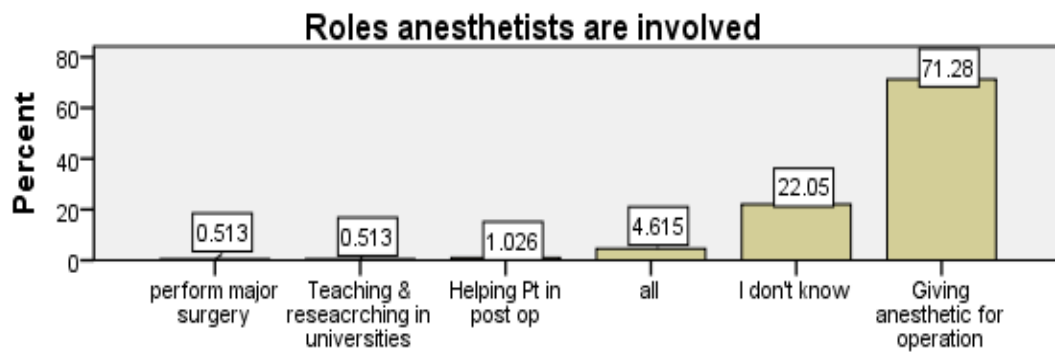


Figure 4: Patients knowledge on roles anesthetists are involved in Tikur Anbesa Specialized Hospital, Addis Ababa, Ethiopia, 2015 GC

The overall summery index for knowledge about anesthesia and anesthetists which were 12 point scores, disclose that the mean knowledge score was 4.73 (SD=2.1) and majority (34) patients had a score of 6 (Figure 5).

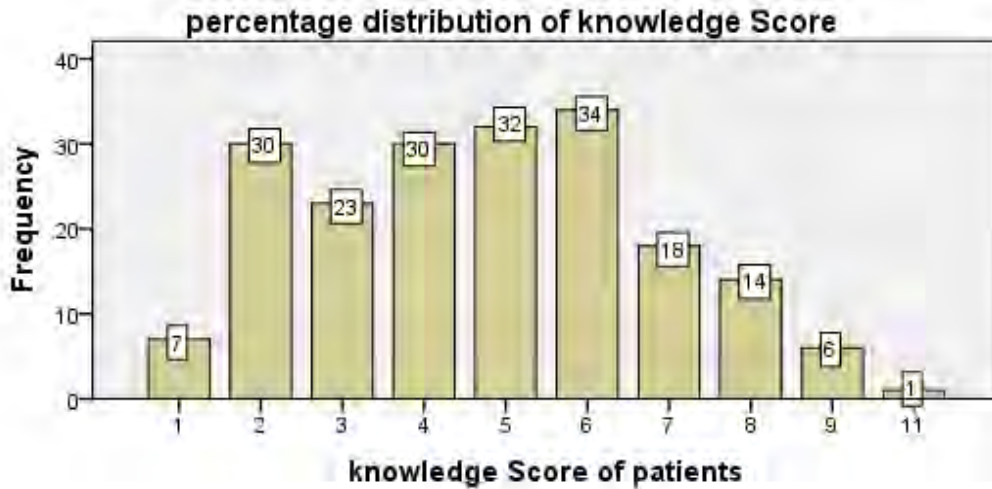


Figure 5: Percentage distribution of score values for knowledge in Tikur Anbesa Specialized Hospital, Addis Ababa, Ethiopia, 2015 GC.

### Attitude related results

Assessment of patients attitude were addressed as agree, disagree or neither of the two. In the question would you like to meet the anesthetist pre-op, 166(85.1%) patients agreed and 142(72.8%) prefer the less they know about anesthesia the better. For the question “all I need to know is what my surgeon tells me”, 107(54.9%) disagreed while 46(23.6%) neither agreed nor disagreed.

One hundred forty seven (75.4%) patients were not more nervous about the anesthetic than the surgery. For the question “anesthetists do not explain what is going to happen to you”, 67(34.4%) agreed while 92(47.2%) neither agreed nor disagreed. And in the same topic 130(66.7%) agreed that anesthetists should tell them all the complications no matter what.

For information regarding anesthesia, 135(69.2%) of patients preferred anesthetist explain to them than read about it. One hundred thirty seven (70.3%) patients do not care about the anesthetic so long as it was smooth operation. While 149(76.4%) believed a good anesthetist sees his/her patients pre and post -op. In this study, majority of Patients 102(52.3%) were afraid

of the surgery itself when considering an operation. The overall summery attitude value shows that 112(57.4%) of patients had negative attitude towards anesthesia and anesthetists (Table 4).

Table 4: Percentage distribution of patients attitude towards anesthesia & anesthetists in Tikur Anbesa Specialized Hospital, Addis Ababa, Ethiopia, 2015 GC.

<b>Attitude of Patients towards anesthesia and anesthetists</b>		<b>Frequency</b>	<b>Percentage</b>
I would like to meet the Anesthetist pre-op	Neither agree nor disagree	22	11.3
	disagree	7	3.6
	Agree	166	85.1
The less I know about the anesthetic the better	Neither agree nor disagree	25	12.8
	Disagree	28	14.4
	Agree	142	72.8
All I need to know is what my surgeon tells me	Neither agree nor disagree	46	23.6
	Disagree	107	54.9
	Agree	42	21.5
I am more nervous about anesthetic than surgery	Neither agree nor disagree	28	14.4
	Disagree	147	75.4
	Agree	20	10.3
Anesthetists don't explain what is going to happen	Neither agree nor disagree	50	25.6
	Disagree	10	5.1
	Agree	135	69.2
Anesthetists should tell all complications	Neither agree nor disagree	34	17.4
	Disagree	31	15.9
	Agree	130	66.7

I Would like to see Anesthetist post-op	Neither agree nor disagree	63	32.3
	Disagree	64	32.8
	Agree	68	34.9
Don't care about anesthetic as long as smooth operation	Neither agree nor disagree	19	9.7
	Disagree	39	20.0
	Agree	137	70.3
Good anesthetist sees Pt pre & post-op	Neither agree nor disagree	42	21.5
	Disagree	4	2.1
	Agree	149	76.4
What patients are afraid of considering operation	Not afraid	48	24.6
	Nausea & vomiting	5	2.6
	Not waking up	15	7.7
	Feeling pain	17	8.7
	Taking Anesthetic	8	4.1
	Surgery itself	102	52.3
Summery attitude value	Positive attitude	83	42.6
	Negative attitude	112	57.4

The summery index for attitude which was 11 point scores, revealed that the mean attitude score was 5.15 (SD= 1.62) and the majority (60) patients had a score of 5 as shown in

figure6.

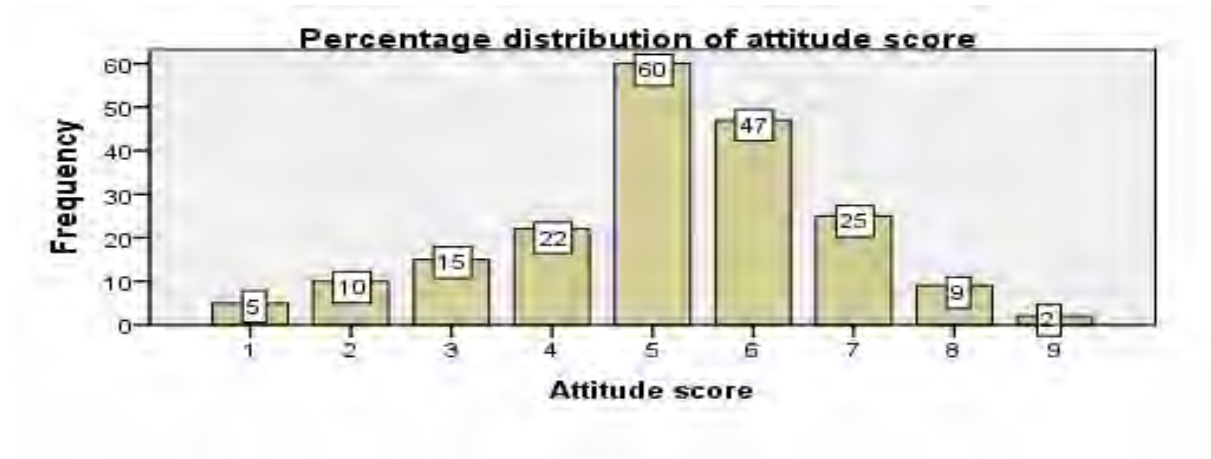


Figure 6: Percentage distribution of score value for attitude in Tikur Anbesa Specialized Hospital, Addis Ababa, Ethiopia, 2015 GC.

The overall summery index for knowledge and attitude revealed that the mean score for knowledge and attitude was 9.89 (SD= 3.204). From Fig. 5 we can learn that 133(68.2%) of patients had poor knowledge and attitude while the rest had good knowledge and attitude.

### Over all value of Attitude & Knowledge



Figure 7: Percentage distribution of knowledge and attitude among patients in Tikur Anbesa Specialized Hospital, Addis Ababa, Ethiopia, 2015 GC.

A logistic regression analysis was conducted to predict the knowledge and attitude of the patients using the exposure variables Age, Sex, Residence, Educational level and previous history of anesthesia exposure.

Prediction success over all was 77.4% (91% for Poor knowledge and attitude and 48.4% for Good knowledge and attitude). Sex ( $p = 0.01$ ), Academic level ( $p = 0.006$ ) and Residency ( $p = 0.018$ ) made a significant association. Age and previous history of anesthesia were not statistically significant with p-value of 0.931 & 0.199 respectively. The EXP (B) value indicated that when Sex is raised by one unit (from female to male) the odds ratio is 2.706 times as larger. All shown in Table, 5 which depicts Bivariate relationship between socio demographic characteristics, previous history of anesthesia & knowledge and attitude towards anesthesia and anesthetists.

Table 5: Socio-demographic characteristics & related to knowledge & attitude towards anesthesia among Patients in Tikur Anbesa Specialized Hospital, Addis Ababa, Ethiopia, 2015 GC.

Characteristics		Knowledge & attitude		Mean knowledge & attitude score	P - value	Odds ratio with 95 % CI
		Poor	Good			
Sex	Female	64(32.8)	18(9.2)	9.34	<b>P = 0.01</b>	1
	Male	69(35.4)	44(22.6)	10.28		2.72 (1.27, 5.894)
Age	18–25	27(58.7)	19(42.3)	10.89	P = 0.931	1.55 (0.35, 6.78)
	26-35	33(66)	17(34)	10.14		1.4 (0.325, 6.05)
	36-45	33(71.7)	13(28.3)	9.39		1.57 (0.36, 6.78)
	46-55	22(71)	9(28)	9.94		1.04 (0.22, 5.89)
	>55	18(81.8)	4(18.2)	8.89		1
Academic level	Illiterate	57(87.7)	8(12.3)	8.4	<b>P = 0.006</b>	1
	write & read	14(66.7)	7(33.3)	10.38		2.69 (0.75, 9.62)



	Primary school	30(71.4)	12(28.6)	9.6		1.77 (0.58, 5.39)
	Secondary school	23(54.8)	19(45.2)	10.81		3.84 (1.26, 11.68)
	College/University	9(36)	16(64)	12.28		8.35 (2.52, 27.65)
Residence	Rural area	88(77.2)	26(22.8)	9.24	<b>P = 0.018</b>	1
	Addis Ababa	33(51.6)	31(48.4)	11.09		2.9 (1.3, 6.47)
	Major city	12(70.6)	5(29.4)	9.71		0.8 (0.22, 2.87)
History of anesthesia	No	101(70.6)	42(29.4)	9.69	P = 0.199	1
	Yes	32(61.5)	20(38.5)	10.42		1.65 (0.767, 3.58)
Total		133(68.21)	62(31.79)	9.89		

### The major findings from this study were

- Only 5% of patients think that anesthetists are responsible for blood estimation and transfusion in OR and 42% of Patients thought anesthetists are in charge of administering anesthesia for Patients.
- Seventy nine percent (79%) of the patients thought surgeons decide if a patient is fit for anesthesia or not.
- Eighty percent (80%) of patients had poor knowledge & attitude towards anesthesia.
- Forty two percent (42.6%) of the patients had positive attitude towards anesthesia.
- Sixty eight percent (68.2%) had poor knowledge & attitude towards anesthesia with a mean score of 9.98.
- Sex, Educational level & residency of patient had significant association with knowledge & attitude towards anesthesia.
- Age & pervious history of anesthesia exposure had no statistically significance association with knowledge & attitude towards anesthesia.

## Chapter 6

### 6.1 Discussion

Anesthesia is a major supportive specialty which allows major advanced surgery to be performed. Health awareness is improving all over the world, Ethiopia is no exception. Therefore, the purpose of this study was to determine the knowledge and attitude of patients towards anesthesia and anesthetists.

The common Amharic translation for anesthetist is “የሰመመን ሰጪ ባለሙያ” which does not imply the actual work of the professional. It was thus not surprising to learn that only 42% of the patients knew, anesthesia was provided by the anesthetists, which shows a better result from a study done in Nigeria which was 19% for patients without history of previous anesthesia exposure (10). This proportion is very low when compared to a study done in Korea, which reported 74% (15). Also in our study only 3% of the patients believed that anesthetists are responsible for making sure the patient is fit for anesthesia. The reason for this poor knowledge may be connected to the fact that anesthetists are often busy in operating theatre with few and limited time to interact with their patients pre & post-operatively. This also implies that a correct Amharic translation should be introduced and reinforced to both patients and medical staffs to be used.

There was no statistically significant association between previous history of anesthesia and knowledge & attitude of anesthesia, which was similar finding with study done in India and Hong Kong (7) (1) respectively. The reason behind for this could be the fact that pre- anesthetic visits (discussion) are very brief and most patients may not be consciously aware of or recall the presence of anesthetist during the Peri-operative period.

Knowledge of the route of General anesthesia administration was correctly answered by 17% of the patients which is low from another study done in Pakistan, which was 32%, which still was very low. These countries are categorized as third world, which states high illiteracy rate, as it was also apparent in this study too. When asked about the risk of anesthesia in high risk patients like patients with hypertension, asthma, 47% said it has increased risk which was similar

finding with the study done in India (41%) (7). Patients were also asked if they felt fasting was needed before surgery and 63% said yes whereas the study conducted in India was 73%.

There is a wide spread misconception of the role of anesthesia all over the world and there is a considerable confusion in the public mind about what the anesthetist actually do during the surgery and what their other responsibilities are. In our study a bit higher value which is 57% of patients taught anesthetists intra-operatively monitor heart, blood pressure and breathing. While in a study done in Hong Kong, 25% (1) and in Korean study was 18.8% (15). For the question who estimates and transfuse blood intra-op 5% of patients said anesthetist, which was similar result with the study done by Korean association of anesthesiologists (15). For the smooth recovery in post-op, 21% of our patients replied anesthetists are responsible while in the study done in Hong Kong it was 65% (1). The reason for this significant variation could be most patients are sedated intra-operatively therefore, they know less about the role anesthetists were playing during this period.

Regarding complications of anesthesia 73% of our patients replied anesthesia has no complication while in study done in India only 31% thought it has no complication (7). This could be because our patients' knowledge towards anesthesia is poor as shown under result session.

Most of anesthetists Peri-op works were perceived as the work of a surgeon (such as estimating and transfusing blood in OR, which was 54.4% of the patients). This could be because in TASH (perhaps in most Ethiopian hospitals) consent is taken by surgical colleagues which might have misled the patients. Therefore, it is of paramount that anesthetists take the responsibility to give information about anesthesia, possible complications and obtain separate anesthesia consent.

Majority of our patients would like to meet their anesthetist pre-operatively (85%) and many (34%) would like to see the anesthetist to find out how the anesthetic went. Almost similar results were found in the study done in Hong Kong which was 77% & 42% respectively (1). Seventy two percent (72%) of our patients felt that the less they knew about the anesthetic the better and 21% agreed all they needed to know was what their surgeon tells them, again similar results were seen in the study done in Hong Kong. The reason for the negative attitudes may be

most of our patients (80%) had poor knowledge regarding anesthesia which might have led to misconception and unfavorable attitude. And also as surgeons spend more time with the patients in the ward and clinic, patients may think the surgeon gives them all the information they need to know.

For the question „anesthetists do not explain what is going to happen to you“ 34% agreed and 47% neither agreed nor disagreed. This shows that most of the patients do not know how anesthetists work and do not expect an explanation from them. Sixty nine percent (69%) of the patients preferred anesthetists explain them about anesthesia than to read about it. This could be because of the fact that majority of our patients (~66%) academic level was less than secondary school and their reading habit might not be as such promising. In some countries patients who are to undergo surgery are provided at the time of admission with small booklets that describes the roles of anesthetists. Patients may also be shown a video of Peri-operative patient’s care and the procedures followed after admission to the wards. This may help alleviate anxiety and help the patient get the most out of the service available (e.g. anesthetic and pain management options) (1).

Even though 34% of patients from this study would like to see their anesthetist post-op, 70% of the patients do not care about the anesthesia as long as the operation went smoothly. However the findings from Hong Kong revealed a different value which was 42% and 13% respectively (1). In this result, where significant number of patients do not care about anesthesia it shows the need to tackle this unfavorable attitude right away as it may affect different aspects of patient/anesthetist interaction and satisfaction.

Some exposure factors like Gender, educational level and residency were statistically significant. The same findings were observed in a study done in Saudi Arabia and Nigeria (14) (10) respectively. In our country, it is known that males are more educated than females and people who live in Urban areas are more likely to be educated than the people in rural areas according to the 2011 Ethiopia Demographic and Health survey ( 2011 EDHS) (24). It is also vivid that more educated people tend to read and have a better general knowledge than those who do not.

Previous history of anesthesia and age of patient were not statistically significant. This shows that patients were not well informed by the anesthetist by their previous exposure to anesthesia and educational level of patients is haphazardly distributed in all age groups.

Significant number of our patients (68%) had poor knowledge and attitude towards anesthesia, which heralds the prompt need of anesthetists and stake holders to work hand in hand and improve Ethiopian patient's health information regarding anesthesia and bring about a positive attitude towards the profession and its professionals. A better understanding and recognition of the importance of anesthesiology may help increase funding for research and development („certain high profile“ areas of medicine such as research into AIDS already benefited significantly in this way) and persuade health care providing bodies to channel more resource in to this field (1).

## **Chapter 7**

### **7. Strength and Limitations of the study**

#### **7.1 Strength of the study**

- The study was conducted in Tikur Anbesa Specialized Hospital (TASH) which is at the very top of referral system in our country. This has provided us with variety of patients from every corner of Ethiopia. Hence this has helped us survey Ethiopian patient's knowledge and attitude towards anesthetists and anesthesia in a single confined area.
- And we were able to identify a number of areas of deficiency in patients' knowledge & attitude towards anesthesia that need to be addressed.

#### **7.2 Limitation of the study**

- The study design followed was cross-sectional study design which is used to investigate a finding on single point in time, which would be impossible to determine the cause and effect of the topic understudy.
- Sample Bias: because study subjects were recruited from a single selected hospital (TASH) in Addis Ababa, the result of the study could be difficult to generalize to the whole population of patients in Addis Ababa/ Ethiopia.
- The sample size being small, we may not be accurate in generalizing the interpretations to the entire populations. Also we might have shown some bias in selecting some patients and promoting some patients when certain questions were not well understood by the patients.

## Chapter 8

### Conclusion & Recommendation

#### 8.1 Conclusion

- Only five (5%) percent of the patients responded that it is the anesthetists who estimates and donates blood intra-operatively this shows us that significant number of patients do not know the role of anesthetist intra-operatively.
- Majority of the patients (69%) do not believe anesthetists explain what is going to happen to them during the peri-operative care.
- Despite surveys on the overall knowledge & attitude of patients overseas also shows poor results, in our study it is much more significant number of patients (68%) who had poor knowledge & attitude.
- Gender, Academic level and Residence of patients had significant association with knowledge and attitude of patients towards anesthesia. While Age of patients and previous history of anesthesia exposure did not show statistical significance.
- The mean score of knowledge and attitude towards anesthesia and anesthetists was  $9.89 \pm 3.2$  and the population proportion was  $0.31 \pm 0.03$ .
- The finding from this study shows that, there is a need to educate the public about the role of the anesthetist in Peri-operative care. Pre-operative meeting should involve matters like the various options available to anesthetize the patient for that particular surgery, the benefits, safety and risk of each method. Our success in educating the public about anesthesia and role of anesthetist will decide the future image of our specialty.

## **8.2 Recommendation**

The principal investigator would like to recommend the following measures to be addressed by the respective stake holders.

### **1. To all anesthetists**

- To do a detailed and two way interaction with patients during pre- anesthetic evaluation.
- To do post-op patient visit to discuss how the anesthetic went.

### **2. To Anesthesia scholars**

- To research on ways to improve patients knowledge and attitude towards anesthesia and anesthetists.

### **3. To Ethiopian Anesthesia Association (EAA)**

- To prepare leaflets, brochures, videos, handouts, or ways to improve patients knowledge and attitude and to disseminate it to all hospitals where anesthesia service is provided.
- To provide a good Amharic term, for „Anesthesia“ which is not misleading, and disseminate the information to all anesthetists and concerned bodies.

### **4. To Tikur Anbesa Specialized Hospital (TASH)**

- To prepare a separated consent form for anesthesia to be explained by the anesthetists.



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**Annex I**

**ADDIS ABABA UNIVERSITY**

**COLLEGE OF HEALTH SCIENCE**

**DEPARTMENT OF ANESTHESIA**

**March, 2015**

**Prepared by: Naod Bulti (M.Sc in anesthesia student)**

**This questionnaire is to be filled by surgical patients. I would like to inform you that you have a right not to participate in the study. Thank you for your co-operation in advance.**

**Socio demographic Characteristics**

1. Age \_\_\_\_\_
  - a. 18 – 25
  - b. 25- 35
  - c. 35- 45
  - d. 45 – 55
  - e. > 55
2. Sex \_\_\_\_
  - a. Male
  - b. Female
3. Academic level
  - a. Illiterate
  - a. Manage just to write & read
  - b. Primary school level
  - c. Secondary school level
  - d. College or university graduate
4. Residence Location

- a. Addis Ababa
  - b. Major regional city
  - c. Rural area
  - d. Other \_\_\_\_\_
5. Previous history of anesthesia exposure
- a. Yes
  - b. No

**Patient's knowledge regarding the anesthesia service**

1. Do you think anesthesia is necessary for a surgery?
- a. Yes
  - b. No
  - c. Don't know
2. Is anesthetic during surgery
- a. Inhaled gas
  - b. Intravenous drug
  - c. Inhaled gas & Intravenous drug
  - d. Oral pills
  - e. Oral liquid
  - f. Intra muscular injection
  - g. I don't know
3. Two hours before the surgery what foods are allowed?
- a. Liquid foods
  - b. Solid foods
  - c. Soft drinks
  - d. None
  - e. I don't know
4. What kind of complication could happen from anesthesia?
- 
-

5. If a patient suffers from a disease (Eg. DM, HTN) and is old, smoker or an alcoholic then the risk during anesthesia increases.
  - a. Yes
  - b. No
  - c. I don't know

**Patient's knowledge about Anesthetist**

6. Who is in charge of administering anesthesia for surgery?
  - a. Surgeons
  - b. Nurses
  - c. Anesthetists
  - d. I don't know
7. Who determines whether the patient is fit for anesthesia/ surgery?
  - a. Surgeons
  - b. Nurses
  - c. Anesthetists
  - d. I don't know
8. Who decides if a patient can eat before surgery?
  - a. Surgeon
  - b. Nurses
  - c. Anesthetists
  - d. I don't know
9. What do you think the role of the anesthetist is in the operating room?
  - a. Only anesthetize but stays in the room
  - b. Other than anesthetizing the patient takes care of patient's respiration, heart, blood pressure, pulse & other vital parameters.
  - c. Leaves the operating room after anesthetizing the patient
  - d. I don't know
10. Who estimates and transfuses blood when needed during an operation?
  - a. Surgeon
  - b. Nurses
  - c. Anesthetists

- d. I don't know
11. Who makes sure the patient recovers smoothly after surgery?
- a. Surgeon
  - b. Nurses
  - c. Anesthetists
  - d. I don't know
12. In which of the following roles are anesthetists involved?
- a. Giving anesthetic for operation
  - b. Helping patient in post operative period
  - c. Teaching and researching in universities
  - d. Giving advice to specialty doctors
  - e. Resuscitation anywhere in the hospital
  - f. Perform major surgery
  - g. All
- Attitude of patients'**
13. I would like to meet the anesthetist before my operation every time.
- a. Agree
  - b. Disagree
  - c. Neither agree nor disagree
14. The less I know about the anesthetic for my operation, the better.
- a. Agree
  - b. Disagree
  - c. Neither agree nor disagree
15. All I need to know about my operation is what my surgeon tells me.
- a. Agree
  - b. Disagree
  - c. Neither agree nor disagree
16. I am more nervous about the anesthetic than the surgery itself.
- a. Agree
  - b. Disagree
  - c. Neither agree nor disagree

17. Anesthetists do not take time to explain what is going to happen to you.
- Agree
  - Disagree
  - Neither agree nor disagree
18. I prefer to have an anesthetist explain things to me then having to read about anesthetics from brochures or handouts.
- Agree
  - Disagree
  - Neither agree nor disagree
19. Anesthetists should tell you what all complications of anesthetic are, no matter how serious.
- Agree
  - Disagree
  - Neither agree nor disagree
20. I would like to see the anesthetist after operation so I could find out how the anesthetic went.
- Agree
  - Disagree
  - Neither agree nor disagree
21. I don't care about the anesthetic as long as my operation turns out well.
- Agree
  - Disagree
  - Neither agree nor disagree
22. A good anesthetist is someone who sees me before and after the operation, and not someone who tells me how qualified he is.
- Agree
  - Disagree
  - Neither agree nor disagree
23. What are you afraid of or more nervous about when considering operation?
- Surgery itself
  - Taking Anesthetic

- c. Feeling pain
- d. Not weakling up
- e. Nausea and vomiting
- f. I am not afraid
- g. Other \_\_\_\_\_