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Knowledge, attitudes and practices of nurses regarding to post-operative pain management at hospitals of Arsi zone, Southeast Ethiopia, 2018

Abstract

Background: There is limited evidence on nurses' knowledge, attitude and practice of post operative pain management in Ethiopia. The present study aimed to assess Knowledge, Attitudes and Practices of Nurses Regarding Post-operative Pain Management at Hospitals of Arsi zone, Southeast Ethiopia. There are still inadequacies of knowledge and attitude regarding post-operative pain management practice in the study area.

Methodology: A self reported institutional based quantitative cross-sectional study design was used to collect data from 144 nurses who were providing post operative patient care conducted from 24th April to 12th May 2018. Data was collected by using structured self-administered questionnaire, which was adopted from previous studies to collect the data and verified, coded and entered to Epi Info Software version 3.5.4 and then it exported and analyzed by SPSS version 21 Software for data analysis. Descriptive statistics were used to describe demographic characteristics, level of nurses' knowledge on pain management, attitude towards pain management and their practice and significance of determinant factors were tested using Logistic regression and Odds Ratio & $P < 0.05$ at 95% CI. Binary logistic regressions were used to see the association or the relationship between dependent and independent variables.

Results: Findings of the present study revealed that the majority of nurses who participated in this study had shown good knowledge about pain management (54.86%) but Nurses were questioned to assess their attitude to score 9 questions on a five point Likert scale related to post-operative pain management. The mean score for attitude was 30.62 with standard deviation of 2.681. Respondents who scored more than the mean value were regarded as having Favorable attitude towards post-operative pain management. Nurses who scored less than the mean value were regarded as having unfavorable attitude towards post-operative pain management reveals that (52.1 %) and practice of nurses in post operative pain management were very low (52.1%).Conclusions: As the nurses are the most important parts in the multidisciplinary approach in pain management, their knowledge and attitude make a big difference. So, there is a need for regular in-service training on pain management according to the recommendation of standard.

Keywords: pain management, nurses, knowledge, attitude and practice, postoperative pain

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Background

According to the international association for the study of pain," pain is defined as an unpleasant sensory and emotional experience associated with actual and potential tissue damage.[1,2] Approximately 79% of the hospitalized patients suffer from it. Adequate level of knowledge and positive attitude are essential components in the delivery of post-operative pain management.[3] Patients frequently experience moderate to severe pain in the postoperative period. Although the pain management is an integral and important part of the nursing care, studies suggest that, nursing management of postoperative pain remains inadequate.[4] Untreated and undertreated pain has a significantly interferes with the patient's physical, emotional and spiritual well being, thus can alter the patient's quality of life.[2] A study conducted in Addis Ababa on Assessment of postoperative pain management revealed that the prevalence of moderate to severe postoperative pain was found to be 28.6%. This indicates that Postoperative pain was insufficiently managed in this hospital.[5] The American Society of Anesthesiologists (ASA) defined pain in the postoperative setting as pain that is present in a surgical patient because of a preexisting surgical procedure, or a combination of diseased-related and procedure related resources.[6]

Incidence of postoperative pain (POP) has been reported to be between 47–100%.[7] It has been repeatedly confirmed by studies in the past 3 to 4 decades that 20 to 80% of patients undergoing surgery suffer from inadequately treated pain and pain is classified as a serious public health problem both in the developed and in developing countries.[7] Insufficient education and training for nurses and patients were amongst the issues reported as poor post-operative pain management. Although studies have shown that pain education programs increase nurses' knowledge and improve attitudes towards pain management, the management of post-operative pain by nurses still remains a problem.[3] Research results indicate that the attitudes and knowledge of nurses regarding pain management have significant impacts on treatment and patient care.[6] Numerous studies were done to asses knowledge, attitude and practice of nurses. Mostly what they show were that in general many nurses lack adequate knowledge and had negative attitude in the treatment and practice of post-operative pain.[3,8,9] Therefore, nurses should have a solid foundation of knowledge about post-operative pain management and develop a positive attitude towards it to assess patients' condition and to deliver individualized care to each one so as to reduce discomfort and enhance the quality of life.[7]

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Unrelieved postoperative pain has been shown to increase the rate of postoperative complications (e.g., atelectasis, pneumonia, thrombo embolism, depressed immune function, prolonged hospital stay) and the risk of developing chronic postoperative pain. Numerous studies have revealed that the prevalence of pain remains high in post-operative patients .Unrelieved pain from post-surgery has devastating physiological, psychological, and socio-economic effects.[10] The importance of postoperative pain management has been repeatedly demonstrated in the past two decades. Effective management of post-operative pain can lead to comfort, Better mobility, better recovery, shorter stay in hospital improvement ,Better breathing, Less strain on the heart in mobilization, decreased duration of hospital confinement, reduced hospital costs, and increased level of patient satisfaction.[9] Therefore present study aimed to assess the level of knowledge, attitude and practice of nurses regarding post-operative pain management in public Hospitals of Arsi zone, Southeast Ethiopia.

Methods

Settings

The study was conducted in Oromia region, Arsi zone, Southeast Ethiopia. The study was carried out in a sample of seven hospitals because post operative pain Management care is performed at hospital settings.

Participants and sampling technique

For the present study, all nurses working in the seven public hospitals were summoned to participate in the study. The study population consisted of nurses currently working in the surgical ward, OR, gynecology and obstetrics ward of each hospital. Participating nurses were full-time workers on the permanent staff of the hospitals from different specialties. Nurses with no direct contact with the patients were excluded from the study. All Hospitals in the zone having Operation Theater, Medical, Surgical, obstetrics and gynecology wards and critical care units were included in the study. From a population of seven public hospitals (Asella referral hospital, Bokoji hospital, Robe, Abomsa, Kersa, Bele and Gobesa Hospital) met the inclusion criteria.

Data collection tools

The instrument used to collect the data for this study was adapted from the previous works.[8,11] Some of the items in the existing tools were remove, as they were not relevant in Ethiopia. For the purpose of the current study, some demographic questions were added. The questionnaire was divided into four sections: demographic data, Nurses' knowledge, attitude, and practice in related to post operative pain management. Demographic data included age, marital status, educational level and area of specialty of the nurses. Nurses' knowledge about post operative pain management consisted of 16 statements originating from previously used for Adult patient POP management with 2 options (true and false). Attitude towards nurses' POP management consisted of 9 assessment questions and nurses practice towards POP management Nurses showed their agreement with these barriers using the same 5-point Likert scale (from 'strongly disagree' to 'strongly agree'). An original questionnaire items were subjected to validation process by researchers and expert tutor nurses who assessed the level of completeness, clarity, avoidance of ambiguity and content validity. Consequently, five items were modified as not correctly understood by the evaluator.[8]

Data collection procedure

Data were collected by three BSC nurses who were working at academic area of Arsi University. The nurses at the study sites were inquired for their support in delivering the questionnaires on behalf of the principal investigators. All nurses in the selected hospitals passionately decided to collaborate. With each questionnaire given, a participant information sheet was delivered to describe the study, its purposes and procedures. Nurses who agreed to participate were requested to return the questionnaire folded and fastened to their supervisor nurses within four to five days period. Measures were taken to ensure the quality of the collected data. A detailed explanation about the aims and procedure of the study was given to nurse administrators, head nurses, and charge nurses at participating hospitals. The questionnaire was pretested among six nurses that were not sampled for the study and necessary changes were then made.

Data analysis

Data was verified, coded and entered to Epi Info Software version 3.4.5 and then it was exported and analyzed by SPSS version 21 Software. It was processed by carrying out simple descriptive statistics (mean and standard deviation) and used for quantitative variables and frequency with percentage distribution for categorized variables used to describe demographic characteristics, level of nurses' knowledge and attitude on POP management. Binary and multiple Logistic regressions were computed to evaluate the association. Frequencies and percentages for each item in the knowledge, attitude and practice sections were calculated.

Ethical consideration

Ethical approval was sought and granted by the Research and Ethics Committee at the department of Nursing, School of Nursing and midwifery, College of Health Sciences, Addis Ababa University. Permission to conduct the study was obtained from Arsi zone health office and each hospital involved in the study. All study participants were adequately informed about the purpose, method and anticipated benefit of the study by the data collectors. Written consent was obtained from each participant and confidentiality and anonymity of the study subjects was maintained.

Operational definitions

a. **Level of knowledge:** means the nurses' perception and understanding of post-operative pain management based on experience. This categorize as good knowledge and low knowledge.

b. **Good knowledge:** is the Knowledge Status of nurses when they scored more than the mean.

c. **Low knowledge:** is the Knowledge Status of nurses when they scored less than the mean.

d. **Attitude:** refer to the nurses' behavior and way of acting towards effective pain management. This is categorized as Favorable attitude and Unfavorable attitude.

e. **Favorable attitude:** is the category of nurses when they scored more than the mean value.

f. **Unfavorable attitude:** is the category of nurses when they scored less than the mean value.

g. **Practice:** Means the nurses skill on post-operative pain

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management based on their experience.

h. **Good practice**: is the practice Status of nurses when they scored more than the mean.

i. **Low practice:** is the practice Status of nurses when they scored less than the mean.

j. **Trained:** Nurses who have got at least one training on pain assessment and management either on the job or off the job.[25]

Results

Socio-demographic characteristics of the nurses (n=144)

The questionnaires were administered for a total of 144 nurses working in seven public hospitals in Arsi zone. Structured questionnaires were distributed to both male and female nurses working in postoperative area. Four respondents were excluded from the analysis for gross incompleteness and inconsistency of responses which made a response rate of 90%.of all respondents 78(54.2%)

and 66(45.8%) were male and female respectively. The age range of the participants was between 23 and 45 with the mean age of 30.72years ± 4.749SD. Age category of the respondents' show that 88(61%) were between 20-30 years. Most of the respondents were 77 (53.5%) orthodox Christian by religion. Majority 105 (72.9%) of the respondents were bachelor degree holders. From the total respondents 63 (43.8%) had 2 to 5 years of total work experience and 60(41.7%) had also 2 to 5 years of experience in postoperative area. 44(30.6%) of the respondents were working in obstetric ward.

Knowledge of nurses about post-operative pain management

Participants asked 16 questions to assess their knowledge on post operative pain management majority of the nurses who were participated knew increasing analgesics indicate that the patient is psychologically dependent 88.9% where as 94.4% knew that Pain should be assessed before and after administering pain drugs. And as result 68.1% knew that respiratory depression can occur in patients receiving opioids and 73.6% knew that the side effects of narcotics should be observed at least 20 minute after administration (Table1).

Table 1 Knowledge of nurses about postoperative pain management nurses at Hospitals of Arsi zone, Southeast Ethiopia, 2018.(n=144)

Variables	Yes		No	
	No	%	No	%
1. Increasing analgesics, indicate the patient is psychologically dependent.	128	88.9	16	11.1
2. Paracetamol injection is used in managing surgical pain.	110	76.4	34	23.6
3. cold and heat compress should be used in the management of surgical pain.	109	75.7	35	24.3
4. Opioids analgesics used to relieve pain in surgical patients.	130	90.3	14	9.7
5. Combining analgesics that may result in better pain control with fewer side effects than using a single analgesic agent.	49	34	95	66
6. Pain should be assessed before and after administering pain drugs.	136	94.4	8	5.6
7. Observation is part of the method used in surgical pain assessment.	122	84.7	22	15.3
8. The side effects of narcotics should be observed atleast 20minute after administration.	106	73.6	38	26.4
9. If the source of pain is not known a pain drug should not be used during the pain evaluation period because this could mask the diagnosis.	112	77.8	32	22.2
10. Based on their cultural and spiritual beliefs Patients may think pain.	36	25.2	107	74.8
11. Patients should be encouraged to endure as much pain.	45	31.3	99	68.8
12. Pre-surgery injection such as anesthesia is given for pain management.	105	72.9	392	27.1
13. Respiratory depression rarely occurs in patients who have been receiving stable doses of Opioids over a period of months.	98	68.1	46	31.9
14. Opioids should not be used in patients with a history of substance abuse.	110	76.4	34	23.6
15. Rating scale ranging from (0) "no pain at all to (10) the worst pain" is essential to adopt in pain assessment.	96	66.7	48	33.3
16. If a patient sleeps with no movement postoperatively, this indicates that patient is not in pain.	59	41.3	84	58.7

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The mean score for knowledge was 10.78 with standard deviation of 1.817. Study participants who scored less than the mean value were regarded as low Knowledge, whereas participants who scored more than the mean value were regarded as good Knowledge. From the number of 144 participants, 65(45.1%) had low Knowledge and 79(54.9%) had good knowledge about post-operative pain management.

Among, the 144 respondents' age groups between 20-30 (67%) and 30-40(31.7%) were more knowledgeable on effective post-operative pain management. The two age groups are associated with post-operative pain management (p <0.05). Other variables such as sex, educational level, total work experience, length of work of experience, work unit not associated with knowledge on post-operative pain management. In the adjusted odd ratio, the ages are more likely to be knowledgeable (AOR=1.181, 95% CI 0.493, 2.834) for age between30-40yrs (p<0.05).

Attitude of nurses towards pain management

Attitude of nurses were asked to score 9 questions on a five point Likert scale related to post-operative pain management. The mean score for attitude was 30.62 with standard deviation of 2.681. Respondents who scored more than the mean value were regarded as having Favorable attitude towards post-operative pain management.

Nurses who scored less than the mean value were regarded as having unfavorable attitude towards post-operative pain management. Among the 144 respondents nearly half 75(52.1 %) had unfavorable attitude towards pop management (Table 2). From a total of 144 respondents (nurses) only 69(47.9%) had Favorable attitude towards post-operative pain management as shown in the figure1 below.

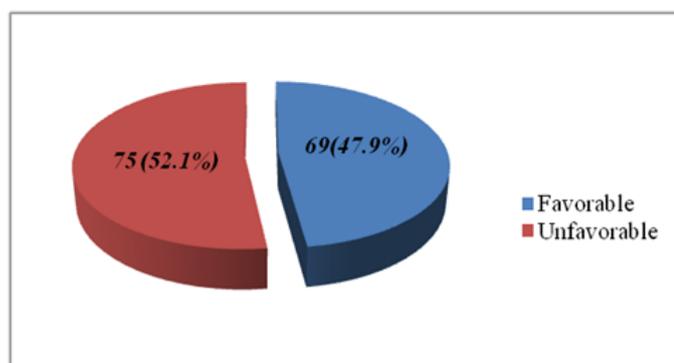## Practice of nurses towards pain management

The mean score for level of practice of post-operative pain management was 4.41with standard deviation of 1.516. Study participants who scored less than the mean value were regarded as low practice, whereas participants who scored more than the mean value were regarded as good practice.Almost half of male group (50.7%) had good practice on post-operative pain management. From age group 20-30 (65.2%) had good practice than other age groups. Nurses with BSc degree in nursing (80%) had low practice. Among the respondents, those who work in surgical (34.7%) had low practice than other units (Table 3). As shown in Table 3 below, majority of the participants reported the following as barriers to pain assessment; nursing workload (23.6%), lack of availability of assessment tools (47.2%), lack of education on assessment tools (16 %), lack of familiarity with tools (3.5%), lack of protocols and guidelines on pain assessment and management (8.3%) and no designing area for charting (1.4%).

Table 2 Attitude of Nurses towards pain management (n=144)

Variable	SA	A	U	NA	SD	Mean
1. Pain is seen in the patient's behavior.	37(25.7%)	94(65.3%)	2(1.4%)	9(6.3%)	2(1.4%)	1.92
2. Distraction reduces pain intensity.	9(6.3%)	85(59.4%)	28(19.6%)	19(13.3%)	2(1.4%)	2.44
3. Non pharmacological interventions are very effective for mild to moderate pain not sever pain.	24(16.7%)	92(63.9%)	11(7.6%)	15(10.4%)	2(1.4%)	2.16
4. The use of placebo is important in determining if the patient is real pain.	22(15.3%)	68(47.2%)	24(16.7%)	27(18.8%)	3(2.1%)	2.45
5. Surgical patients usually do experience pain more intense than medical patients.	31(21.5%)	92(63.9%)	9(6.3%)	9(6.3%)	3(2.1%)	2.03
6. Using pain assessment tool usually make nursing more complicated and consume time for other ward activities.	7(4.9%)	48(33.6%)	26(18.2%)	50(35%)	12(8.4%)	3.08
7. The nurses personal experience with pain affects the way the nurses manage pain on surgical patients.	24(16.7%)	87(60.4%)	16(11.1%)	17(11.8%)	0	2.18
8. Observable changes in vital sign must be relied on to verify patient's complain of severe pain.	35(24.3%)	90(62.5%)	10(6.9%)	6(4.2%)	3(2.1%)	1.97
9. Nurses are best judges of the patient's pain intensity because they spent 24 hours with the patients.	53(36.8%)	77(53.5%)	5(3.5%)	8(5.6%)	1(0.7%)	1.8

Table 3 Practice of Nurses towards pain management (n=144)

	yes		No	
Variables	No	%	No	%
1. Do you provide direct nursing care to POP patients?	122	84.7	22	15.3
2. Do you assess for pain for patient able to communicate? .	123	85.4	21	14.6
3. Do you use a pain assessment tool?	45	31.3	99	68.8
4. How frequent do you use a pain assessment tool?	27	18.8	117	81.3
5. Type of pain relief selected for the patient should be based on the type of surgery.	131	91	13	9
6. Are pain scores and management discussed during nurse-to-nurse report?	87	60.4	57	39.6
7. Do you always agree with patients' statements about their pain?	84	58.7	59	41.3
8. How often you read guidelines?	16	69.6	7	30.4

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Discussion

This study provides important about the level knowledge, attitude and practice in post operative pain management of nurses in public hospitals of oromia region, Arsi zone, Ethiopia. The mean score for knowledge was 10.78 with standard deviation of 1. 817. From the total number of 144 participants, 65 (45.1%) had low level of knowledge about pop management and79 (54.9%) had good level of knowledge about post operative pain management. This finding of was higher than study conducted in Harari (51.7%).[12] This might be due to majority of the participants were bachelor degree.

In this study, nurses correctly answered in relation to paracetamol injection is used in managing surgical pain 76.4% of nurses correctly answered that paracetamol injection is not given IM the management of surgical patients. This finding was higher than study conducted in Addis Ababa, Ethiopia (49.7%).[8] This might be due to educational background and continued education organized by the health institutions. The study found that the nurses have unfavorable attitudes towards post-operative pain management and their patients because majority of them thought that their patients over report their pain and also patients being treated with opioid are at high risk of developing addiction. This shows that the patients are undertreated and suffer for their pain because of those misconceptions of the nurses that patients over report their pain and fearing of the prevalence of favorable attitude in this study was 47.9%. This might be due to lack of awareness towards pop management and personal characteristics of participants. In this study (53.5%) of nurses thought that the most accurate judge of the intensity of the patient was nurses. This finding is lower than study conducted in Asela Hospital (74.8%).[13]

The study also found that nurses have unfavorable attitude towards pain management because majority of them (72.5%) thought that using placebo is important in determining if the patient is in real pain. This shows that the patients are under treated and suffer for their pain because of those misconceptions of the nurses that real pain would not relieve by placebo. This is supported by Bashir A (2015) who found that respondents have negative attitude.[14] In this study 59.4% of respondents agreed that distraction, for example, by the use of music or relaxation, can decrease the perception of pain and this figure was found to be lesser than similar study done in Addis Ababa showed 68.2%.[8]

Figure I Level of attitude of nurses towards pop management at hospitals of Arsi zone southeast Ethiopia, 2018 (n=144).

The study presented that nurses had low level of practices regarding post-operative pain management, presenting by the mean score of (52.1%). Some factors might contribute to low practices on POP management among nurses in this study. Firstly, there was no adequate training continuing and updating education program on pain topic that has proven helpful in increasing skill in the area of POPM. Secondly, it has been revealed that Arsi zone hospitals do not provide pain assessment tool and the nurses lack availability of pain assessment tool. In this study (47.2%) nurses answered lack of availability of pain assessment tool and (62%) of nurses answered that their organization did not have pain guideline or standard. This finding was lower than the study conducted in Addis Ababa.[8]

Concerning training related to POPM this study showed that 38.9% of nurses had training. It indicates that the majority of nurses didn't get training regarding POP assessment and management. It was found similar compared to Addis Ababa and lesser as compared to 69% in Uganda.[15] The present study showed 25.9% of respondents said that pain guideline was available in their organization. This indicates that access of pain guidelines was difficult. But it was higher as compared to a study conducted in Bangladesh 18.3%.[16]

The study found that there was relationship between the gender of the participants (p-value: 0.108) and (p-value: 0.051) for female and male respectively and their level of knowledge. It also revealed that from level of education bachelors (p-value: .008) had association on knowledge of nurses related to POPM. This means that the more nurses increase their levels of education, the more they gain knowledge about patients'' behaviors towards pain management and these findings inform us that knowledge increase through academic education. The study found nurses with current area of work place who are working in recovery and OR had association with (p-value: 0.193) and (p-value:0.207) respectively. These findings are supported by study conducted in Rwanda.[17] The study found that there is no relationship between age category, years of experiences and marital status of the participants and their knowledge related to POPM. The study found that there is relationship between attitude of nurses educational level, post-operative work experience and current area of practice with (p-value: 0.154)(p-value:0.176)(p-value:0.054)respectively related to pain management.[18–27] The study found that there is relationship between educational level (p-value: 0.120) with level of practice on POPM. The other socio-demographic characteristics did not have relationship at all. Therefore, further studies are needed to investigate other factors that may be present so that knowledge and attitudes of the /nurses are translated into practices among nurse.

Conclusion

The result of current study demonstrated that the surveyed nurses knowledge, attitudes and practices of post operative pain management in public hospitals of Arsi zone, Ethiopia. The overall findings on nurses attitude and practices towards postoperative pain management were very low which reveal that the attitude of nurses were unfavorable patients experiencing pain and the use of placebo. The study found that the practices of nurses related to post operative pain management are at low level this is a cause for concern since nurses play a key role in post operative pain management and these, unfavorable attitudinal beliefs and poor practices found in many areas of pain management have impact on the provision of pain management. Several challenges have been identified in this current research by nurses contributing to pain management. Among those challenges, there is no tool for pain assessment and management, shortage of staff that leads to work overload. In addition to this education was seen as contributing factor to nurses towards pain management. As the nurses are the most

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important parts in the multidisciplinary approach in pain management, their knowledge and attitude make a big difference on practice post operative pain management. So, there is a need for regular in-service education on post-operative pain management according to the recommendation of standard.

Authors' Contributions

Teshome H and Bruhalem G conceptualized the paper, searched literature, trained field researchers for data collection and wrote the results and discussion sections. Teshome H. participated in data analysis, interpretation and in critical review of the manuscript for publication. Both authors read and approved the final manuscript.

Acknowledgments

Conflict of Interest

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