ADDIS ABABA UNIVERSITY

COLLEGE OF HEALTH SCIENCES

DEPARTMENT OF EMERGENCY MEDICINE

ASSESSMENT OF KNOWLEDGE, ATTITUDE, PRACTICE AND ASSOCIATED FACTORS OF NURSES TOWARDS POSTOPERATIVE PAIN MANAGEMENT IN FOUR FEDERAL HOSPITALS, ADDIS ABABA, ETHIOPIA, 2020.

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LIST OF ACRONYMS &ABREVIATIONS

ASA = American Society of Anesthesiologist

CI = Confidence Interval

ETB = Ethiopian Birr

IASP = International Association for the Study of Pain

JUMC = Jima University Medical College

PACU = Post Anesthesia Care Unit

POP = Post-Operative Pain

POPM = Post-operative Pain Management

PAT=Pain Assessment Tools

OR = Odds Ratio

SPSS = Statically Package for Social Science

TASH = Tikur Anbesa Specialized Hospital

ZMH= Zewuditu Memorial Hospital

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ABSRACT

Background: Effective pain management requires precise knowledge, attitude and competent assessment skills. Nurses should have basic knowledge and develop a positive attitude towards post-operative pain management. Little is known about the knowledge and there is no evidence to understand the attitude gaps and nurses' practices of postoperative pain management by nurses working in federal hospitals.

Objective: to examine the level of knowledge, attitude, practice and associated factors of nurses towards POPM in four federal hospitals in Addis Ababa Ethiopia 2020.

Method: Institution-based cross-sectional study was conducted among 103 nurses at federal hospitals. The total sample sizes were allocated proportionally based on the number of nurses from each hospital. A simple random sampling technique was employed for the selection of study participants. Data were collected by using self-administered structured questionnaire and were checked, cleaned and entered into Epi data version 3.5 and imported to SPSS version 25.0 software for analysis. Associations between independent and dependent variables were analyzed by using descriptive statistic & a binary logistic regression model.

Result: The overall finding of the study revealed that nurses had poor knowledge (51.5%), favorable attitude (58.5%), and poor practice (48.5%)towards post-operative pain management. Gender, training and favorable attitude (p-value=0.024, 0.003, 0.002 respectively) were found to be statistically significant with nurses knowledge of post-operative pain management. Knowledge of nurses had significant association with attitudes of nurses. Attitude, organizational protocol to pain management and knowledge of nurses had significant association with nurses' practice of POPM.

Conclusion: The result of this study showed that nurses in federal hospitals have poor knowledge, poor practice and favorable attitude towards post-operative pain management

Keywords: Pain management, nurses', knowledge, Attitude and practice, postoperative pain

INTRODUCTION

1.1 Background of the Study

The international association for the study of Pain (IASP, 1994) defines pain as" an unpleasant sensory & emotional experience associated with actual or potential tissue damage" (1,2). And The American Society of Anesthesiologists (ASA) defines post-operative pain as pain that is felt by surgical patient due to a preexisting surgical procedure, or a combination of disease-related and procedure-related resources (3).

Pain is one of the most common symptoms encountered by patients and nearly 79 % of hospitalized patients suffer from it. Neglecting the suffering of the patient is an ethically and morally unacceptable behavior that leads to many costs and problems for both the patients and the healthcare organizations. Pain management strategies are defined as a series of activities that nurses should provide to efficiently manage the pain of the patient. These activities include evaluating the patients' pain, providing proper nursing interventions to relieve the patients' pain and reassessing the patients' pain after intervention(4).

Numerous studies have shown that the prevalence of pain remains high in post-operative patients. Nearly 20–80% of postoperative patients experience moderate to severe pain, and the prevalence has remained consistently high over the past two decades (5,6). After surgery, many patients experience moderate or severe pain (7,8). Inadequate management of postoperative pain has serious consequences including deep vein thrombosis, pneumonia, and condition of chronic pain (9).

Insufficient education and training for nurses were among the issues reported as poor postoperative pain management (10). Clinical experience is the most influential factor that promotes nurses' knowledge and confidence in managing patient's pain (11).Nurses are the ones who are in nearby & spent more time with patients than any other professionals so that they play a pivotal role in assessment & management of postoperative pain(2,12).

Effective and precise management of pain needs efficient knowledge, positive attitudes, and effective skills of clinical decision-making about pain (13).Better postoperative pain management (POPM) can reduce the patients' length of hospitalization, promote recovery and decrease postoperative complications (3,14).

1.2 Statement of the Problem

Postoperative pain is categorized as a severe but under-treated health problem in both developing and developed nations. In the United States of America (USA), found out that among the study participants, 82% of the patients reported that they experienced pain after their surgery. From those 47% had moderate pain and 39% of them experience severe pain during their recovery period. A study carried out in a Danish postoperative patients showed 45.5% of patients had an uncontrolled pain (15).

Although the aim of the International Association for the Study of Pain (2018) seeks to turn the study of pain management into better pain relief worldwide, most surgical patients still experience POP, of which less than half report adequate POP relief (16).

In Ethiopia, a 2005 study conducted by the Ethiopian Public Health Association showed that health care providers trust that pain has been under-treated because of unstandardized practice, shortage of medicines, and poor professional knowledge and attitude (5).

Patients with pain may experience an increase in the body's sympathetic response with subsequent rises in cardiac rate & work, breathing difficulties, and insufficient oxygen consumption. Prolonged postoperative pain restricts physical exercise and leads to venous stasis, which increases the risk of deep vein thrombosis, and subsequently, pulmonary embolism, myocardial infarction, atelectasis& pneumonia (3).

Despite the fact that the most complaint of patients that undergone some operative procedure is pain, studies suggest that nursing management of postoperative pain remains inadequate (11). Inadequately controlled pain negatively affects the quality of life, functional recovery and risks of post-surgical complications and delayed wound healing, the transition to chronic pain, reduced vital capacity and alveolar ventilation(17).

Numerous studies have shown that the prevalence of pain in postoperative patients remains high in association with the increase of the surgical case. Unrelieved pain from post-surgery has devastating physiological, psychological, and socio-economic effects ((18).

The nurses are key professionals who can improve the quality of pain management and provide nursing care to sufficiently meet the needs of patients (11). Despite countless training courses, application strategies, and multidisciplinary pain teams, there are still insufficiency of knowledge and attitude regarding POPM (18,19).

To our knowledge, there is little evidence about the knowledge, attitude, and practice of nurses in the study area. As nurses have frequent contact with patients it is important to understand the knowledge, attitude & practice of nurses towards post-operative pain management.

This study will assess the current nurses' knowledge and attitudes regarding pain management practice and identify associated factors to achieve optimal postoperative pain management.

1.3 Significance of the Study

Despite advances in technology and medicine, unendurable postoperative pain continues to be worrisome for surgical patients. The assessment and control of postoperative pain are therefore critical in the treatment of postoperative surgical patients.

Nurses need to recognize the pathophysiology of pain and has to know that pain management is vital to the healing of post-operative patients. Nurses who care for surgical patients in postoperative settings must recognize the need for adequate pain management and look at the latest data and concepts in how to best manage postoperative pain. Therefore, this study will provide a picture of the level of knowledge, attitudes, and practices of nurses in postoperative pain management and related factors. It helps to improve the knowledge attitude and practice of nurses on POPM, as well as it will be used as basic information for health care intervention in post-operative pain management.

If post-operative pain management done appropriately, patients will relieve from suffering and will have early mobilization, shortened hospital stays, reduced hospital costs, overall increased patient satisfaction and finally come up with good recovery from pain.

Moreover, it also will specifically suggest information that guide hospitals on training towards knowledge, attitude and POPM. Furthermore; it will provide baseline information to any interested researcher to conduct further research on issues related to POPM.

LITERATURE REVIEW

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2.1 Concept of Pain

It is an unpleasant sensory and emotional experience resulting from actual or potential tissue damage (IASP, 1994) .It is the most common reason for seeking health care and considered as a fifth vital sign (20). Pain is subjective data that personally experienced and reported by the patients which makes it difficult for others to assess, evaluate, and manage it (21). Pain is one of the most common symptoms experienced by patients (4,13,22). Because nurses spend more time with patients in pain than other health care providers do, nurses need to understand the pathophysiology of pain, the physiologic and psychological consequences of acute and chronic pain, and the methods used to treat pain (11).Post-operative pain is a pain that a patient felt after undergone a surgical operation(23).

2.2 Prevalence of Pop

A study conducted in the USA showed that among the study participants, 82% of the patients reported that they felt pain after their surgery. Of these patients, 47% had moderate pain and 39% of them felt severe pain during their recovery period (15).

In Australia, pain management & patient satisfaction were best recorded while in Denmark the prevalence of moderate to severe pain was found to be 45.5% at 24 hours with a satisfaction rate of 88.4%. In the United Kingdom, one study reported a prevalence of moderate to severe pain and very severe pain to be 29.7% and 10.9% respectively(17).

In Africa, there are fewer reports; most indicate a high prevalence of post-operative pain with unfavorable relief. Uganda has the highest prevalence (over 90%) and in Tanzania, the prevalence of some form of pain was 85.5% and 77.4% at 24 and 48 hours respectively(17).

The study conducted in Ethiopia at three surgical wards of JUSH showed that 240 (95.2%), 231 (91.7%), 210 (87.5%) of the patients had felt pain in the 1st, 2nd, and 3rd previous 24 hrs. respectively. The pain incidence of the first assessment was significantly higher than that of the second day(5).

A prospective longitudinal study conducted at Zewuditu Memorial Hospital (ZMH), Yekatit12 & Jimma University Medical College (JUMC) showed the prevalence of moderate to severe postoperative pain is high in Ethiopian patients. The care given to patients is insufficient and does not meet international recommendations and standards. It suggests that moderate to severe

postoperative pain was present in 88.2%of patients and the pain was inadequately treated in 58.4% of these patients(24).

2.3 Nurses' Knowledge of post-operative pain management

One Bangladesh study revealed that the overall level of nurses knowledge to postoperative Pain Management was very low (<60%) where a total mean score of was 59.05% (SD = 5.62) (18). Study done at Aasella teaching & referral hospital found that the overall level of health professionals' knowledge towards postoperative pain management was poor (3)

A Study done in Nigeria showed that 41 (60%) respondents had good knowledge of pain assessment & management among surgical patients, while 27(40%) respondents had poor knowledge (14). A Study done in Amhara regional hospitals showed 56.5% of participant had adequate knowledge (25).

A survey done at a selected district hospital in Ghana revealed that 81 representing 48%nurses had inadequate knowledge of POP management (16). Another study conducted in King Saud Medical City (KSMC) revealed that 50% of participants had poor knowledge (2)

A study conducted in a teaching hospital of Malaysia revealed that 58 respondents (69%) had moderate knowledge of post-operative pain management; 21 respondents (25%) had high knowledge and 5 respondents (6%) had a low score of knowledge towards post-operative pain management(10).

A study conducted at a tertiary care hospital in Peshawar, Pakistan found that none of the participants had poor knowledge regarding postoperative pain management while 6.7% of the participants had average knowledge, 71.7% had good knowledge and 21.7% had excellent knowledge about postoperative pain management(26).

A study done in Zimbabwe Bindura hospital revealed inadequate knowledge with a mean knowledge score of 64%(27).

A study done at Arsis zonal hospital in Ethiopia showed that from 144 participants 65(45.1%) had low knowledge and 79(54.9%) had good knowledge about postoperative pain management(11).

2.4 Nurses' attitude towards post-operative pain management

A study done in Zimbabwe at bandura hospital revealed that attitude regarding pain management of adult medical patients was average with a total mean attitude score of 56%(27).

A study conducted in Malaysia teaching hospital, nurses showed a positive attitude towards post-operative pain management. It was reported by 66 respondents (79%) while 18

respondents (21%) had a poor or negative attitude(10).Study done in University of Gonder showed that (51.7%) of nurses had favorable attitude towards pain management.

Study done at King Saud Medical City (KSMC) in Saudi Arabia showed poor attitudes among ICU nurses towards pain management when dealing with ICU patients, 65% of attitude questions were answered incorrectly by more than 50% of the nursing staff(13).A study done in Ethiopia at arsi zonal hospital showed that from 144 participants nearly half 75(52.1 %) had an unfavorable attitude towards post-operative pain management(11).

2.5 Nurses Practice of Assessment and Management of Pain

Effective pain management begins with a comprehensive and accurate evaluation and documentation of findings to help determine treatment options and to ensure effective therapeutic communication between health care professionals and between health care providers and patients (28).

The study in Bangladesh nurses reported that they had practiced in pain management for post-operative patients at a moderate level (M = 77.81%, SD = 10.94) by which three-fourths of them indicated that they had practiced in pain management at the moderate (37.9%), high (21.8%), and very high level (16.1%)(18).

According to the study conducted in Ireland, more than half (57.4%) of the sample always used a pain assessment tool (PAT), a further 38.3% used a PAT frequently, with the remaining 4.3% of respondents rarely or occasionally using a PAT. None of the respondents picked the category ‘never’ use a PAT[(29).

A study conducted in Zimbabwe at Bandura hospital found that 84% of nurses were unaware of pain assessment tools, 76% of nurses were having minimal knowledge regarding ideal time for pain assessment(26).

A study was done in Hawassa university referral hospital In pain assessment and management, there were 13 questions; forty-three (24.4%) nurses had good practice in pain assessment and management but 136 (73.9%)had poor practice(12).

Study done at Arsi zonal hospital showed that 75(52.1%a) had poor practice on postoperative pain management(11).and study done at Bangladesh revealed that 62% of participants had poor knowledge(18).another study done in Addis Ababa on cancer pain management showed that 65.9% of participants had poor practice on POPM(2).

2.6 Factors related to knowledge, attitude, and skill of nurses on pain management

There are many barriers to effective postoperative pain assessment and management, including, staff shortages, heavy workload and institutional constraints .insufficient knowledge of pain, inadequate assessment and evaluation of pain, and various attitudes towards pain may contribute to the problem of suboptimal pain relief(30).

Barriers to pain assessment& management included lack of training on assessment tools (92.6%), lack of availability of assessment tools (88.3%), lack of familiarity with tools (84.7%), lack of protocols and guidelines (3).sex, educational status &work experience are factors that affect knowledge of nurses(12).Study done at Amhara regional referral hospital revealed that nurse good knowledge & positive attitude had significant association to training, and access of journals to read(25).

Many studies, however, investigate the absence of protocols and guidelines, limitation of evaluation tools and unavailability of drugs especially opioids. Due to these barriers, Nurses' knowledge and attitudes, and pain management practices are still less than optimal level [(3). The study conducted in Uganda revealed that Following as barriers to pain assessment; nursing workload (84.1%), lack of availability of Assessment tools (74.1%), lack of education on assessment tools (82.4%), lack of familiarity with tools (78.2%), lack of protocols and guidelines on pain assessment and management (74.1%), poor documentation of pain assessment and management (77.6%) and more than a quarter 29% did not assess for the need for analgesics before wound care(11)

2.7 Conceptual Framework

Pain management strategies are sets of activities that include assessment of pain level, perform the appropriate interventions, reassessment of pain later on intervention, documentation & monitor complications. But such practical activities can be affected by the following major factors

1. Knowledge: the awareness & understanding level of nurses towards pain management
2. Attitude: is mindset & way of thinking of nurses to pain management
3. Socio-demographic factors: age, educational status, work experience…
4. Organizational factor: training, availability of medications, presence of guidelines &tools.

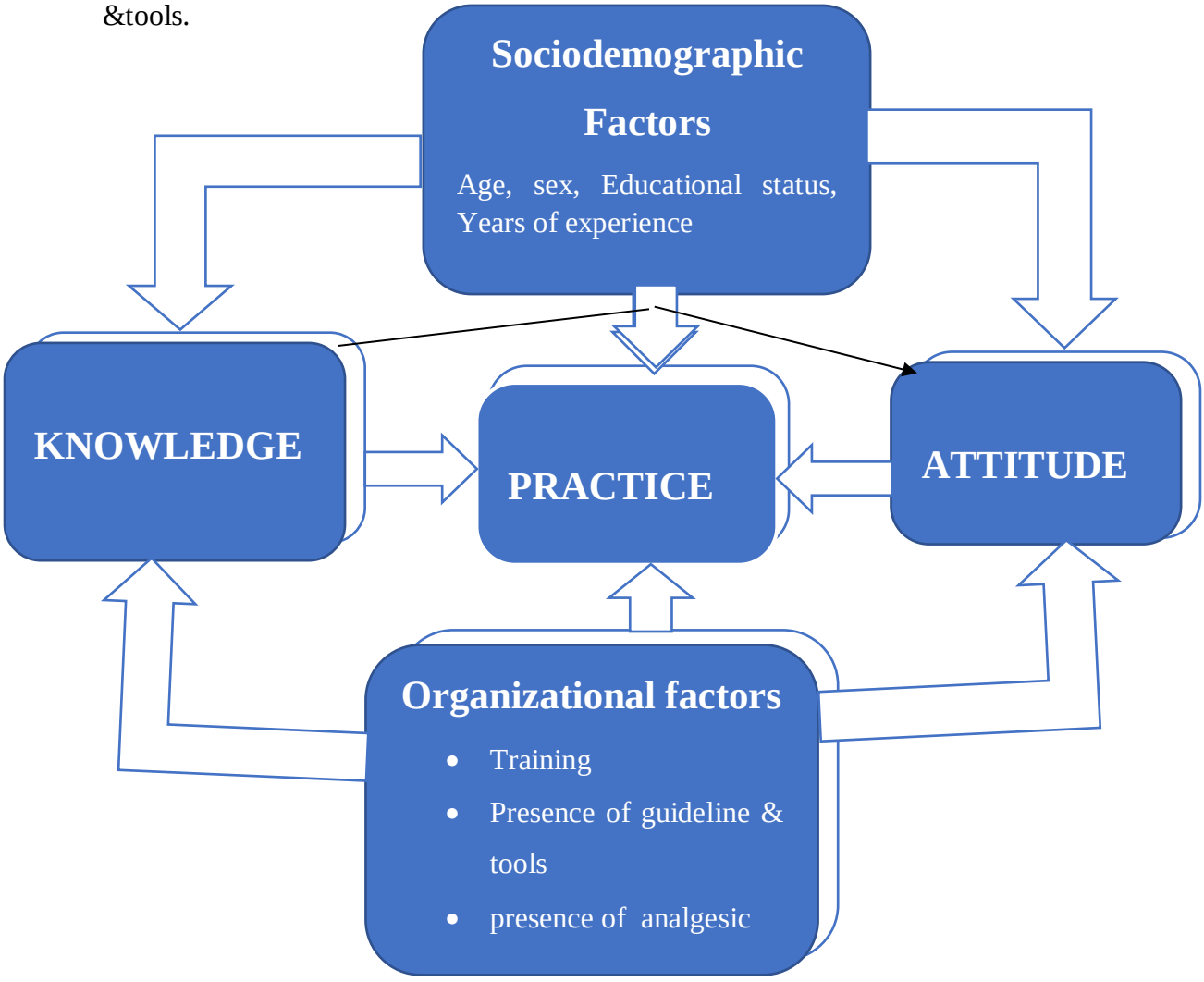


Figure 0-1.1 Conceptual framework on nursing POPM

OBJECTIVES

3.1 General objective

To assess knowledge, attitude, practice & associated factors of nurses towards postoperative pain management in four federal hospitals, Addis Ababa, Ethiopia 2020.

3.2 Specific Objectives

1. To assess the level of knowledge of nurses on POP Management.
2. To assess the attitude of nurses on POP management.
3. To examine the level of practice of Nurses on POP assessment and management.
4. To identify associated factors which affect nurse's post-operative pain management.

RESEARCH METHODS & MATTERIALS

4.1 Study area

The study was conducted in four federal administered hospitals in Addis Ababa. The city has 49 hospitals. Fourteen are public hospitals. Of these public hospitals six of them are under Addis Ababa city administration. The other 6 hospitals are administered under the federal ministry of health of Ethiopia. But two of federally administered hospitals were officially closed due to COVID 19 coronavirus (AaBET & Yeka General Hospitals).Therefore the study setting were four of the following hospitals.

All African Leprosy, Tuberculosis and Rehabilitation Training Center (ALERT): which is located at edge of Adds Ababa City, 10.8 km away from Arada.It is continuation and expansion of the leprosy hospital by Dr.Thomas lambie in 1922. It is a teaching hospital and there is 240 bed including ophthalmology, dermatology, surgery and orthopedic workshop.

St. Paul Hospital Millennium Medical College(SPHMMC): one of the largest public hospital located in Addis Ababa city .the college has 700 beds and sees an average of 1200 emergency and outpatient clients daily.it provides different Biomedical and Clinical departments including General surgery,orthopedic,pediatric and so on.

St. Peter's Specialized Hospital: it is non-teaching hospital located in Addis Ababa city near Shiro Meda, 6.5 km away from arada.in addition to some other service it mainly provides MDR TB treatment service

Tikur Anbesa Specialized Hospital (TASH): one of the largest specialized and teaching hospital, located in Addis Ababa city. It gives service for more than 700,000 patients per year. It has more than 700 beds and it serves as a training center for under graduate and post graduate students. (Data obtained from medical service directorate of the federal ministry of health and their websites).

4.1 Study Period

The study was conducted in four hospitals administered by The Federal Republic of Ethiopia in Addis Ababa from November 2019 till June 2020.

4.2 Study Design

Institution-based cross-sectional study design was conducted.

4.3 Population

4.3.1 Source Population

All staff nurses working in the four federal hospitals in Addis Ababa

4.3.2 Study Population

Nurses working in surgical, PACU, & Orthopedic wards in the four federal hospitals in Addis Ababa, Ethiopia and that fulfill the inclusion criteria.

4.3.3 Eligibility criteria

4.3.3.1 Inclusion Criteria

All nurses, who are currently working in the surgical ward, PACU, & orthopedic ward.

4.3.3.2 Exclusion Criteria

Nurses inaccessible during data collection; sick and leave. Nurses who are working in the two units during data collection time were excluded from one unit in the study

4.4 Sample size determination& procedure

Nurses working in surgical, PACU, orthopedic wards at the four federal hospitals were included in Survey.

Table 0-1 The Total numbers of Nurses in each hospital

Sr.no	Name of hospital	Number of nurses
1	Petrous	35
2	TASH	72
3	St. Paulo's	68
4	ALERT	55
	TOTAL	230

4.4.1 Sample size determination

The following formula (single proportion formula) was used to determine the sample size:

$n = Z^2pq/ d^2$

Where n= the desired sample size (if the population is greater than 10,000)

z = the standard normal deviate at a 95% confidence level (=1.96).

p = the proportion in the target population estimated to provide required POP which is taken from a prospective study done at ZMH, JUMC& Yekatit 12 hospital in one year back(p=88.2%(24)).

q = 1-P=1-0.882=0.118

d = precision (set at 5 % or 0.05)

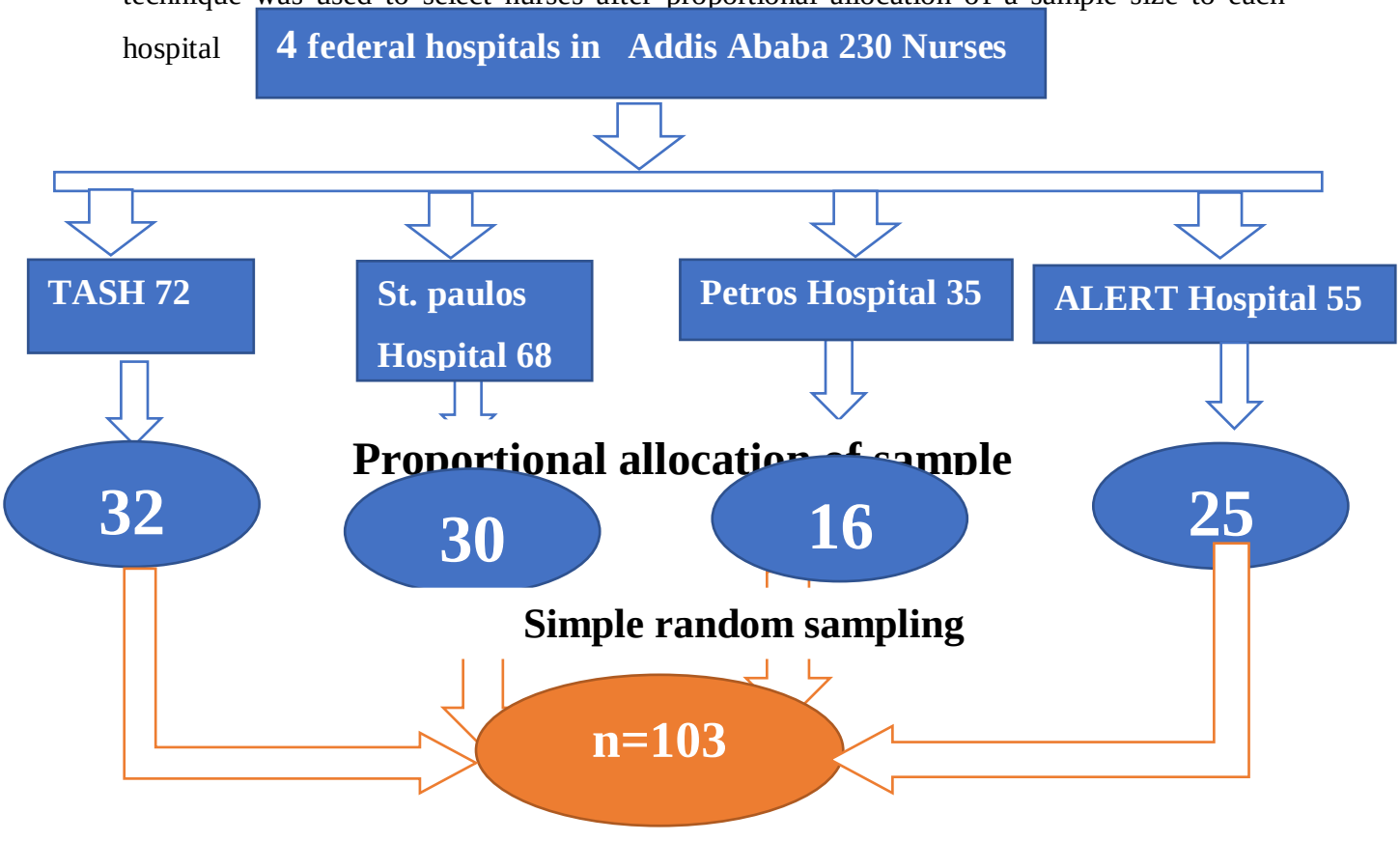
Substituting these figures in the above formula: n = 160

Since the target population is less than 10,000 the sample size were adjusted using the following formula:nf =n/1 + n/N Where nf = the desired sample size (since the population is less than 10,000), n = the desired sample size (when the population is more than 10,000) .

Therefore substituting the value and final n(nf) was 94 but considering the non-response rate of 10% then the total sample size were 94+9= 103

4.4.2 Sampling procedure

sample size was distributed for four hospitals by the probability proportion to sample size (PPS) sampling technique. For each hospital, the proportionate number of study subjects were determined by using **n=nf/N *ni** Where, ni= Number of nurses in each hospital, nf= Total sample size, N= Total number of nurses in federal hospitals. Then Simple random sampling technique was used to select nurses after proportional allocation of a sample size to each hospital



4.5 Study Variables

4.5.1 Dependent Variables

- Knowledge, Attitude and Practice on pop management

4.5.2 Independent Variables

- Socio-demographic characteristics
  - Age
  - Marital status
  - Educational status
  - Years of Experience
  - working area
  - gender
- Organizational Factors
  - Training on pain management
  - Availability of pain assessment tools & guidelines
  - Availability of pain drug(analgesics)

4.6 Operational Definitions

Knowledge: means the nurses' perception and understanding of post-operative pain management based on experience. This is categorized as good knowledge and poor knowledge based on the mean(11).

Good knowledge: is the knowledge status of nurses when they score more than the mean.

Poor knowledge: is the knowledge status of nurses when they score less than the mean.

Attitude: refer to the nurses' behavior and way of acting towards effective pain management. This is categorized as a favorable attitude and an unfavorable attitude(11).

Favorable attitude: is the category of nurses when they score more than the mean value.

Unfavorable attitude: is the category of nurses when they score less than the mean

Practice: This means the nurses' skill in post-operative pain management based on their experience (11).

Good practice: is the practice status of nurses when they score more than the mean.

Poor practice: is the practice status of nurses when they score less than the mean.

4.7 Data Collection Procedure

Four data collectors, one for each hospital and three nurses for supervision activities who are not employees of the study hospitals were selected to reduce bias. Both data collectors and

supervisors have previous experience in data collection. Training was given for data collectors and supervisors for one day on a method of extracting the needed information, how to fill the information on a structured questionnaire and the ethical aspect in approaching the participants as well as the aim of the study and contents of the instruments. Therefore, data collectors were familiar with each question. They were approaching the participants politely and respectfully. The supervisors were monitoring the data collection process of the data collectors and when a problem happens, they tried to solve or contact the principal investigator.

4.8 Data collection tools

Data were collected through structured and pre-tested self-administered questionnaire which was adopted from literature (11). Through phone communication permission was obtained from the owner & it has 5 parts:

1. Socio-demographic characteristics of respondents contain 08 questions
2. Knowledge of respondents on POPM contain 12 questions in this part. The sum score was classified into 2 levels (good and poor knowledge).
3. Attitude of respondents towards POPM. This part contains 09 statements, the sum score was classified into 2 levels (favorable attitude and unfavorable attitude).
4. Practice related questions towards POPM. 6 questions are included in this part. The sum score was classified into 2 levels (good practice and poor practice).
5. Organizational factors that affect nurses' POPM contain 05 question.

2.10 Data quality assurance

To assure the data quality, each questionnaire was checked for completeness, missed values, and unlikely responses; those incomplete questionnaires were omitted from the analysis. Principal investigator and supervisors made spot-checking and reviewing the completed questionnaires by the data collectors to ensure completeness and consistency of the information that were collected; before the actual data possessing entry of 5% of the data to EPI data software package were made to maintain the data quality.

4.9 Data processing and analysis

The collected data were checked visually for its completeness and the response was coded and entered into the computer using Epi data version 3.1 statistical package and 5% of the respondents were randomly selected and check for the consistency of data entry. Then data were exported to windows of Statistical Package for Social Science (SPSS) version 25 for data analysis. During the process of analysis, descriptive statistics was used to provide an overall and coherent presentation and description of the data.

Binary logistic regression analysis was done to see the crude significant relation of each independent variable with dependent variables. Variables with a 95% confidence interval and P-value at <0.25 during the bivariate analysis were entered to multivariate logistic regression analysis to see the relative effect of confounding variables and interaction of variables. Odds ratio with 95% CI were performed on variables to determine the strength of the association of variables. A P-value of less than 0.05 was taken as a cut of value to be significant.

4.10 Ethical consideration

Ethical clearance was obtained from Addis Ababa University, College of Health Sciences, and Department of Emergency Medicine department head. An official letter was submitted to TASH, Alert, St. petrous and St. Paulos and permission were taken from those bodies. Respondents were ensured about the confidentiality of information obtained and the respondent's name was not asked. Then written consents were obtained from each study subject after explaining the objectives of study and procedures.

4.11 Dissemination and Utilization of Results

The primary objective of this thesis is for partial fulfillment in the requirements of degree of Master in Emergency Medicine and Critical Care Nursing; it will be submitted and presented to the department of EMCCN, Addis Ababa University.Afterward,it will be presented to different scientific conferences. Finally, it will be published in a reputable national or international journal to make it accessible to the scientific community.

RESULTS

4.1 Socio-demographic characteristics of nurses

A total of 103 structured questionnaires were distributed to nurses working in surgical, PACU and orthopedic ward and the response rate was 99%. From all the respondents, 51 (49.5%) and 52 (50.5%) were male and female, respectively. The mean ages of participants were 27.79 years ± 3.95 SD. The age category of the respondents show that 74 (71.8%) were between 20-30 years. From all the respondents, 77 (74.8%) were bachelor degree holders; 39(37.9%) had 2 to 5 years of work experience and 46(44.7%) were working in surgical ward (Table 2).

Table 2: - Socio-demographic characteristics of nurses at federal hospitals, Addis Ababa, Ethiopia, 2020 (N=103).

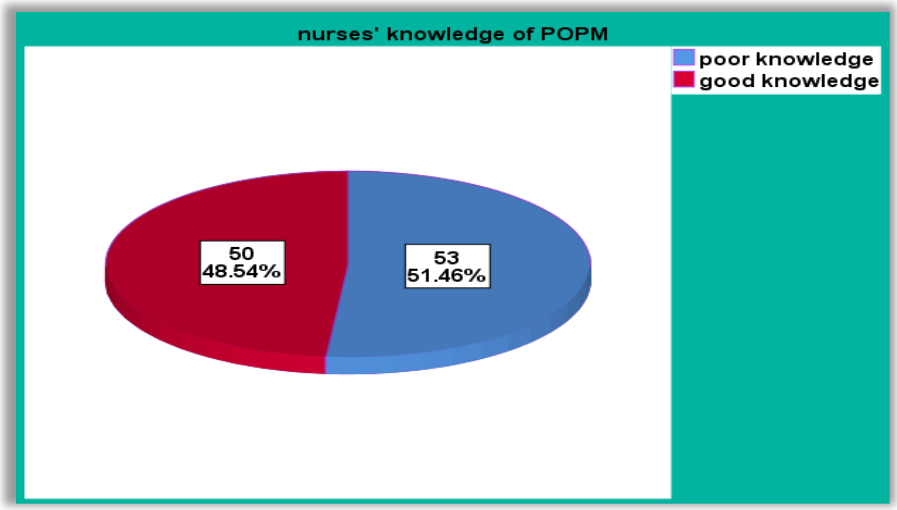
Characteristics		Frequency	percent
Sex	Female	52	50.5
	Male	51	49.5
Age	20-30	74	71.8
	31-40	25	24.3
	>40	4	3.9
Marital Status	Single	71	68.9
	married	30	29.1
	Divorced	1	1.0
	Widow	1	1.0
Educational level	Diploma	10	9.7
	Bachelor (BSc)	77	74.8
	Masters (MSc)	16	15.5
Work experience	< 2 yrs.	31	30.1
	2 to 5 yrs.	39	37.9
	5 to 10 yrs.	24	23.3
	10 to 15 yrs. >15	6	5.8
		3	2.9
Current area of practice	Surgical	46	44.7
	Orthopedic	27	26.2
	PACU	29	28.2

5.2 Knowledge of nurses to post-operative pain management

Most of the participants 66(64.1%) knew that the side effects of narcotics should be observed at least 20 minutes after administration and 78 (75.7%) of the study subjects knew that pain should be assessed before and after administering pain drugs while 65(63.1%) of participants said paracetamol injection is not used for surgical pain management. **Table 3: Frequency & percentage distribution of nurses' knowledge about POPM**

	Yes		**No**	
Characteristics	N	%	N	%
Increasing analgesics, indicate the patient is psychologically dependent	68	66.0	35	34.0
Paracetamol injection is used in managing surgical pain.	37	35.9	65	63.1
Cold and heat compress should be used in the management of surgical pain.	61	59.2	42	40.8
Combining analgesics that may result in better pain control with fewer side effects than using a single analgesic agent	72	69.9	31	30.1
Pain should be assessed before and after administering pain drugs.	78	75.7	25	24.3
Observation is part of the method used in surgical pain assessment	79	76.7	23	23.3
The side effects of narcotics should be observed at least 20 minutes after administration	66	64.1	37	35.9
Patients should be encouraged to endure as much pain	64	62.1	39	37.9
Rating scale ranging from (0) "no pain at all to (10) the worst pain" is essential to adopt in pain assessment	77	74.8	26	25.2
If patient sleeps with no movement postoperatively, this indicates that patient is not in pain	39	37.9	64	62.1

A total of 12 questions were asked & the **mean score** was 7.17 with SD=2.88 and minimum & maximum values are 1 & 12 respectively. Study participants who scored less than the mean value was regarded as poor knowledge whereas participants who scored more than the mean value were regarded as good knowledge. From the of 103 participants, 53(51.5%) had poor knowledge and 50(48.5%) had good knowledge about post-operative Pain management.



Poo Figure 3: Knowledge of nurses on post-operative pain management in federal hospitals of Addis Ababa Ethiopia, 2020.

5.3. Attitude of Nurses towards POP management

Nurses were asked to score 9 questions on a five- point Likert scale related to postoperative pain management. The mean score for attitude was 30.83 with SD=7.87. Respondents who scored more than the mean value were regarded as having favorable attitude whereas nurses who scored less than the mean value were regarded as having an unfavorable attitude towards post-operative pain management. Among the 103 respondents, 60(58.3 %) had favorable attitude whereas 43(41.7%) of participants had unfavorable attitude towards post-operative pain management.

Table 4: frequency& percentage distribution for Attitude of Nurses towards POPM

Attitude Variable	Strongly Agree	Agree	Uncertain	Not Agree	Strongly Disagree
Pain is seen in the patient's behavior	27(26.2%)	47(45.6%)	10(9.7%)	11(10.7%)	8(7.8%)
Distraction reduces pain intensity	13(12.6%)	38(36.9%)	18(17.5%)	22(21.4%)	12(11.7%)
Non-pharmacological interventions are very effective for mild to moderate pain	24(23.3%)	39(37.9%)	19(18.4%)	8(7.8%)	13(12.6%)
The use of placebo is important in determining if the patient is real pain	25(24.3%)	33(32.0%)	7(6.8%)	20(19.4%)	18(17.5%)
Surgical patients usually feel Pain more intense than medical patients	28(27.2%)	34(33%)	16(15.5%)	11(10.7%)	14(13.6%)
The nurse's personal experience to pain affects the way the nurses manage pain	19(18.4%)	43(41.5%)	13(12.6%)	11(10.7%)	17(16.5%)
Observable changes in vital sign must be relied on to verify patient's complain of severe pain	26(25.2%)	38(36.9%)	12(11.7%)	15(14.6%)	12(11.7)
Nurses are best judges of the patient's pain	34(33.0%)	36(35. %)	8(7.8%)	8(7.8%)	17(16.5%)
Do you agree with patient's statement to their pain	20(19.4%)	31(30.1%)	20(19.4%)	16(15.5%)	16(15.5%)

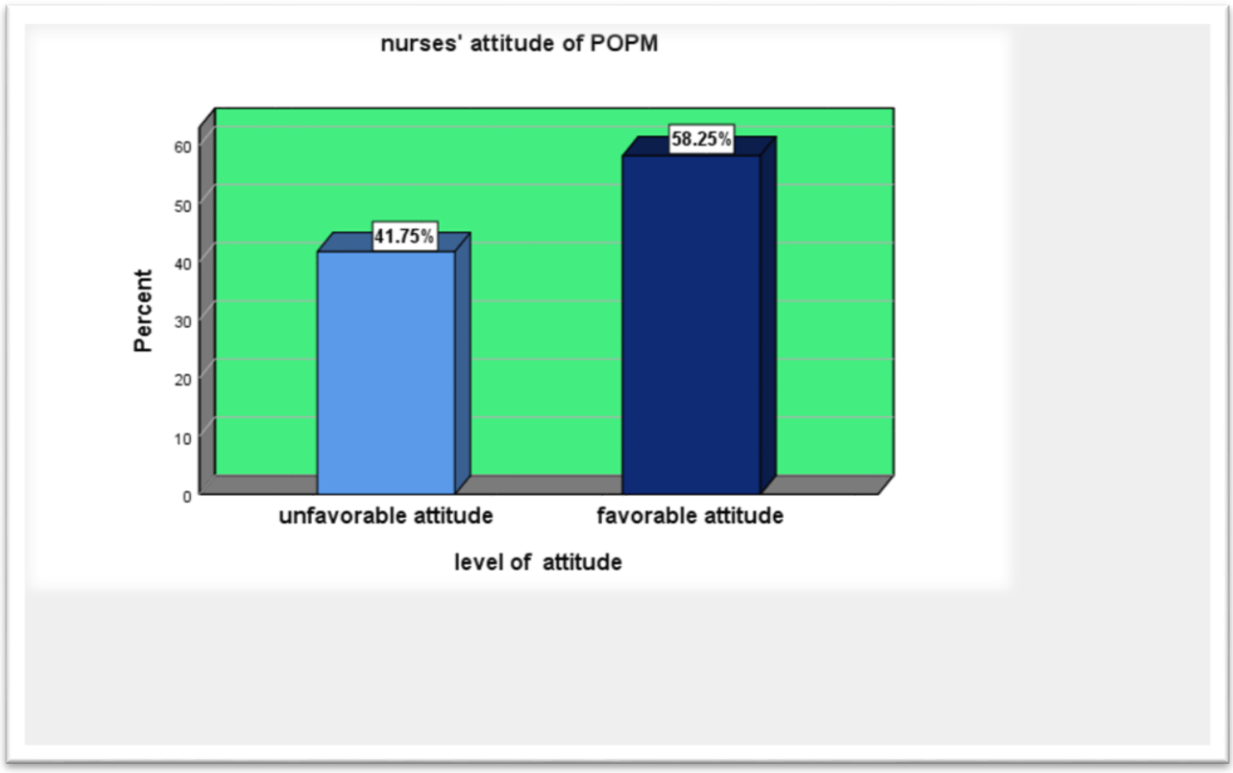


Figure 4, nurses' level of attitude towards post-operative pain management in federal hospitals, Addis Ababa Ethiopia 2020.

5.4. Practice of Nurses towards POP management

The mean score for nurses' practice of post-operative pain management was 4.03 with a standard deviation of 1.76. Study participants who scored less than the mean value were regarded as having poor practice, whereas participants who scored more than the mean value were regarded as having good practice. Therefore, from all participants nearly half of them, 51(49.5%) had poor practice and that of 52(50.5%) had good practice. Majority of the study subjects 76 (73.8%) discussed pain score & management during nurse to nurse report. More than half of participants 59(57.3 %) uses pain assessment tools but 11(10.7%) of them never knew the name of PAT they used. And most of the participants 84(81.8%) provide direct nursing care to post-operative patients

Table 5: frequency & percentage distribution of Nurses practice towards POPM

	Yes		No	
Variables	**no_**	**%**	**no_**	**%**
Do you provide direct nursing care to POP patients?	**84**	**81.8**	**19**	**18.4**
Do you assess pain for patient able to communicate?	**74**	**71.8**	**29**	**28.2**
Do you use a pain assessment tool?	**59**	**57.3**	**44**	**42.7**
Are pain scores and management discussed during nurse-to-nurse report?	**76**	**73.8**	**27**	**26.2**

Name the pain assessment tool you used?

NRS (numerical rating scale)	30	29.1
VRS (verbal rating scale)	32	31.1
VAS (visual analog scale)	30	29.1
Nothing (not know)	11	10.7

How frequent do you use a pain assessment tool? Usually = 63 (61.2%)

Never = 40 (38.8%)

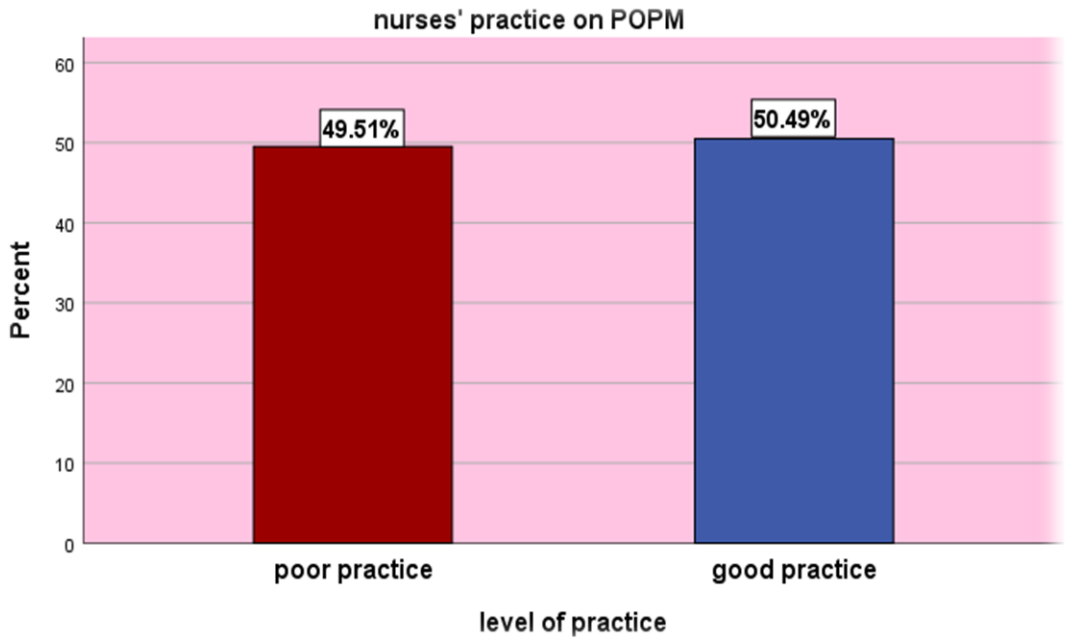


Figure 5: Graphic representation of nurses' practice towards post-operative pain management in federal hospitals, Addis Ababa Ethiopia 2020 (n=103)

5.5 Factors affecting post-operative pain management

Majority of the participants 54(52.4%) had never had any training on pain assessment and management. And only 61(69.2%) of the study subjects respond as pain drugs are usually available in their stock. From all participants, 54(52.4%) responds nursing workload is a barrier to effective pain management & 34(33.0%) of respondents do not have pain guideline.

Table 6 frequency & percentage distribution of perceived barriers to pain management

	Frequency	%
Nursing workload	54	52.4
Lack of PAT	50	48.5
Lack of knowledge to PAT	40	38.8
Lack of organization protocol for pain assessment	31	30.1

Availability of pain drugs?	Usually available	61	69.2
	Sometimes available	37	35.9
	Not available	5	4.9
Received training	1.yes	49	47.6
	2. no	54	52.4
Have you pain guideline	1.yes	62	60.2
	2 .no	34	33.0
How often you read guideline	1. usually	66	64.1
	2. Rarely	37	35.9

5.5.1 Factors associated with nurses' knowledge, Attitude and Practice towards postoperative pain management.

A Binary logistic regression model was used for Bivariable & multivariable analysis between dependent & independent variables. Bivariable binary logistic regression was used to select variables needed to be entered in to multivariable binary logistic regression by using p value =0.25 as a cut point to include more variable. Therefore, factors that showed a p-value of less than 0.25 were a candidate to multivariable logistic regression model to eliminate confounders.

5.5.1.1 Bivariable and multivariable analysis of factors associated with nurses' knowledge of POPM.

In bivariate logistic regression, gender, attitude level, lack of PAT, in-service training & nursing workload were significantly associated with nurses' knowledge of POPM.

But according to multivariate analysis after controlling confounding factors, three factors had significantly associated to nurse's knowledge of postoperative pain management (gender, in-service training & attitude level). Males were almost 3 times (AOR= 3.319, 95%CI (1.169-9.419), P-value=0.024) more likely to have good knowledge on POPM than females. The likely hood of having good knowledge towards POPM by nurses who had taken in-service training on pain management (AOR=4.889, 95%CI (1.71-13.977), P-value-0.003) is almost 5 times than nurses who had never taken in-service training on pain management. Nurses having favorable attitude (AOR=5.115, 95%CI (1.79-14.613), P-value=0.002) is almost 5 times more likely to have good knowledge on post-operative pain management than nurses that have unfavorable attitude to POPM.

Table 7: Factors associated with nurses' knowledge on POPM.

		Knowledge of nurses		Odds ratio with 95%CI		
		Poor knowledge Count (%)	Good knowledge Count (%)	Crude OR COR(CI)	Adjusted OR AOR(CI)	P-VALU
sex of nurse	Male	18(17.5%)	33(32.0%)	**3.775 (1.669-8.534)***	**3.319(1.169-9.419)****	**0.024**
	Female	35(34.0%)	17(16.5%)	1.00	1.00	
educational status	Diploma	8(7.8%)	2(1.9%)	1.00	1.00	
	BSc	41(39.8%)	36(35.0%)	0.125(.027-0.59)	0.60 (0.122-2.13)	.139
	MSc	6(4.8%)	10(9.6%)	0.176 (2.977-54.472)	.5083 .(.147-2.53)	.198
Received training	Yes	17(16.5%)	37(35.9%)	**6.027 (2.522-14.180)***	**4.889(1.71-13.977)****	**.003**
	No	36(35.0%)	13(12.6%)	1.00	1.00	
nursing workload is a barrier to pain management	Yes	33(32.0%)	21(20.4%)	**0.439 (0.199-0.967)***	.709 (0.248-2.031)	.522
	No	20(19.4%)	29(28.2%)	1.00	1.00	
Attitude of nurses	unfavorable attitude	33(32.0%)	10(9.7%)	1.00	1.00	
	favorable attitude	20(19.4%)	40(38.8%)	**6.6 (2.716-16.041)***	**5.115 (1.79-14.613)****	**.002**
lack of PAT is a barrier that hinder pain assessment tool	Yes	20(19.4%)	30(29.1%)	1.00	1.00	
	No	33(32.0%)	20(19.4%)	.404(.183-.893)	.575(.201-1.644	.302

***5.5.1.2* Bivariable and multivariable analysis on factors associated with nurses' attitude towards post-operative pain management.**

In bivariate analysis, gender, educational status, in-service training, knowledge level & nursing workload were significantly associated with nurses' attitude of post-operative pain management. But in multivariate binary logistic regression analysis only knowledge level of nurses' keep its association to nurses' attitude of POPM. Those nurses who had good knowledge about nursing post-operative pain management were almost 7 times more likely to have favorable attitude than those who had poor knowledge (AOR=**6.600**,95%CI(**2.716--16.041)**,P-value=0**.000.**

Table 8: Factors associated with nurses' attitude on POPM.

		Attitude level		odds ratio with 95% CI		
Variables	response	unfavorable	favorable	COR	AOR	P-value
Sex	male	15(14.6%)	36(35.0%)	2.8(1.243-6.31)*	1.817(.740-4.461)	.193
	Female	28(27.2%)	24(23.3%)	1.00	1.00	
Educational	diploma	6(5.8%)	4(3.9%)	1.00	1.00	
level	BSC	34(33.0%)	43(41.7%)	1.897(.495-7.265)	.638(.145-2.801)	.551
	MSC	3(2.9%)	13(12.6%)	6.5(1.094-38.63) *	1.079(.140-8.338)	.942
In-service training	yes	18(17.5%)	36(35.0%)	3.847 (1.678-8.82)*	1.947(.732-5.177)	.182
	No	25(24.3%)	24(23.3%)	1.00	1.00	
Knowledge	good knowledge	10(9.7%)	40(38.8%)	6.60(2.716-16.0)*	6.600(2.716-16.041)**	.000
	poor knowledge	33(32.0%)	20(19.4%)	1.00	1.00	
nursing workload	yes	26(25.2%)	28(27.2%)	1.00	1.00	
	no	17(16.5%)	32(31.1%)	1.748(.844-4.140)	1.286(.524-3.159)	.583

5.6.1.3 Bivariable and multivariable analysis on factors associated with nurses' practice of post-operative pain management.

In bivariate logistic regression analysis, nurses' knowledge, attitude, nursing workload, lack of PAT, lack of organizational protocol to pain assessment, in-service training & availability of pain drugs in their stock are significantly associated with nurses' practice of postoperative pain management.

In multivariate logistic regression analysis, nurses' knowledge, attitude & lack of an organizational protocol to pain assessment had significantly associated with nurses' practice towards post-operative pain management.

Those nurse with good knowledge & favorable attitude were almost **7** and **5** times more likely to have good nursing practice towards postoperative pain management than nurses with poor knowledge& unfavorable attitude(AOR=6.932,95%CI(2.075--23.158),P-value=0.002 and AOR= 4.517,95%CI (1.433--14.235) ,P-value=0.001)respectively. Similarly, those nurse who didn't have an organizational protocol to pain assessment were 0.19 times less likely to have good practice towards postoperative pain management than nurses who have an organizational protocol to pain assessment (AOR=0.190, 95%CI(.052-.696),P-value=0.012).

Table 9: Factors associated with nurses' practice on POPM.

		Nurses 'practice level		Odds ratio with 95%CI		
		Poor practice N(N%)	Good Practice N (N %)	Crude OR COR(CI)	Adjusted OR AOR(CI)	P-VALU
nurses' attitude	Unfavorable	32 31.1%	11 (10.7%)	1.00	1.00	
	favorable	19 18.4%	41 39.8%	6.278 (2.618-15.055)*	4.517 (1.433-- 14.235)**	0.01
nurses' knowledge	.poor	37 35.9%	16 15.5%	1.00	1.00	
	Good	14 13.6%	36 35.0%	5.946 (2.538-13.933)*	6.932 (2.075--23.158)**	.002
in-service training	Yes	15 14.6%	38 36.9%	6.514 (2.759 15.383)	2.330 (.729-7.443)	.154
	No	36 35.0%	14 13.6%	1.00	1.00	
availability of pain drugs	Usually Available	20 19.4%	41 39.8%	3.075 (.475-19.899)*	7.507 (.707-79.744).	.0950
	Sometimes	28 27.2%	9 8.7%	.482 (.069-3.357)	1.20 (.113-12.793)	.879
	not available	3 2.9%	2 1.9%	1.00	1.00	
nursing workload	Yes	34 33.0%	20 19.4%	1.00	1.00	
	No	17 16.5%	32 31.1%	3.200 (1.428-7.171)*	2.323(.773-6.987	.133
lack of PAT	Yes	34 33.0%	19 18.4%	.2880 (.128-.648)*	2.317(.718-7.479) .160	.1600
	No	17 16.5%	33 32.0%	1.00	1.00	
lack of organizational protocol	Yes	26 25.2%	46 44.7%	. 1.00	1.00	
	No	25 24.3%	6 5.8%	.136 (.049-0.373)*	.19(.052-.696)**	.0120

DISCUSSION

Postoperative pain is a serious public health problem both in the developed and in developing countries (3). Nurses are key professionals who can improve the quality of pain management and provide nursing care to sufficiently meet the needs of patients. Therefore, this study was aimed to assess knowledge, attitude, and practice and associated factors of nurses towards post-operative pain management at four federal hospitals in Addis Ababa, Ethiopia.

6.3 Knowledge of nurses towards POPM

The findings of this study revealed that more than half 53(51.5%) of the respondents had poor knowledge on postoperative pain management which is similar to the results of a study conducted in Ghana, in which nearly 50% of the study participants had poor knowledge about POPM(16). The result of the present study is also in line with a study done in Amhara regional hospitals in which 44% (25) & King Saud Medical City (KSMC) study in which 50% of participants had poor knowledge (2).

This result is also consistent with the findings of a study done in Bangladesh (18), Zimbabwe Bandura hospital (27)&Aassela teaching & referral hospitals(3) in which s the overall of participants knowledge were reported as poor. The possible reason for the consistency of the above studies may be due to the utilization of the same study design (cross -sectional) and study subjects (nurses).

This study result was higher than the findings from a study in Malaysia (only 6% had poor knowledge) (10).This discrepancy might be due to tool difference & work setting of participants since the previous study includes nurses working in the ICU. This finding was also slightly higher than the study done in Arsi zonal hospital 45.1% (11). This perhaps can be due to the workload of nurses here may be higher than nurses of Arsi zonal hospital.

In contrast, this result is slightly lower than the study done in Zimbabwe Bindura hospital 64% (27), this can be due to the educational status of participants, in which the present studies participants had more of bachelor degree.

This study identified factors significantly associated with the knowledge of nurses on postoperative pain management. Gender was significantly associated with nurses' knowledge of POPM in which males are almost 3 times more likely to have good knowledge than females, which contradicts with the study done at Hawassa that states males are 0.47 times less likely to have good knowledge on pain assessment & management (12). This difference can possibly due to the frequency of female participants was quite higher than male participant in study done

at Hawassa. The above finding was also supported by the study done at Arsi zonal hospital (11).

Nurses who received training on postoperative pain management are 5 times more likely to have good knowledge than nurses who have not receive training. This finding is less than the study done in Amhara regional referral hospitals in which nurses who received training was 9 times more likely to have good knowledge than those who have not received training. This discrepancy can possibly be explained by the difference in study setting & sample size since the previous study had a higher sample size (n=433). It also supported by a study done at Eritrea hospital (31).

Nurses having a favorable attitude are almost 5 times more likely to have good knowledge of postoperative pain management than nurses that have an unfavorable attitude to POPM. This study is supported by study done in Ghana (32).

6.2 Nurses' attitude towards POPM

The results of this study indicated that 60(58.3%) of nurses had a favorable attitude towards postoperative pain management. This finding was almost similar to studies conducted in Zimbabwe (56%)(27), Gondar(52%)(33), King Saud Medical City (KSMC)(50%)(13).On the other hand the current study finding was slightly lower than study conducted in Malaysia teaching hospital 66(79%)(10) .The difference can be due to the study settings variation and poor knowledge in the present study.

This result is slightly higher than the study done at Aarsi zonal hospital. The discrepancy can be due to a lack of in-service training & pain guidelines in nurses of Aarsi zonal hospital than nurses of present study.

In multivariate analysis, the knowledge of nurses has significantly associated with favorable attitude of nurses towards post-operative pain management which is supported by study at Jordan(34),and Eritrea hospital(31).

6.3 The nurses' practice towards post-operative pain management

The finding of this study showed nearly half of the participants 51(49.5%) had poor practice towards post-operative pain management which is consistent with the study done at Arsi zonal hospital(52.1%)((11), Addis Ababa(47.6%)(35) and Bangladesh(62%)(18).

This finding is slightly lower than a study done at Hawassa(73.9%)(12).The difference can be possibly explained by the operation of the score level, because the present study classifies the score based on the average mean while the previous is classifies out of 80% (which obtained

from literature).The other possible reason can be the study setting difference & sample size of the previous study higher than the present.

This finding is also lower than study in Addis Ababa on cancer pain management (65.9%)(2). This can be due to the previous study includes private hospitals & nurses had workload & lack of motivation due to salary.

According to multivariate analysis, knowledge, attitude and organization protocol were significantly associated to nurses' post-operative pain management. In this study the likelihood of having good practice on POPM for nurses with good knowledge & favorable attitude was high as compared to those with poor knowledge and unfavorable attitude.

This result supported by studies in Ghana(32),Jordan(34) ,Eritrea hospital(31). Lack of organizational protocol to pain assessment was another factor that significantly associated with nurse's practice on post-operative pain management which is supported study at Arsi zonal hospital(11) and Assela (3).

7. LIMITATIONS & STRENGTH OF THE STUDY

LIMITATIONS

- ✓ The Pandemic Covid 19 corona virus was a challenge for data collection
- ✓ This study used only self-administered questionnaire, there might be social desirability bias.
- ✓ Direct observation would have had more precise indicative of nursing practice, but that was not possible.

STRENGTH

- ✓ The study conducted was conduct in hospitals that have almost similar setting.
- ✓ Study subjects are only nurses who are doing on post-operative wards

8. CONCLUSION AND RECOMMENDATIONS

8.1 CONCLUSION

The present study showed that nurses have favorable attitude but poor knowledge and practice towards post-operative pain management in the four federal hospitals. Gender, training and favorable attitude were found to be statistically significant with knowledge of nurses. And good knowledge was found to be significantly associated to favorable nurses' attitude towards nurse's post-operative pain management. An Organizational protocol to pain assessment, knowledge and attitude of nurses had significant association with nurse's practice on POPM.Therefore this study concluded that pain management in general and POPM in particular still remains a challenge.

8.2 RECOMMENDATIONS

The study forwards the following recommendations to responsible bodies

To Federal Ministry of Health and policy maker

Should be committed to effective pain management by developing standard pain guidelines and create an opportunity that pain assessment & management courses to be included in nursing curriculum via communicating with the nursing schools of the universities and organize in-service trainings and national campaigns on pain management.

To Hospitals

They are recommended to recruit nurses until hospitals are saturated enough to reduce nurses' workload and avail necessary materials like, pain assessment tools, pain guidelines, organizational protocols for pain assessment and management and recent articles in the ward in which nurses are working.

They are also recommended to adjust in service training programs for all nurses in order to increase their knowledge, attitudes and practice towards POP management. Creating a pain management team that includes nurses and departmental discussions on pain management and create a system to follow and monitor their staffs how they practice post-operative pain management and give feedback for those staffs that faced a problem.

To nurses

Recommended to have self-learning strategies; should update their knowledge regarding postoperative pain management through continuous professional development, regular in-service short-term training, and on-line reading.

To researcher

Recommended to conduct similar multisite studies to have a general picture of post-operative pain management and to discriminate this information through several means including media and publications.

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ANNEXES

Annex I: consent form

Dear Nurse

As part of the requirements for the Master of Science in emergency medicine& critical care nursing, I am conducting a study about nurse's knowledge, attitude and practice about post-op pain management. You are being invited to participate in this research study. Before you decide to participate, you need to understand what participation consists of and the purpose of this study. The purpose of this study is to assess the level of knowledge, attitude, and practice among registered nurses who care for adult post-operative patients. To attain this study objective your goodwill and kindly participation are needed. Confidentiality is strictly protected and none of your responses were reported separately. Therefore, there is no need to write your names or ID numbers on these questionnaires. It is your right to participate or to refuse in this study. However, your sincere responses will help us to generate valuable information to attain the purpose of the study. So please take a few minutes to answer the questions. If you choose to participate, you may withdraw your participation at any time during the survey. Completion of the survey will serve as your consent to participate. There were no direct benefits to you for participation in this study. I hope that information obtained from this study may be useful to the body of nursing to increase understanding of post-op pain management.

Annex II: Questionnaire

Part I: Socio-Demographic Characteristics of respondents

Instruction: Please circle the number of your choice

Item no	Question	Response
101	Sex	1.male 2 female
102	Age	-------
103	Marital status	1. Married 4.window 2. Single 3.divorse
105	Educational status?	1. Diploma 2. Bachelor degree 3.Master'sdegree&above
106	Work experience?	1. <2 yrs 2. 2-5yrs 3. 5 - 10 yrs. 4.10-15yr. 5. >15
107	Where is your current practice?	1. Surgical ward 2. orthopedic ward 3. PACU

Part II: Respondents knowledge to POP assessment and management related questions

Instruction: Please circle the number of your choice

201	When a patient requests increasing amounts of analgesics to control pain, this usually indicates that the patient is psychologically dependent	1. Yes 2. No

202	Paracetamol injections used in managing surgical pain	1. Yes, 2. No
203	cold and heat such as a warm bath, sitz bath, ice bags compress should be used in the management of surgical pain	1. Yes 2. No
204	combining analgesics that work by different mechanisms may result in better pain control with fewer side effects than using a single analgesic agent	1. Yes 2. No
205	Pain should be assessed before and after administering pain drugs.	1. Yes 2. No
206	Observation is part of the method used in surgical pain assessment	1. Yes 2. No
207	The side effects of narcotics should be observed at least 20minute after administration	1. Yes 2. No
208	Patients should be encouraged to endure as much pain as possible before using an opioid	1. Yes 2. No
209	Rating scale ranging from (0) "no pain at all to (10) the worst pain" is essential to adopt in pain assessment	1. Yes 2. No
210	If a patient sleeps with no movement postoperatively, this indicates that a patient is not in pain	1. Yes 2. No
211	Which drugs you use for severe pain Management?	1. NSAIDs 2. Mild Opioids 3. Strong Opioids

212	Type of pain relief selected for the patient should be based on the type of surgery	1. Yes 2. No

Part III: Respondents attitude to POP assessment and management related questions,

Item No	Questions	Response				
		Strongly agree	Agree	Uncertain	Not agree	Strongly disagree
301	Pain is seen in the patient's behavior					
302	Distraction reduces pain intensity					
303	Non-pharmacological interventions are very effective for mild to moderate pain, not severe pain					
304	The use of placebo is important in determining if the patient is a real pain					
305	Surgical patients usually do experience pain more intense than medical patients					
306	The nurse's personal experience with pain affects the way the nurses manage pain on surgical patients					
307	Observable changes in vital sign can verify a patient's complaint of severe pain					

308	Nurses are the best judges of the patient's pain intensity because they spent 24 hours with the patients					
309	Do you always agree with patients' statements about their pain?					

Part IV: Items to assess practice, Direction: circle your choice.

S.no	Items	Response
401	Do you provide direct nursing care to Post-operative patient patients?	1. Yes 2. No
402	Do you assess for pain for patients who are able to communicate? (If your answer is No please go to item 407	1. Yes 2. No
403	Do you use a pain assessment tool?	1. Yes 2. No
405	If your answer is yes to item 403, Please, name the tool(s) you use? If No go to item 406.	
406	How frequently do you use a pain assessment tool?	1. Always 2. Frequently 3. Occasionally 4. Rarely 5. Never
408	Are pain scores and management discussed during a nurse-to-nurse report?	1. Yes 2. No

Part 5, Items to assess factors, please circle your answer

501	What Were the barriers that hinder you from Patient pain assessment? You can choose multiple options	1. Nursing workload 2. Lack of pain assessment tool 3. Lack of knowledge on assessment tools 5. Lack of organizational protocols for pain assessment
502	How do you rate the availability of pain drugs in Your Stock?	1. Always available 2. Most of the time 3. Sometimes 4. Not available 5. Not available at all
503	Have you received training related to postoperative pain assessment and management during your professional Development?	1. Yes 2. No
504	Do you have a pain guideline or standard in your unit?	1. Yes 2. No 3. Not sure
505	If yes, how often you read guidelines?	1. Always

		2. Monthly 4. Yearly

Declaration

I, the undersigned, declare that this thesis is my original work, has not been presented by another person in this or any other university and that all sources of materials and references used for this thesis have been duly acknowledged.

Name of student: Hailu Asmare Signature: _____ Date: _____

Date of Submission: _____

This thesis has been submitted with my approval as university advisors.

Name: Miss Heyria Hussen Signature: _____ Date: _____

Name: Dr. Rediate Shimelis Signature: _____Date: _____

ASSURANCE OF PRINCIPAL INVESTIGATOR

The undersigned agrees to accept responsibility for the scientific ethical and technical Conduct of the research project and for provision of required progress reports as Per terms and conditions of the Research Publications Office in effect at the time of Grant is forwarded as the result of this application.

Name of the student: _____

Date._____ Signature _____

Approval of the primary Advisor

Name of the primary advisor:_____

Date._____ Signature _____