ADDIS ABABA UNIVERSITY

COLLEGE OF MEDICINE

ANAESTHESIA PROGRAM

KNOWLEDGE, ATTITUDES AND PERCEIVED BARRIERS ON POSTOPERATIVE PAIN MANAGEMENT AMONG ANESTHETISTS' IN ADDIS ABABA GOVERNMENT HOSPITALS, ADDIS ABABA- ETHIOPIA 2015.

BY: YOSEF TIBEBU

ADVISER: EYAYALEM MELESE (MSC, LECTURER IN AA UNIVERSITY)

A THESEIS SUMMITTED TO SCHOOL OF GRADUATE STUDIES, HEALTH SCIENCE COLLEGE, ADDIS ABABA UNIVERSITY IN PARTIAL FULFILMENT OF REQUIREMENT FOR DEGREE OF MASTERS IN ANESTHESIA.

JULY 2015

ADDIS ABABA

ETHIOPIA

NAME OF INVESTIGATOR	YOSEF TIBEBU (BSC, MSC CANDIDATE)
NAME OF ADVISOR (S)	EYAYALEM MELESE (MSC,, LECTURER IN AAU)
FULL TITLE OF RESEARCH PROJECT	KNOWLEDGE, ATTITUDES AND PERCEIVED BARRIERS ON POSTOPERATIVE PAIN MANAGEMENT AMONG ANESTHETISTS" IN ADDIS ABABA GOVERNMENT HOSPITALS, ADDIS ABABA- ETHIOPIA 2015.
STUDY AREA	ADDIS ABABA GOVERNMENT HOSPITALS
TOTAL COST OF THE PROJECT	18,271.55 ETB
SOURCES OF FUNDING	AAU
ADDRESS OF INVESTIGATOR	CELL PHONE:0911952242 EMAIL: YOSEFTIBEBUS@GMAIL .COM

ABSTRACT:

Background: Postoperative pain (POP) is a common postoperative problem after surgical procedure worldwide. Despite advanced development and understanding of pain physiology and perception, many literature pointed out that patient are experiencing needless suffering of post surgical pain. Undertreated and uncontrolled postoperative pain reduce physical and social performance, impaired quality of life and patient dissatisfaction, delayed discharge, increase use of health care resources and its associated high cost during their stay in hospital. There are many potential barriers to adequate postoperative pain management have been cited by literatures includes lack of health professional knowledge, negative attitudes as a result of poor or absence of training and education system.

Purpose: This study aimed to assess knowledge, attitude, and perceived barriers regarding postoperative pain management among anesthetists‟ in Addis Ababa Government Hospitals, Ethiopia 2015.

Methods: A cross- sectional descriptive questionnaire survey was administered to anesthetists who were working in 11 AAGH. Questionnaire items covered knowledge, attitude, perceived barriers, and the participant‟s opinions on barriers to POPM. A total of 150 questionnaires were distributed and 102 participants were analyzed with response rate 68%. The statistical significant level was set at $p< 0.05$ statistical analysis were performed using SPSS version 20 software package.

Results: The mean score of correctly answered questions by the participants were 4.9 with standard deviation ±2.3 out of 12 items ranging from a minimum of 1 to a maximum of 11. There was significant knowledge difference among anesthetists‟ in their academic level. The mean number of correct responses provided by Msc holders was higher than Bsc and diploma holders at 6.9, 4.7, and 4.4 respectively. Only 6.9% of participants were knowledgeable.

Conclusion: The overall knowledge deficit of anesthetist‟ was found. An effective educational strategy for surgical pain management is needed in order to improve health professionals‟ knowledge and clinical practices.

ACKNOWLADGMENT

I would like to express my heartfelt gratitude to my advisors, Mr. Eyayalem Melesse who have helped me out to the completion of this research for giving very important suggestions. I would also like to extend my appreciation to Addis Ababa University for giving me this opportunity to conduct this research. Finally, praise to my friends who helped me out by being on my side and provide their precious time.

Contents

TABLES AND FIGURES

ACRONYMS AND ABBREVATION

AAU- Addis Ababa University

AAGH- Addis Ababa Government Hospitals

AIDS- Acquired Immune Deficiency Syndromes

GNI- Gross National Income

HIV- Human Immunodeficiency Virus

INCB- International Narcotics Control Board

IASP- International Association Study of Pain

IRB- Institutional Review Board

MOH- Ministry of Health

OR- Operation Room

PCA- Patient Control Analgesia

POPM- Postoperative pain management

POP- Postoperative Pain

UK- United Kingdom

WHO- World Health Organization

INTRODUTION

1.1.BACKGROUND:

IASP define pain an unpleasant sensory and emotional experience associated with actual or potential tissue damage or described in terms of such damage.

The importance of postoperative pain management has been repeatedly demonstrated in the past two decades. Adequate postoperative pain management (POPM) can reduce the patients‟ length of hospitalization and decrease postoperative complications(1). However, research has consistently demonstrated in pain management, pain has not been satisfactorily relieved(2, 3), results to unnecessary suffering of a patient, increased complications and increased costs, even in developed world(2, 4).

Pain causes an increase in the sympathetic response of the body with subsequent rises in heart rate, cardiac work, difficulty of breathing and oxygen consumption. Prolonged pain can reduce physical activity and lead to venous stasis and an increased risk of deep vein thrombosis and consequent pulmonary embolism(5, 6).

Even though delivery of adequate pain control during the post operative period is the responsibility and duty of health care providers, according to study in Ethiopia, anesthetists were not involved in postoperative pain management in recovery and wards(7, 8). Survey study from Malaysia and Ghana; the reason for poor management of acute pain in developing countries is absence of institutional training and national policy for pain management(9).

According to the study carried out at Helsinki university hospital, proper management of post-operative pain has been challenging to establish due to poor communication, insufficient assessment and the individual differences on the experiences in pain(10, 11).

Postoperative pain is not merely unpleasant for the patients and his/her relatives, but increases postoperative morbidity and possibly mortality, and the number of unanticipated readmissions. In addition postoperative pain may cause chronic pain conditions which may be very difficult to treat. Therefore, in terms of patient safety and satisfaction, good postoperative pain control is important and is part of good clinical practice (4, 12, 13).

1.2. STATEMENT OF THE PROBLEM

Quality of pain assessment and pain management is a global problem. Various organizations, such as the World Health Organization, the International Association for the Study of Pain, and others have tried to implement various strategies, such as educational programs for healthcare providers, to improve quality of pain management(14).

Despite advanced research has consistently demonstrated in pain management, pain has not been satisfactorily relieved, which results in unnecessary suffering of patients, increased complications and increased costs, even in developed world(15, 16).

This is hindered by a lack of hospital financial resources, a lack of education and training programs, a lack of knowledge regarding diverse pharmacological options, technical skills and lingering negative attitudes toward certain treatments, especially opioids and poor health care system which propagate a culture of no or suboptimal treatment(5).

Untreated Pain causes an increase in the sympathetic response of the body with subsequent rises in heart rate, cardiac work, difficulty of breathing and oxygen consumption. Prolonged pain can reduce physical activity and lead to venous stasis and an increased risk of deep vein thrombosis and consequent pulmonary embolism(5). In addition, there can be widespread effects on gut and urinary tract motility which may lead, in turn, to postoperative ileus, nausea, vomiting and urinary retention. These problems are unpleasant for the patient and may prolong hospital stay(17).

The effective relief of pain is of paramount importance to anyone treating patients undergoing surgery this should be achieved for humanitarian reasons, but there is now evidence that pain relief has significant physiological benefit mentioned above(18).

In the recent study, the researcher assessed knowledge, attitude and perceived barriers regarding postoperative pain management among anesthetists" to identify the need for education and training for improvement of the quality of pain management service(19).

1.3. LITERATURE REVIEW

The definition of pain according to world health organization (WHO) is an unpleasant emotional and sensory experience that is associated with potential and actual tissue damage. A study of postoperative pain in Nigeria showed that two-thirds of patients complained of moderate to unbearable pain postoperatively(20). Barriers to effective pain management knowledge, attitudes, and perceived barriers regarding postoperative pain management among professionals have been searched during the process of review. Perceived barriers are categorized in to health professional-related barriers and health care system and institutional-related barriers(21).

Specifically, health professionals‟ inadequacy in pain assessment and management has been pointed out as an important barrier to postoperative pain control. Many patients and physicians hold exaggerated fears that addiction will result from opioid use during appropriate pain management(22). Research, however, has established that the risks of addiction associated with the proper use of medicinal opioids are greatly exaggerated and are very low in cases of acute, cancer, or terminal pain. Misconceptions among health professionals are perpetuated by a lack of appropriate training in pain management(10, 22).

Poor attitude among professionals can become so used to doing nothing for patients in pain becomes routine as a result patients begin to believe that nothing can be done, or adopt a fatalistic attitude and belief that pain is inevitable and untreatable(5).

In Ethiopia, a study conducted by the Ethiopian Public Health Association in 2005 showed that health care providers believe that pain was undertreated due to lack of training and education, absence of medications, poor knowledge and attitude among professionals lead to unreasonable fear of side-effects or addiction(22), which may propagate a culture of no treatment(7). In another study up to 20% of nurses and 13% of physician agreed that it was better for patients to suffer pain than to wake up with respiratory problems caused by narcotic analgesics(8, 11).

POP constitutes a healthcare challenge requiring knowledge in how to handle and administer drugs, assess and reassess POP, and a broad understanding of cultural and ethnic responses to pain and pain management(12). A study in Thailand decision making about pain is inconsistent, reflecting gaps in knowledge, training and consistent protocol tools. Assessment and treatment, therefore, is “vulnerable to social context effects” rather than sound scientific and clinical judgment. Anesthetists felt insecure about their knowledge and skills of opioid analgesia, nerve blocks which do not need sophisticated equipment and great deal of experience; because of

absence of training, low priority given by the healthcare system and even in anesthesia schools(7, 8).

Literatures suggest that anesthetist collaboration with other health care providers is important for POP management because effective control of surgical pain involves different expertise. However, another study on anesthetist commented that the different health professions did not always work well together(13).

When nurses, anesthetists, and physicians participate in educational programs, their attitudes toward the importance of POP assessment and treatment improve. An educational program conducted with a nationwide sample of hospitals in the United States showed a statistically significant improvement in practices, including documented use of pain rating scales, decreased use of intramuscular opioids, and increased use of non-pharmacological strategies(23).

Survey study in acute pain service team in UK suggest that only about half of the respondent hospitals had a protocol practice for managing POP was limited. An estimated 80% of persons worldwide do not receive adequate treatment for pain is an acute problem in more than 150 countries programs(24). Research done in Ethiopia; anesthetists not actively involved in routine pop management in the recovery and surgical wards (25), may be due to shortage of staff and work overload. Protocols for the assessment and reassessment of POP have been developed and implemented among healthcare providers that determine the best intervention for the patient's pain management(24).

According to the IASP the provision of anesthesia and analgesia is seen as a low priority in comparison with the treatment of diseases such as malaria, tuberculosis and HIV / AIDS(24, 26). Despite their recognized effectiveness, opioids often are not freely available because of restrictive laws based on fear of misuse and abuse. These excessive regulations are a major barrier to the adequate control of acute pain in developing countries. A survey of anesthetic officers in Uganda showed that only 45% always had either pethidine or morphine available; 21% never had these drugs available(2, 21).

Survey study from Malaysia and Ghana; the reason for poor management of acute pain in developing countries is not only drug shortage but also absence of national policy for pain management(27).

Conceptual framework

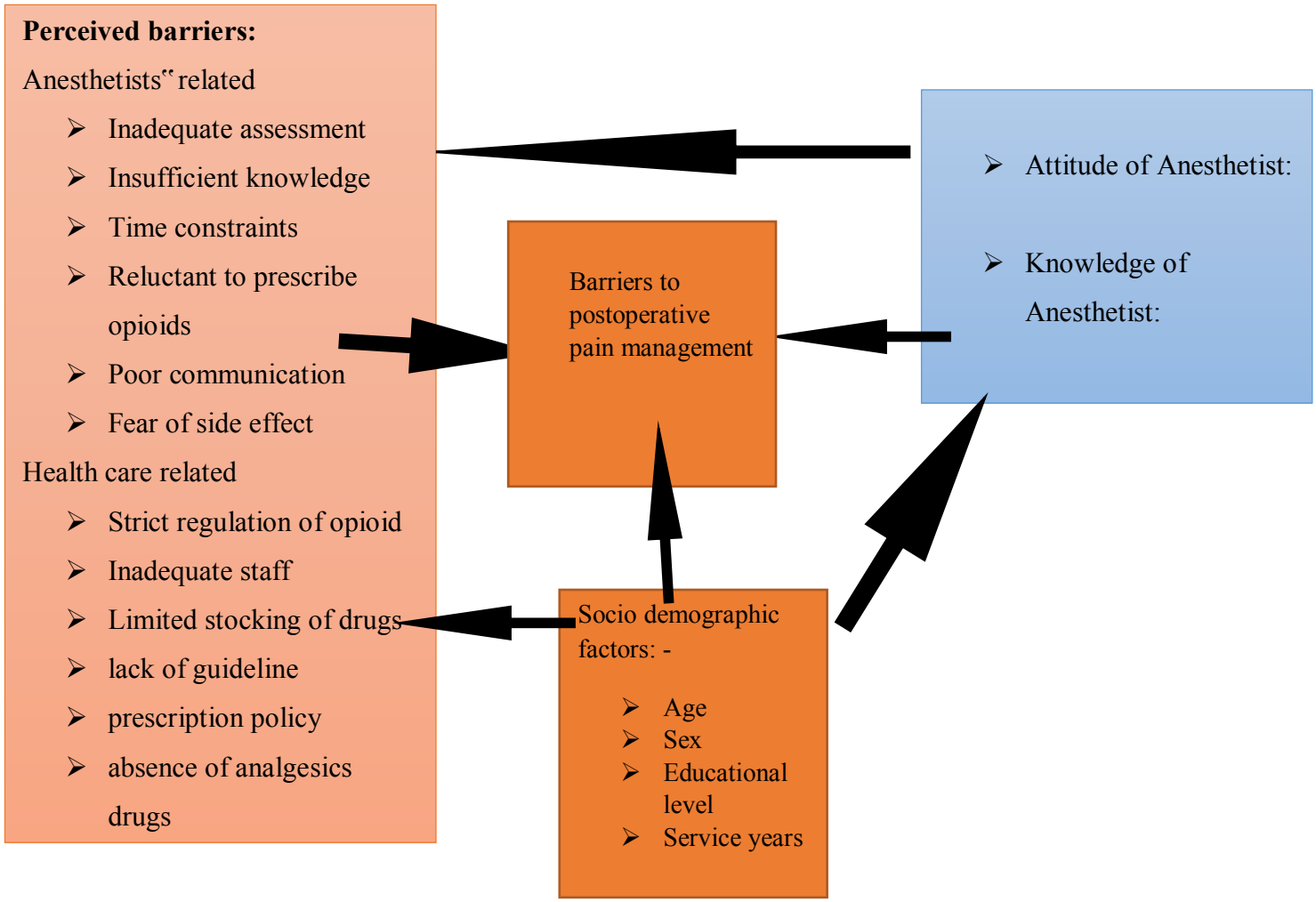

Figure 1: Conceptual framework on barriers to POPM among anesthetists‟ in AAGH.

1.4 JUSTIFICATION OF PROPOSED STUDY

As a way of finding solutions to the problem of inadequate postoperative pain management, it would be prudent to understand the causes of these barriers so as to come up with appropriate strategies.

The success or failure of pain management largely depends on factors that influence the health professionals' practical care for patients with post- operative pain. The findings of this study provided insights to barriers that affect the management of postoperative pain among anesthetists". It was only include anesthetists that have been left out in many previous studies. Despite anesthetists are key stakeholders in postoperative pain management, a lot of research are done on nurses and other health professionals working in pain management.

Even though anesthetists are supposed to participate in the postoperative area like recovery room, intensive care unit, and wards, they are limited only in the operating theatre.

Moreover, the proposed study would contribute to already existing literatures by giving appreciable insights on knowledge and attitudes of anesthetists" on postoperative pain management and their perceived barriers that blocked them in management of postoperative pain. Also, the involvement of the major stakeholders in postoperative pain management would stimulate the interest of each of the professionals groups thereby enlightening each other about the barriers and how they can be solved. Ultimately, this would improve patient care and satisfaction, enhance staff satisfaction, and boost the integrity of our health institutions.

Even though many researchers have done and advanced development and understanding of pain physiology and perception, surgical patients still suffer from significant amount of pain following surgery. Many of the literatures recommended need for more research to be conducted in order to realize and identify the barriers to optimal postoperative pain management.

Therefore, this research provided image about knowledge and attitudes of anesthetists" and how anesthetists perceive barriers and difficulties that hinder good optimal pain control, along with current initiatives to address these problems were also included.

2. OBJECTIVES

2.1 GENERAL OBJECTIVES

- To assess knowledge, attitudes and perceived barriers regarding postoperative pain management among anesthetists" in AAGH, Addis Ababa Ethiopia 2015.

2.2 SPECIFIC OBJECTIVES:

- To assess Knowledge of postoperative pain management
- To determine attitude of postoperative pain management
- To identify barriers regarding postoperative pain management

3. METHODS:

3.1. STUDY DESIGN AND PARTICIPANTS:

A descriptive cross sectional questionnaire survey was implemented to explore the level of knowledge, attitudes and perceived barriers of anesthetists‟ towards postoperative pain. The survey was took place from May to June 2015 at all Addis Ababa government Hospitals which are 11 Hospital in Addis Ababa, Ethiopia.

Anesthetists worked in AAGH were eligible for participation. The researcher received formal letter from anesthesia department and deliver the questionnaires to eligible participants at participating hospitals. All participants received written consent to participate in the study. This study was approved by Institutional Review Board (IRB) to be conducted at 11 participating hospitals (Tikur Ambessa Specialized Hospital, Saint Paul, Gandi hospital, army hospital, Alert hospital, Zewditu hospital, Rasdesta, Titunesh Beijing, Minilik, Yekatit Hospital, Police hospital).

3.2 STUDY AREA AND PERIOD;

The study conducted in Addis Ababa government hospitals, Addis Ababa Ethiopia. Ethiopia is a country located in the eastern part of Africa. It bordered by Eritrea to the North and northeast, Djibouti and Somalia to the east, Sudan and South Sudan to the west and Kenya to the south. Its population size is about 90 million. Ethiopia is the most populous landlocked country in the world, as well as the second- most populated nation on the continent. It occupies a total of 1,100,000 square kilometers. AA is the capital city and located in central part of Ethiopia. Addis has more than 26 hospitals of which 11 are Government hospitals. However, in this study, only the government hospitals included and questionnaire administered to 150 anesthetists. The study conducted from May to July 2015.

3.3 SOURCE POPULATION AND STUDY POPULATION

- All anesthetists‟ who were worked in 11 government hospitals, Addis Ababa Ethiopia 2015.

3.4. INCLUSION AND EXCLUSION CRITERIA

3.4.1 Inclusions: All anesthesia professionals working in 11 government hospitals who were willing to participate voluntarily in the study.

3.5 VARIABLES OF THE STUDY

3.5.1. Dependent Variable: - Knowledge, attitudes, and perceived barriers of anesthetists.

3.5.2. Independent Variable: Socio demographic factors: - Age, sex, service years, educational level.

3.5.3 Operational definition:

Knowledgeable: anesthetist who answer the knowledge question greater or equal to 80%.

Good attitude: anesthetist who answers the attitude questions greater or equal to 80%.

3.6 DATA COLLECTION INSTRUMENTS AND PROCEDURE

3.6.1 Data collection instruments

Data collected using self- administer questionnaire used in collecting the data to gain in-depth information to specific questions, which adopted from the British journals the knownPain-50 tool and WHO pain management guidelines published in 2008 and 2007 respectively. These aimed at evaluating the knowledge, attitude, and beliefs of anesthetists towards the treatment of pain to increase their expertise in this area and prepared in English. The study participants were oriented on the questionnaire and written consent provided before data collection. Three second year Msc anesthesia students were used to collect the data and two Msc anesthetists used as supervisors. They had given short time training about the questionnaire before data collected on the study objectives and data collection procedures. The data collected from May to June 2015. The data collected from May1 – May 30, 2015.

3.6.2 Data quality control

To ensure quality of data major steps were undertaken. To increase data quality and response rate the questionnaire prepared with great emphasis then information have given to the data collectors and supervisors. After that before the actual data collection pre-test done on the 5% of the total sample size. During the data collection, supervision were done at the spot by principal investigator and supervisors.

This quality checking had done daily after data collection and amendments were made before the next data collection measure. Data clean up and cross-checking done before analysis.

3.7 DATA PROCESSING AND ANALYSIS

Once the data had been collected and checked for completeness and accuracy. It sorted, and summarized. Then, enter the data into the computer using developed data entry format, coded for each category of variables and checked for errors. After coding, the data entered, using SPSS version 20, Analysis done by the investigator using the same computer package. The descriptive statistic and multiple linear regressions carried out to compute the different rate, proportion, and relevant association. During the analyses, p-value and /or 95% Confidence Interval (CI) used to judge the significance of the associations.

3.8. ETHICAL CONSIDERATIONS

After approval of proposal from Institutional, review Board of AAU official letters obtained and submitted at 11 government hospitals in Addis Ababa and to other concerned bodies. The purposes and the importance of the study explained and written informed consent provided to each participant. Confidentiality maintained at all levels of the study by not writing the participant's name. Participant's involvement in the study was on a voluntary basis; participants who are unwilling to participate in the study and those who wish to quit their participation at any stage informed to do so without any restriction.

3.9. DISSEMINATION PLAN

The results of the study disseminated through presentation, oral communication and written report submitted to the school of medicine department of anesthesia for partial fulfillment of Msc graduation theses and to others health institutions. In addition, dissemination could facilitated through public outreach like presentation in association, different conference and to those who are in need of these results and accordingly will advocate for those who can implement it, example to the Ministry of Health, Hospitals and health centre administration for the arrangement of some training for their particular staffs.

3.10. QUESTIONNAIRE DEVELOPMENT:

The questionnaire was developed by the researcher for the purpose of assessing anesthetists‟ knowledge, attitudes, and perceived barriers on postoperative pain management. It was generated

from the concept of WHO pain management guideline published in 2007 and knowpain50 published in 2008 because they have been piloted and would allow some comparison to this study.

The questionnaire has four items (1) Socio demographic (2) knowledge (3) attitude (4) perceived barriers:

1) Sociodemographic: age, gender, educational level, and work experience of the participants were included.
2) Knowledge: of postoperative pain management was evaluated through 12 questions (of 11 questions were true or false and 1 was multiple choice questions). The questionnaire encompasses pharmacological knowledge of participants on analgesic drugs specifically opioids, NSAIDs and paracetamol, pain assessment skills and interventional postoperative pain management such as simple nerve blocks.
3) Attitudes: to POPM were evaluated through 12 items. Each items were organized in two point scale from disagree- represents (1) to agree- represents (2)
4) Perceived barriers: questionnaire comprised two categories which are anesthetists‟ related barriers and health care & institution related barriers. It comprised also 13 questions answered as Yes or No. 1= represents Yes which was considered as positive response and 2= represents No which considered as negative response for statistical analysis.

In addition there were another questions prepared by the researcher based on the concern about drugs available in the participants institution. And the participants were given free space to write down their opinions about barriers affecting their POPM.

3.11. DATA ANALYSIS:

The purpose of data analysis is to make sense of the data received. Analysis of the data took place when all of the survey questionnaires were returned. The researcher used SPPS version 20 software to enter and analyzed data.

Descriptive statistics were used to summarize the characteristics of the participants and responses to items related to knowledge, attitude, and perceived barriers. A chi-square test was applied to compare the significant differences among anesthetists‟ according to their socio-demographic characteristics in terms of knowledge, attitudes, and perceived barriers to POPM.

Cross tabulations were performed to determine and assess the relationship between categorical variables to ascertain if any differences existed between them. Cross tabulations are used to analyze and explore the relationships between variables. The statistical significant level was set at $p< 0.05$ statistical analysis were performed using SPSS version 20 software package.

4. RESULTS:

The researcher utilized a descriptive cross sectional quantitative questionnaire survey study design to achieve the research objectives. The primary section of the results provides a summary of the demographic characteristics of anesthetists at eleven different hospitals. Descriptive statistics of the participants‟ demographic profile are presented. These characteristics included the respondents‟ gender, age, educational level, and years of work experiences.

4.1. RESPONSE RATE: A total of 150 questionnaire surveys were distributed to all anesthetists working in 11 Government Hospitals in Addis Ababa over a two month period from May to June 2015. Out of 150 distributed surveys 102 were returned with answer they were inspected for any missing data and the rest were returned with incomplete answer and/ or totally blank. Overall response rates, from 11 different Government Hospitals, were 68%.

4.2. DEMOGRAPHIC DATA OF RESPONDENTS: Demographic data of participants collected in this study comprised of age, gender, level of education and years of working experience. The respondents were also asked to specify whether they had received any training and education in postoperative pain management and to evaluate and rate their own perceived level of knowledge in the area of surgical pain management. Additionally, the participants were asked to respond whether they were doing nerve blocks for postoperative analgesia and/ or involving in pain management following surgery.

Table 1.DEMOGRAPHIC CHARACTERISTICS OF RESPONDENTS

Variables	Frequency (N)	Percentage (%)
Gender:		
Female	37	36.3
Male	65	63.7
Age:		
20-30	61	59.8

31-40	17	16.7
41-50	19	18.6
51-60	4	3.9
>60	1	1
Level of Education:		
Diploma	16	15.7
Degree	73	71.6
Masters Degree	13	11.7
Anesthetists' Experience:		
<1 year	11	10.8
1-5 years	44	43.1
5-10 years	23	22.5
>10years	24	23.5

A summary of the study participants" demographic characteristics is presented which are Gender, Age, Educational level, and Year of work experience in Table 1. Among the participants" 36.3% were females and 63.7% were male. The highest number of participants, which accounts 59.8%, was at the age of between twenty and thirty years. One extreme age, 69 years of age among the participants, was noticed. The second highest participant age group was between 41 – 50 years. The participants mean age was 32.2.

The educational level of the respondents of this study 15.7% were Diploma, 71.6% were Degree and 11.7% were Masters Level. Most predominant level of education was Degree level with 71.6% of respondents held this level of education as shown in Table 1. The highest level of education among respondents in this sample was a Masters Degree in which 11.7% of respondents indicated they had achieved this level of education.

Year of work experience of participants were also depicted in the survey. Newly qualified anesthetists served <1 year were 10.8%, anesthetists served between 1 – 5 years were 43.1%, anesthetists who had experience between 5 – 10 years were 22.5% and anesthetists who had >10 years of experience were 23.5%. Of all participants 76.5% had <10 years of work experience.

4.3. KNOWLEDGE SCORE OF PARTICIPANTS PAIN MANAGEMENT:

The rate of correct responses to each of the questions on knowledge for surgical pain management is shown in Table 2. Eleven true/false and one multiple choice items were analyzed. Interpreting each specific item separately enabled the researcher to identify and discover areas where knowledge deficits and misconceptions among participants with regard to pain existed. The questions which received the top correctly and incorrectly answered percentage scores were also analyzed and presented.

The overall knowledge deficit of anesthetist‟ was prominent. Seven questions were received average correct answer rate around 30% and the other five questions items had a correct answer rate around 65%.

Table 2. **RESPONDANTS' CORRECT RESPONSE RATE TO KNOWLEDGE**.

Ser. No.	**Questions on knowledge I**	**Correct** N (%)	Incorrect N (%)
1	Any surgical patient who is given opioids has a 25% or more risk of addiction? (**F**)	22(21.6)	80(78.4)
2	NSAIDs are contraindicated to dehydration or hypovolemia? (**T**)	52(51)	50(49)
3	Elderly patients cannot tolerate medication such as opioid for pain.(**F**)	45(44.1)	57(55.9)
4	There is a limit or "ceiling" effect to the dose of pure opioid agonist (e.g. morphine) to control pain? (**F**)	44(43.1)	58(56.9)
5	Patient cultural and ethnic variation has effect on pain severity?(**T**)	69(76.6)	33(32.4)
6	Changes in vital signs are reliable indicators of pain severity?(**F**)	17(16.7)	85(83.3)
7	Opioid induced respiratory suppression is common?(**F**)	27(26.5)	75(73.5)
8	Ilio-hypogastric and ilio-inguanal nerves are purely sensory?(**T**)	24(23.5)	78(76.5)

9	Paracetamol is as effective as NSAIDs at reducing opioid requirement?(**T**)	82(80.4)	20(19.6)
10	A consistence high score on pain rating scale for minimal to moderate surgery, which means patient is exaggerating the pain.(**T**)	50(49)	52(51)
11	Patient may sleep inspite of severe pain.(**T**)	53(52)	49(48)
12	By far the most common adverse side effect of opioid therapy.	37(36.3)	65(63.7)

In this survey, 80.4% of respondents correctly answered „true" to question number (9) which stated *Paracetamol is as effective as NSAIDs at reducing opioid requirement*. This item was the only highest correctly answered question of the overall knowledge questions in this study. On the other hand most incorrectly answered „true" was question number (6) which said that changes in vital signs are reliable indicators of pain severity with a percentage of 83.3%.

Misconceptions were also apparent on knowledge in relation to opioid analgesic agents was determined. In this study, a substantial number of respondents with average score of 68.4% incorrectly answered items number (1, 4, 7, and 12) which assessed respondents" knowledge with regard to addiction, respiratory suppression, ceiling effect and side effects of opioid analgesics.

Further knowledge deficits and low levels of attitudes were determined in relation to pain. In addition, half the sample of respondents incorrectly answered question number (11) where 49% of respondents in this sample incorrectly believed that patients" who can sleep do not have severe pain.

One question about interventional pain management, loss of resistance nerve block, was asked to the participants to assess the level of knowledge. However, it was only 23.5% of participants correctly answered.

The average knowledge score, the mean, and standard deviation of the participants are shown in histogram in figure 1. The average knowledge score of the total sample and the means of the demographic characteristics which are genders, educational level, and work experience, were

interpreted and compared with chi- square test to identify significant knowledge difference among anesthetists‟ which is displayed in table 3.

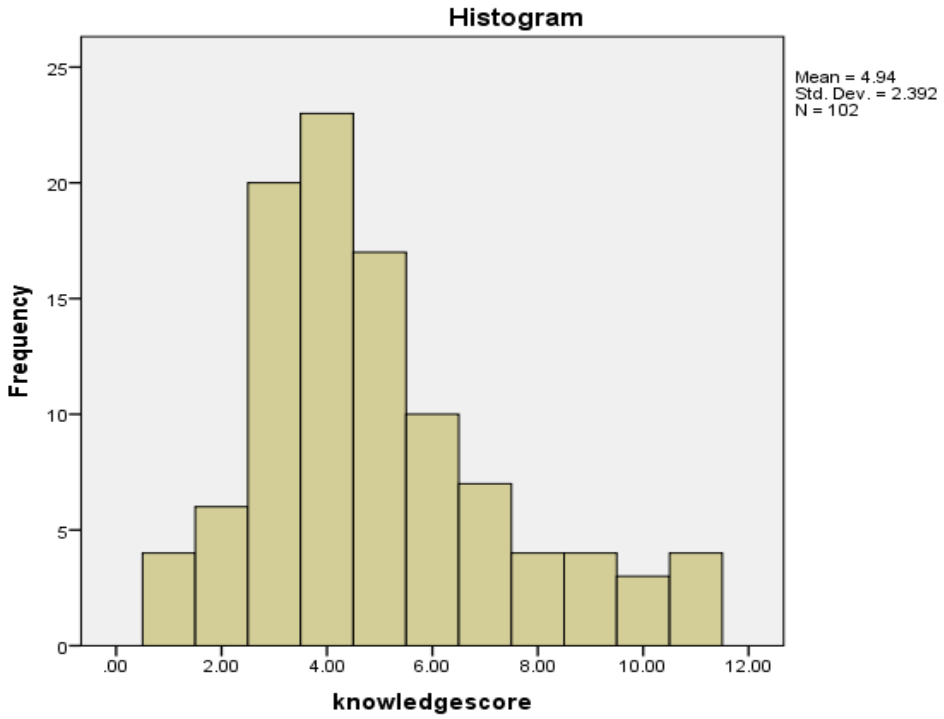

Figure 2 average knowledge score of participants.

The mean score of correctly answered questions by the participants were 4.9 with standard deviation ±2.3 out of 12 items ranging from a minimum of 1 to a maximum of 11. In this survey a significant knowledge deficit among anesthetists were noticed, even though anesthetists should have been answered the knowledge questions regarding pain greater than 80% in order to provide quality service to post surgical patients, only 6.9% of anesthetists achieved (28).

Table 3 THE AVERAGE KNOWLEDGE SCORES IN RELATION TO PARTICIPANTS DEMOGRAPHIC CHARACTERISTICS:

Characteristics	Mean knowledge	P
Overall	4.9412	
Gendre :		
Female	4.5946	0.272
Male	5.1385	
Educational level :		
Diploma	4.4375	0.005
Bsc	4.6986	
Msc	6.9231	
Service years :		
<1	5.0000	0.099
1-5	4.6818	
5-10	5.0870	
>10	5.2500	

The average knowledge score between female and male and among work experience were not statistically significantly different. However, this statement, „A consistence high score on pain rating scale for minimal to moderate surgery, which means patient is exaggerating the pain" was statistically significant difference between female with 56.9% and male 63.6% answered correctly.

Anesthetists holding Msc had statistically significantly higher average knowledge score than Bsc and diploma holders. The mean number of correct responses provided by Msc holders was higher than Bsc and diploma holders at 6.9, 4.7, and 4.4 respectively.

4.4. ATTITUDES SCORE OF PARTICIPANTS PAIN MANAGEMENT:

Anesthetists must be highly competent and possess positive attitudes towards surgical pain management so that patients receive high quality pain management practices to facilitate optimal

patient health outcomes following surgery. The participants‟ attitudes towards pain management are illustrated in table 4. The mean score of participants who have good attitudes are also displayed in figure 3.

Table 4 ATTITUDES OF PARTICIPANTS REGARDING PAIN MANAGEMENT.

Ser. No.	**Attitudes Questions II**	Agree N (%)	Disagree N (%)
1	Good communication to surgeon, nurses and patient has positive outcome to effective pain management.	66(64.7)	36(35.3)
2	Postoperative pain management is the responsibility of anesthetists.	80(78.4)	22(21.6)
3	I believe I have taken proper education and training about POPM in my graduating school?	59(57.8)	43(42.2)
4	Service training on POPM can change knowledge, attitude and belief of health professional.	96(94.1)	6(5.9)
5	Performing nerve blocks for surgical patients is effective in reducing complication and in early returning to activities.	97(95.1)	5(4.9)
6	There is a need for Continuous education and training program on postoperative pain for anesthetists.	95(93.1)	7(6.9)
7	Early return to activity is one of my primary goals when treating a patient with surgical pain.	96(94.1)	6(5.9)
8	The scope of practice, developed by anesthesia association, important for pain management in prescribing narcotics.	76(74.5)	26(25.5)
9	Continuous professional development (CPD) improves the quality of pain management	94(92.2)	8(7.8)
10	I have active involvement in Postoperative pain management in my hospital.	42(41.2)	60(58.8)
11	I think postoperative pain is adequately managed in my hospital.	9(8.8)	93(91.2)
12	I believe that analgesic tolerance and addiction to opioid usually occurs following postoperative treatment?	74(72.5)	28(27.5)

The first item asked to anesthetists‟ was „Good communication to surgeon, nurses and patient has positive outcome to effective pain management‟‟ but sadly 35.3% of respondents believe that working in collaboration with other professional do not bring effective postoperative pain control. In this item statistically significant difference has found regarding participants educational level and working experience. Diploma with 87.5%, Msc with 84.6% and Bsc 56.2% were agreed with the statement. Participants who have <1 year experience 36.4%, between 1-5 years of experience 63.6%, 5-10 years of experience 65.2% and >10 years of experience 79.2% were agreed with the statement.

Majority of participants, which accounts 78.4%, believe that post operative pain management is the responsibility of anesthetists‟‟, but 21.6% of anesthetists don‟t. Only 57.8% of participants believe that they have taken appropriate education and training about postoperative pain management in their graduated school. Among who agreed with this statement diploma account 25%, Bsc accounts 63% and Msc accounts 69.2%, the researcher found it statistically significant with $p = 0.012$.

Even though 94% of respondents agreed with the statement „Service training on POPM can change knowledge, attitudes, and belief of health professional‟‟, 74.5% of anesthetists hadn‟t ever got access to training and education in their career as anesthetist.

The scope of practice, developed by anesthesia association, is important for pain management in prescribing narcotics. This statement was, statistically significantly different among respondents‟‟ work experience, well recognized and correctly agreed by anesthetists who have served greater than 10 years with a percentage of 87.5 and those who served less than 1 year account 54.5%, 1-5 years 70.5% and 5-10 years 78.3%.

I have active involvement in Postoperative pain management in my hospital. This item was statistically significantly different between Genders with 54.1% of female and 33.8% of male agreed.

Performing nerve blocks for surgical patients is effective in reducing complication and in early returning to activities. Although 95% of the samples believed right and had positive attitude to this statement, the same amount of percentage of anesthetists had not done nerve blocks for pain due to knowledge, skill, and resource shortage.

Another misconception about opioid analgesic drugs was noticed in attitude part of this survey as seen in knowledge section. Around 72% of anesthetists wrongly agreed that analgesic tolerance and addiction to opioids usually occurs following postoperative treatment, even though opioids have < 1% risk of tolerance and addiction. The response to this question was statistically significantly different among participant demographics of educational level (diploma, Bsc and Msc) with $p < 0.05$. Anesthetists with Msc holders 53.8% were correctly agreed than Bsc and diploma with 24.6% & 18.8% respectively.

4.5. PERCEIVED BARRIERS OF PAIN MANAGEMENT:

The perceived barriers to postoperative pain management provided by anesthetists are illustrated in table 5. The association between the assumed/ believed barriers of the respondents and their level of knowledge score are also discussed.

Table5 PERCEIVED BARRIERS OF PAIN MANAGEMENT;

Ser. No.	**Questions III**	Agree N (%)	Disagree N (%)
	Anesthetist- related		
1	Inadequate postoperative pain assessment	90(88.2)	11(10.8)
2	Insufficient knowledge of Postoperative pain control	61(59.8)	41(40.2)
3	Time constraints	62(60.8)	40(39.2)
4	Reluctant to prescribe opioids	70(68.6)	32(31.4)
5	Insufficient communication with patient and other health professionals	58(56.9)	44(43.1)
6	Fear of side effect caused by opioids	62(60.8)	40(39.2)
	Health care and institution - related		

7	Strict regulation of opioids	68(66.7)	34(33.3)
8	Inadequate staff	67(65.7)	35(34.3)
9	Limited stocking of different type of opioid	71(69.6)	31(30.4)
10	Postoperative pain control is not given priority	86(84.3)	16(15.7)
11	Need for opioid prescription	65(63.7)	37(36.3)
12	Absence of pain management guideline	89(87.3)	13(12.7)
13	Inadequate analgesic drugs	44(43.1)	58(56.9)

Inadequate postoperative pain assessment, Postoperative pain control is not given priority and Absence of pain management guideline were most frequently cited barriers by anesthetists with response rate of 88.2%, 84.3% and 87.3% respectively. Anesthetists with diploma holders perceived barrier such as „Insufficient knowledge of Postoperative pain control" ($p = 0.040$) agreed to a higher extent than Bsc and Msc holders at 81.2%, 57.5% and 46.2% respectively. However, Bsc participants who thought they have knowledge hadn"t really done well the knowledge questions. Most of anesthetists who score lower on the knowledge section cited lack of knowledge as most frequent barrier on the perceived barriers section of this survey.

4.6 COMMENTS OF PARTICIPANTS ON BARRIERS TO PAIN MANAGEMENT

The institution has no clear guideline for which anesthetists to be responsible and the hospital setting doesn"t allow anesthetists to practice postoperative pain management because some of the departments are udder the responsibility of surgeon and nurses like operation room, ICU (intensive care unit), and recovery room.

Anesthetists" prescription orders are not appropriately followed and implemented by the duty nurses. Because there is clear guide line anesthetists do not know his/her responsibility and accountability outside OR.

Surgeons are always rushing to do operation and so they have no time to do and practice nerve blocks. Poor pre-op planning for pain management, lack of defined training on pain management and lack of resources important for pain management were given as opinion form the twenty participants.

5. DISCUSSION

This research study is the first to provide data on the level of knowledge and attitudes of anesthetists‟ about POP working in AAGH. The tool used in this present study has also been utilized in international studies with nurses, physicians and anesthetists from a variety of clinical backgrounds, thus direct comparisons can be made in three categories which are 1) knowledge of anesthetists, 2) attitudes of anesthetists and 3) perceived barriers. The implications of the research findings and recommendations for future research and educational initiatives will be made.

5.1. RESPONSE RATE TO THE STUDY:

Achieving an appropriate response rate is an important aspect to any research study which will enable the results to be an indicative interpretation of the target population. Low response rates to surveys are not uncommon but may introduce bias and error in the results. It is difficult to assert and identify an acceptable response rate; however, researchers may make comparisons between the response rates in their study with comparable studies to determine whether the response rate achieved is within the normal limits for that particular investigation. The response rate obtained and/or number of respondents in this current study is better than other research studies that have been used the same research design and methodology. Therefore, it can be assured that the response rate achieved for this particular study is satisfactory in providing findings which can be generalized.

5.2. RESULT DISCUSSION OF THE SURVEY:

It is believed that any professionals equipped with knowledge and positive attitudes can provide quality service to people who are in need of his/ her profession. However, the overall average knowledge score of anesthetists‟ in this study was significantly low compare to other studies (22, 24, and 28).

The researcher found a statistically significant difference among anesthetists regarding on their educational status. Masters level participants had better knowledge than Bsc and diploma level. The result is consistent with similar studies (22,(29). The differences found among anesthetists‟ in knowledge reflect areas required education and training for improvement in surgical pain management within this profession.

Out of the knowledge questions 80.4% of anesthetists displayed good knowledge about usage of paracetamol in reducing opioid drugs side effect and it was the only highest correctly answered question of the overall knowledge questions in this study. On the other hand most incorrectly answered question by anesthetists was changes in vital signs are reliable indicators of pain severity with a percentage of 83.3%. This result is comparable to other similar literatures despite its exaggerated percentage (13, 22, and 28). In addition, half the sample of respondents showed prominent knowledge deficit, where 49% of respondents in this sample wrongly believed that patients‟ cannot sleep inspite of severe pain. This indicates anesthetists‟ pain assessment skills were inadequate and the need for continuous educational program is paramount for improvisation of surgical pain management service (12).

In this study, 68.4% of respondents displayed knowledge deficit with regard to addiction, respiratory suppression, ceiling effect and side effects of opioid analgesics. The pharmacological knowledge and attitude of anesthetists towards opioid analgesics was substantially poor (22, 24). Being knowledgeable about the pharmacology of opioid analgesic and competent is a prerequisite for healthcare professionals in the management of pain (28). Majority of anesthetists around 74% showed knowledge deficit in opioid induced respiratory depression. This result finding comparable with another study found that up to 20% of anesthetists agreed that it was better for a patient to suffer pain than to wake up with breathing problems caused by opioid analgesia. Exaggerated fear of respiratory depression and addiction from opioid analgesics is another area where education is needed.

An interventional pain management such as simple nerve blocks which do not require higher level of knowledge and skills were not practiced and known by anesthetists. This is a result of academic schools produce professionals the same traditional ideology due poor education system (12). The idea is proved right in present survey that 42.2% of participants did not believe that they have taken appropriate education and training about postoperative pain management in their graduated school. Diploma and Bsc holders believed they haven‟t taken appropriate course about pain in their pre- service training.

It is well recognized that individuals are significantly influenced by various cultural factors which include: socioeconomic, geographic, religious, and ethnic factors. In this present study, the majority of respondents (76.6%) demonstrated awareness that each patient must be

individually assessed in order to establish any cultural concepts or diverse ways that may influence patients‟ perception and responses to their pain experience (has similar result with this literatures 22, 28, 29).

The overall attitudes of anesthetists in this survey at the basis of questions asked were also not satisfactory. However, there was found significant difference among anesthetists in their educational status and work experience during individual item analysis.

Alarmingly, 35.3% of respondents believe that working in collaboration with other professional do not bring effective postoperative pain control. It is found that those who have diploma and longer working experience had a positive attitude towards collaboration and communication to other professionals than who have Bsc, Msc, and shorter working experience in effective pain control (7, 10). Newly employed anesthetists, who have less than one year experience and some Msc holders disagreed with the statement; scope of practice, developed by anesthesia association, is important for pain management in prescribing narcotics.

Another misconception about opioid analgesic drugs was noticed in attitude part of this survey as seen in knowledge section. Around 72% of anesthetists wrongly agreed that analgesic tolerance and addiction to opioids usually occurs following postoperative treatment, even though opioids have < 1% risk of tolerance and addiction (23). Although the result is relatively high compared to other studies, misconception, knowledge deficit, and negative attitudes to narcotic analgesic by health professionals were cited in many literatures (5, 7, 11, 22, 24, 27, and 28). These misperceptions may halt anesthetists‟ pain management decisions with regard to the administration of opioids and subsequent ineffective utilization of these analgesics.

Inadequate postoperative pain assessment, postoperative pain control is not given priority and absence of pain management guideline were most frequently cited barriers by anesthetists. Most of anesthetists who score lower on the knowledge section cited lack of knowledge as most frequent barrier on the perceived barriers section of this survey. Previous studies have shown that improving pain assessment procedures requires the caregiver to acknowledge and have faith in the patient's report (8, 10).

5.3 CONCLUSION

Ultimately, these knowledge deficits and poor attitudinal beliefs may impact on the provision of effective and optimal care given to patients who are experiencing pain in the postoperative setting. The findings from this study reflect those of previously published international studies which reinforce the universal concern of the significant problem of poor knowledge and attitudes held by health care providers caring for patients experiencing pain. This is uneasy for the reason that adequate pain management is reliant on the knowledge, attitudes, and skills of health-care professionals. The lack of pain-related knowledge and attitudes found in the present study existed in number of key areas in the context of pain management. The major areas which showed the most substantial knowledge deficits and weaknesses centered on: pharmacology based knowledge, exaggerated fear of opioid side effect, misperceptions of opioid addiction. Perceived barriers of POPM such as shortage of staff and work overload can be relieved by inspiring and motivating staffs to join and sustain improvement process to provide quality service to patients.

Anesthetists, need concrete information on various issues of pain alleviation, including the side effects of drug treatment and the risk of addiction and respiratory depression from the use of analgesics. . Likewise, healthcare staff needs to receive ongoing, up-to-date training concerning existing and novel methods of pain management, particularly for POP. In general, the educational programs contributed to broadening the level of knowledge and skills of healthcare providers in relieving pain.

5.4 LIMITATIONS OF THE RESEARCH

All studies have some inherent limitations; this study does have limitations like all survey do. While providing baseline information regarding the knowledge and attitudes of anesthetists working in AAGH, this study has limitations that didn‟t include privet hospitals and also confided in Addis Ababa. This is due to time and budget constraints. Despite guaranteed anonymity, response to questions about attitudes and perceived barriers may reflect what the respondent perceived desire answer rather than their true opinion. The main limitation with cross-sectional studies is that the same populations are not studied over time. This limitation implicates the research findings as changes that may occur over time as a result of environmental

or other events cannot be enclosed. Another drawback of cross-sectional studies is the inability to make causal inferences and associations.

5.5 RECOMMENDATION

The findings of this study support and extend the recommendations of other researchers regarding the need for appropriate educational interventions to enhance anesthetists‟ knowledge and attitudes regarding pain. The researcher suggests that intensive and comprehensive educational initiatives should be adjusted to meet the specific needs of anesthetists both at under-graduate and post-graduate level. A thorough review of anesthesia curricula both at under-graduate and post-graduate level should be undertaken to ensure the content of these modules provide adequate, relevant and appropriate information and subsequently equips anesthetists to effectively manage pain. Identification of the key areas of knowledge deficit can be used as a framework and structure for the development of appropriate educational program aimed at improving anesthetists‟ knowledge and attitudes regarding pain.

The researcher suggests that these educational initiatives should be mandatory for all anesthetists and they should be delivered on continuing basis. Furthermore, the outcomes of these educational initiatives should be investigated to ensure they are effective. The researcher highlights that further endeavors such as quality-improvement program should be rolled out within health care organizations which could include many strategies aimed at enhancing the knowledge and improving the practices of pain management.

Facilitation of best practice by updating policies, procedures and guidelines relating to pain management to ensure they are in line with current international best practice standards make pain visible by ensuring pain is considered and assessed as „the fifth vital sign‟ at all times.

It is suggested that repeating this study at a national level with a larger sample size would be necessary to enhance the generalization of the findings. Additionally, initiatives aimed at larger scale studies integrated with pain management education program for students at undergraduate and postgraduate level would assist with implementing national and international strategies and policies to meet patients‟ rights to best practice in pain management.

REFERENCES:

1. Suwanraj M. Current practice, perceived barriers, and perceived facilitators of Thai nurses on using evidence-based pactice on pain assessment and pain management in older adults. 2010.
2. Taylor AL, Gostin LO, Pagonis KA. Ensuring effective pain treatment: a national and global perspective. JAMA. 2008;299(1):89-91.
3. Rejeh N, Ahmadi F, Mohammadi E, Anoosheh M, Kazemnejad A. Barriers to, and facilitators of post-operative pain management in Iranian nursing: a qualitative research study. International nursing review. 2008;55(4):468-75.
4. Windsor A, Glynn C, Mason D. National provision of acute pain services. Anaesthesia. 1996;51(3):228-31.
5. Management ASoATFoAP. Practice guidelines for acute pain management in the perioperative setting: an updated report by the American Society of Anesthesiologists Task Force on Acute Pain Management. Anesthesiology. 2004;100:1573-81.
6. Gallagher R, Hawley P, Yeomans W. A survey of cancer pain management knowledge and attitudes of British Columbian physicians. Pain research & management: the journal of the Canadian Pain Society= journal de la societe canadienne pour le traitement de la douleur. 2003;9(4):188-94.
7. Woldehaimanot TE, Eshetie TC, Kerie MW. Postoperative Pain Management among Surgically Treated Patients in an Ethiopian Hospital. PloS one. 2014;9(7):e102835.
8. Jho HJ, Kim Y, Kong KA, Kim DH, Choi JY, Nam EJ, et al. Knowledge, practices, and perceived barriers regarding cancer pain management among physicians and nurses in Korea: a nationwide multicenter survey. 2014.
9. Jawaid M, Muhammad S, Shafiq F, Malik KA. ACUTE POSTOPERATIVE PAIN MANAGEMENT BY A SURGICAL TEAM IN A TERTIARY CARE HOSPITAL: PATIENTS SATISFACTION. Middle East Journal of Anesthesiology. 2009;203:405-10.
10. Kumar N. WHO Normative Guidelines on Pain Management. URL http://www who int/medicines/areas/quality_safety/delphi_ study_pain_guidelines pdf (accessed 25/11/11). 2007.
11. Madenski AD. Improving Nurses' Pain Management in the Post Anesthesia Care Unit (PACU). 2014.
12. McDonnell JG, O'Donnell B, Curley G, Heffernan A, Power C, Laffey JG. The analgesic efficacy of transversus abdominis plane block after abdominal surgery: a prospective randomized controlled trial. Anesthesia & Analgesia. 2007;104(1):193-7.
13. Aziato L, Adejumo O. Perspectives of the surgeons, anaesthetists, and pharmacists on post-operative pain management roles in the Ghanaian context. African Journal for Physical Health Education, Recreation and Dance. 2013;19(3):678-91.
14. Lohman D, Schleifer R, Amon JJ. Access to pain treatment as a human right. BMC medicine. 2010;8(1):8.
15. Brennan F, Carr DB, Cousins M. Pain management: a fundamental human right. Anesthesia & Analgesia. 2007;105(1):205-21.
16. Size M, Soyannwo O, Justins D. Pain management in developing countries. Anaesthesia. 2007;62(s1):38-43.
17. Hughes RG, Wells N, Pasero C, McCaffery M. Improving the quality of care through pain assessment and management. 2008.
18. Aziato L, Adejumo O. Determinants of nurses' knowledge gap on pain management in Ghana. Nurse education in practice. 2014;14(2):195-9.
19. Wu CL, Raja SN. Treatment of acute postoperative pain. The Lancet. 2011;377(9784):2215-25.

20. Chaibou MS, Sanoussi S, Sani R, Toudou NA, Daddy H, Madougou M, et al. Management of postoperative pain: experience of the Niamey National Hospital, Niger. Journal of pain research. 2012;5:591.
21. Ndumia L, Ochieng P. THE ROLE OF NURSE ANESTHETIST IN THE PLANNING OF POSTOPERATIVE PAIN MANAGEMENT. 2012.
22. Vickers N. Knowledge and attitudes regarding pain among surgical nurses in three teaching hospitals in Ireland: Dublin City University; 2011.
23. Ariyanuchitkul T, Petchdee N. Attitude, Knowledge and Practice of Nurse Anesthetist, Maharat Nakhon Ratchasima Hospital for Postoperative Pain Assessement and Treatment in Recovery Room. เวชสาร โรง พยาบาล มหาราช นครราชสีมา-Maharat Nakhon Ratchasima Hospital Medical Bulletin. 2011;32(1):S54-S61.
24. Powell A, Davies H, Bannister J, Macrae W. Challenge of improving postoperative pain management: case studies of three acute pain services in the UK National Health Service. British journal of anaesthesia. 2009;102(6):824-31.
25. Cooper G, McClure J. Maternal deaths from anaesthesia. An extract from Why Mothers Die 2000–2002, the Confidential Enquiries into Maternal Deaths in the United Kingdom Chapter 9: Anaesthesia. British journal of anaesthesia. 2005;94(4):417-23.
26. Henry MC, Stapleton ER. EMT prehospital care: Jones & Bartlett Publishers; 2011.
27. Layman Young J, Horton FM, Davidhizar R. Nursing attitudes and beliefs in pain assessment and management. Journal of Advanced Nursing. 2006;53(4):412-21.
28. McCAFFERY M, ROBINSON ES. Your patient is in pain—here's how you respond. Nursing2014. 2002;32(10):36-45.
29. Grinstein-Cohen O, Sarid O, Attar D, Pilpel D, Elhayany A. Improvements and difficulties in postoperative pain management. Orthopaedic Nursing. 2009;28(5):232-9.

ANNEX

Annex I:- Dummy tables

Table 1 Sociodemographic of respondents

Characteristics	Mean knowledge	P
Overall	4.9412	
Gendre :		
Female	4.5946	0.272
Male	5.1385	
Educational level :		
Diploma	4.4375	0.005
Bsc	4.6986	
Msc	6.9231	
Service years :		
<1	5.0000	0.099
1-5	4.6818	
5-10	5.0870	
>10	5.2500	

Table 2 questions on knowledge

Ser. No.	**Questions on knowledge I**	**Correct** N (%)	Incorrect N (%)
1	Any surgical patient who is given opioids has a 25% or more risk of addiction? (**F**)	22(21.6)	80(78.4)
2	NSAIDs are contraindicated to dehydration or hypovolemia? (**T**)	52(51)	50(49)
3	Elderly patients cannot tolerate medication such as opioid for pain.(**F**)	45(44.1)	57(55.9)
4	There is a limit or "ceiling" effect to the dose of pure opioid agonist (e.g. morphine) to control pain? (**F**)	44(43.1)	58(56.9)

5	Patient cultural and ethnic variation has effect on pain severity?(**T**)	69(76.6)	33(32.4)
6	Changes in vital signs are reliable indicators of pain severity?(**F**)	17(16.7)	85(83.3)
7	Opioid induced respiratory suppression is common?(**F**)	27(26.5)	75(73.5)
8	Ilio-hypogastric and ilio-inguanal nerves are purely sensory?(**T**)	24(23.5)	78(76.5)
9	Paracetamol is as effective as NSAIDs at reducing opioid requirement?(**T**)	82(80.4)	20(19.6)
10	A consistence high score on pain rating scale for minimal to moderate surgery, which means patient is exaggerating the pain.(**T**)	50(49)	52(51)
11	Patient may sleep inspite of severe pain.(**T**)	53(52)	49(48)
12	By far the most common adverse side effect of opioid therapy.	37(36.3)	65(63.7)

Table 3 Questions on attitude:

Ser. No.	**Attitudes Questions II**	Agree N (%)	Disagree N (%)
1	Good communication to surgeon, nurses and patient has positive outcome to effective pain management.	66(64.7)	36(35.3)
2	Postoperative pain management is the responsibility of anesthetists.	80(78.4)	22(21.6)
3	I believe I have taken proper education and training about POPM in my graduating school?	59(57.8)	43(42.2)
4	Service training on POPM can change knowledge, attitude and belief of health professional.	96(94.1)	6(5.9)
5	Performing nerve blocks for surgical patients is effective in reducing complication and in early returning to activities.	97(95.1)	5(4.9)
6	There is a need for Continuous education and training program on postoperative pain for anesthetists.	95(93.1)	7(6.9)

7	Early return to activity is one of my primary goals when treating a patient with surgical pain.	96(94.1)	6(5.9)
8	The scope of practice, developed by anesthesia association, important for pain management in prescribing narcotics.	76(74.5)	26(25.5)
9	Continuous professional development (CPD) improves the quality of pain management	94(92.2)	8(7.8)
10	I have active involvement in Postoperative pain management in my hospital.	42(41.2)	60(58.8)
11	I think postoperative pain is adequately managed in my hospital.	9(8.8)	93(91.2)
12	I believe that analgesic tolerance and addiction to opioid usually occurs following postoperative treatment?	74(72.5)	28(27.5)

ANNEXES II: CONSENT FORM

I am Yosef Tibebu a master‟s student at Addis Ababa University and conducting a research for the partial fulfillment of graduation. This study aimed to assess knowledge, attitude, and perceived barriers regarding postoperative pain management among anesthetists‟ in Addis Ababa Government Hospitals, Ethiopia 2015.

You are being asked to participate in a research study which will be conducted by postgraduate student Yosef Tibebu, advised by Eyayalem Melesse (Msc in anesthesia) Wright from the School of medicine department of anesthesia. This study will be undertaken in 11 hospitals in Addis Ababa. As the researcher, I would be most grateful for your participation in this study. Participation in this study will consist of the completion of the anesthetists‟ Knowledge, Attitudes and perceived barriers Survey regarding postoperative pain attached. This survey will take no more than 25 minutes to complete.

It must be emphasized that participation in this study is on a voluntary basis. In addition, confidentiality and anonymity of all participants and data collected will be maintained as far as possible.

Thank you very much!

For any further question, contact the investigator.

Yosef Tibebu

Annex III QUESTIONNAIRE

Questionnaire designed for anesthetists". Thank you for your willingness to participate in this study. **Socio demographic:**

1	Age	
2	Gender	1) Female 2) male
3	Education status	1) diploma 2) BSC 3) MSC
4	Service year	

Ser. No.	**Knowledge**	Response	
		Yes	No
1	Any surgical patient who is given opioids has a 25% or more risk of addiction?		
4	If you're opioid prescribing was investigated tomorrow, are you confident that you would pass?		
5	Elderly patients cannot tolerate medication such as opioid for pain.		
6	There is a limit or "ceiling" effect to the dose of pure opioid agonist (e.g. morphine) to control pain?		
7	Patient cultural and ethnic variation has effect on pain severity?		
8	Changes in vital signs are reliable indicators of pain severity?		
9	Opioid induced respiratory suppression is common?		
10	How often do you perform nerve blocks for postoperative pain 1) never 2) sometimes 3) often 4) always?		
11	Do you practice the WHO guideline for postoperative pain management?		
12	A consistence high score on pain rating scale for minimal to moderate Pain, which means patient is exaggerating the pain.		

1. By far the most common adverse side effect of opioid therapy. 1) constipation 2) nausea and vomiting 3) sedation and cognitive dysfunction 4) respiratory depression
2. True about NSAID 1) protect the stomach 2) support platelets and blood clotting 3) protect kidneys 4) produce stomach ulcer.

Ser. No.	**Attitudes and beliefs**	Agree	disagree
1	Good communication to surgeon, nurses and patient has positive outcome to effective pain management.		
2	Postoperative pain management is the responsibility of anesthetists.		
3	I believe I have taken proper education and training about POPM in my graduating school?		
4	Service training on POPM can change knowledge, attitude and belief of health professional.		
5	Performing nerve blocks for surgical patients is effective in reducing complication and in early returning to activities.		
6	There is a need for Continuous education and training program on postoperative pain for anesthetists.		
7	Early return to activity is one of my primary goals when treating a patient with surgical pain.		
8	The scope of practice, developed by anesthesia association, important for pain management in prescribing narcotics.		
9	Continuous professional development (CPD) improves the quality of pain management		
10	I have active involvement in Postoperative pain management in my hospital.		
11	I think postoperative pain is adequately managed in my hospital..		
12	I believe that analgesic tolerance and addiction to opioid usually occurs following postoperative treatment?		

- ✓ Circle available analgesic drugs in your institution? 1) morphine 2) fentanyl 3) pethidine 4) tramadol 5) diclofenac 6) ibuprofen 7) paracetamol

- ✓ Feel free to write your opinions & comments regarding on barriers affecting your postoperative pain management!!!!! Possible to write with Amharic!!!

Ser No	**Perceived barriers of anesthetists**	How often does a particular barrier affect POP control?		
Anesthetist- related		No	sometimes	always
1	Inadequate postoperative pain assessment			
2	Insufficient knowledge of Postoperative pain control			
3	Time constraints			
4	Reluctant to prescribe opioids			
5	Insufficient communication with patient and other health professionals			
6	Fear of side effect caused by opioids			
Health care and institution - related				
1	Strict regulation of opioids			
2	Inadequate staff			
3	Limited stocking of different type of opioid			
4	Postoperative pain control is not given priority			
5	Need for opioid prescription			
6	Absence of pain management guideline			
7	Inadequate analgesic drugs			