

## Patients' Knowledge and Attitude towards Anesthesia in Tikur Anbesa Specialized Hospital

Research Article

Naod B<sup>1\*</sup>, Admasu W<sup>2</sup>, Ahmed Y<sup>1</sup>

<sup>1</sup> Collage of Health sciences, Department of Anesthesia, Jimma University Jimma, Ethiopia.

<sup>2</sup> Collage of Health sciences, Department of Anesthesia, Addis Ababa University, Addis Ababa, Ethiopia.

### 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 as a discipline and lower compared to other medical discipline.

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

**Method:** The study was conducted in TikurAnbesa Specialized Hospital. An analytic cross-sectional study design was conducted from March 30- June 11, 2015 G.C. All adult elective patients in TikurAnbesa Specialized 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.

**Keywords:** Knowledge; Attitude; Anesthesia; Anesthetist; Patients.

### Introduction

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].

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].

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].

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 as a discipline and the professionals (Anesthetists) is lower compared to other medical discipline [1].

#### \*Corresponding Author:

Naod Bulti \*

Collage of Health sciences, Department of anesthesia, Jimma University Jimma,

P.O.Box 378, Ethiopia

Email : naod\_habesha@yahoo.com

Received: March 22, 2016

Accepted: May 03, 2016

Published: May 04, 2016

**Citation:** Naod B, Admasu W, Ahmed Y (2016) Patients' Knowledge and Attitude towards Anesthesia in Tikur Anbesa Specialized Hospital. *Int J Anesth Res.* 4(5), 229-235.

doi: <http://dx.doi.org/10.19070/2332-2780-1600052>

**Copyright:** Naod B<sup>®</sup> 2016. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution and reproduction in any medium, provided the original author and source are credited.

In our country, Ethiopia, the term 'Anesthesia' has no equivalent Amharic meaning. The commonly used terms "anesthesia" and/or "anesthesia" also mean numbness and illusion respectively. 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.

Now a days, 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 equipment 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 [4].

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].

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

Because our patients have less knowledge and attitude towards anesthesia,, they are often confused to choose between the types of anesthesia provided. They also cannot 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 [5].

## Materials and Methods

An analytic cross-sectional study design was conducted from March 30- June 11, 2015 G.C at TikurAnbesa Specialized hospital (TASH), located 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. 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.

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. TikurAnbesa Specialized Hospital was selected, for the service it provides and for the number of case flow (around 100 adult elective patients per month). All adult elective patients who were to be operated during the study period were included in the study. This hospital was also selected for it is at the top of referral system with in the hospitals and tends to serve all kinds of people from all directions of Ethiopia.

Data was collected using structured questionnaire a day before the surgery by data collectors. 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.

## Ethical Clearance

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. The objective and confidentiality of the study was explained orally to all patients.

## 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 was 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.

## 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, 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).

### 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 anesthetics were given. The question, foods allowed two hours before surgery, majority of Patients 123(63.1%) replied nothing should be eaten (Table 2).

On the assessment of patients knowledge about who provides anesthesia, majority 82(42.1%) of patients replied anesthetists.

**Table 1. Socio-demographic characteristics of patients in TikurAnbesa specialized hospita, Addis Ababa, Ethiopia, 2015GC.**

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 anesthesia exposure before and 143(73.3%) had not been anesthetized before.

**Table.2 Percentage distribution of Patients knowledge of anesthesia in TikurAnbesa Specialized Hospital, Addis Ababa, Ethiopia, 2015 GC.**

Knowledge of Pt about anesthesia		Frequency	Percentage
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
	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

And 154(79%) of patients said the surgeon decides if a patient is fit for anesthesia or not. 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 (Table 3).

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.

### 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 (Table 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. 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.

### 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 pur-

**Table 3 . Percentage distribution of knowledge of Patients about anesthetists in TikurAnbesa Specialized Hospital, Addis Ababa, Ethiopia, 2015.**

Knowledge of Patients about anesthetist		Frequency	Percent
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

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

Attitude of Patients towards anesthesia and anesthetists		Frequency	Percentage
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
	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

pose of this study was to determine the knowledge and attitude of patients towards anesthesia and anesthetists. 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% [7]. 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 [1, 8] 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 sets 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%)[8].

There is a wide spread misconception of the role of anesthesia

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

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	P = 0.01	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	P = 0.006	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	P = 0.018	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(68.2)	62(31.79)	9.89		

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% [7]. 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 [7]. 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.

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 to be operated 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].

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 [9, 10] respectively. In Ethiopia, 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 [11]. 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].

## 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 (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 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 sur-

gery, 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.

## References

- [1]. Irwin MG, Fung SK, Tivey S (1998). Patients' knowledge of and attitudes towards anaesthesia and anesthetists in Hong Kong. *Hong Kong Med J* 4(1): 16-22.
- [2]. Khan F, Hassan S, Zaidi A (1999). Patient's view of the anesthetist in a developing country. *J Pak Med Assoc* 49(1): 4-7.
- [3]. Bacon DR, Lema MJ, Yearley CK (1993) For all the world to see: anesthesia at the 1939 New York World's Fair. *J ClinAnesth* 5(3): 252-8.
- [4]. Hofer Ck, Ganter Mt, Furrer L, Guthauser G, Klaghofer R, et al. (2004) Patients' needs and expectations regarding anaesthesia. A survey on the preanaesthetic visit of outpatients and anaesthesiologists. *Anaesthesist* 53(11): 1061-8.
- [5]. Minhas MR, Kamal R, Afshan G, Raheel H (2005) Knowledge, attitude and practice of Parturient regarding epidural analgesia for labor in a university hospital in Karachi. *J Pak Med Assoc* 55(2): 63-6.
- [6]. Eyelade OR, Ayunyemi JO, Adewole IF (2010) Patients' perception and knowledge of anesthesia and anesthetists-a questionnaire survey. *SAfr J Anesthesia Analg* 16(4): 28-31.
- [7]. Lee JJ, Lee NH, Park CM (2014) Public awareness about the speciality of anesthesiology and the role of anesthetologist- a national survey. *Korean J Anesth* 66(1): 12-17.
- [8]. Gurunathan U, Jacob R (2004) The public's perceptions of anesthetologists-Indian attitude. *Indian J. anaesth* 48(6): 456-460.
- [9]. Baaj J, Tarouri MS, Hussein BM, Ayyaf HL (2006) Saudi patients knowledge and attitude towards anesthesia and anesthetologists- a prospective cross-sectional interview questionnaire. *M.E.J Anesth* 18(4): 679-693.
- [10]. Eyelade OR, Ayunyemi JO, Adewole IF (2010) Patients' perception and knowledge of anesthesia and anesthetists-a questionnaire survey. *SAfr J Anesthesia Analg* 16(4): 28-31.
- [11]. Central Statistical Agency [Ethiopia] and ICF International. 2012. Ethiopia Demographic and Health Survey 2011. Addis Ababa, Ethiopia and Calverton, Maryland, USA: Central Statistical Agency and ICF International.