

ADDIS ABABA UNIVERSITY
COLLEGE OF HEALTH SCIENCES
SCHOOL OF NURSING AND MIDWIFERY
POSTGRADUATE PROGRAM

ASSESSMENT OF NURSES' KNOWLEDGE, ATTITUDE AND PRACTICE TOWARDS PHARMACOLOGICAL PAIN MANAGEMENT AND ASSOCIATED FACTORS IN ADULT CARE UNIT IN SELECTED PUBLIC HOSPITALS IN WOLAITA ZONE, SOUTH ETHIOPIA, 2021

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A RESEARCH THESIS SUBMITTED TO ADDIS ABABA UNIVERSITY, COLLEGE OF HEALTH SCIENCES, SCHOOL OF NURSING AND MIDWIFERY, NURSING DEPARTMENT, SCHOOL OF NURSING IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR MASTER DEGREE OF IN ADULT HEALTH NURSING

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A RESEARCH THESIS SUBMITTED TO ADDISABABA UNIVERSITY, COLLEGE OF HEALTH SCIENCES, SCHOOL OF NURSING, IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR A MASTERS DEGREE IN ADULT HEALTH NURSING

MAY, 2021

ADDIS ABABA, ETHIOPIA

APPROVAL BY THE BOARD OF EXAMINATION

We, undersigned, Examiners have read, evaluate and attend proposal defense prepared by Badege Melile entitled with “assessment of nurses knowledge, attitude, and practice towards pharmacological pain management and associated factors in adult care units in selected hospitals in Wolaita zone, south Ethiopia, 2021”

This is to verify that his thesis has been accepted in partial fulfillment of the requirements for the masters of degree in adult health nursing

EXAMINER:

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LISTS OF ACRONYMS AND ABBREVIATION

AAU	Addis Ababa University
AIDS	Acquired Immune Deficiency Syndrome
APS	American Pain Society
ASA	American Society of Anesthesiologists
BSc	Bachelor of Science
CI	Confidence Interval
EOPD	Emergency Outpatient Department
ETB	Ethiopian Birr
IASP	International Association for the Study of Pain
ICU	Intensive Care Unit
KAP	Knowledge Attitude Practice
NSAIDs	Non-Steroidal Anti-Inflammatory Diseases
SSPSS	Statistical Software Package for Social Science

TABLE OF CONTENTS

DECLARATION OF STATEMENT	iii
ACKNOWLEDGEMENTS	iv
LISTS OF ACRONYMS AND ABBREVIATION	v
List of figures	ix
CHAPTER ONE: INTRODUCTION	x
1.1 Background of study	1
1.2 Statement of the problem	3
2.1. Knowledge of nurses towards pain management	5
2.2. Attitudes of nurses towards pain management	5
2.3. Practice of nurses towards pain management	8
2.4. Associated factors of knowledge, attitude and practice towards pain management	9
2.4.1. Socio-demographic factors:	9
2.4.2. Health care-related factors	11
2.4.3. Organizational related factors	12
2.4.4. Patient- related factors	13
2.4.5. Justification of the study	14
2.5. Significance of the study	14
2.6. Conceptual framework	15
CHAPTER THREE: OBJECTIVE	16
3.1. General objective	16
3.2. Specific objectives	16
CHAPTER FOUR: MATERIALS AND METHODS	17
4.1. Description of Study area and period	17
4.2. Study design	17

4.3.	Source and study population	17
4.3.1.	Source population	17
4.3.2.	Study population	17
4.4.	Eligibility criteria	17
4.4.1	Inclusive criteria	17
4.5	Sample size and determination	18
4.5.1	Sample size	18
4.5.2	Sampling technique and procedure	19
4.6	Study variables	21
4.6.1	Dependent variables	21
4.6.2	Independent variables	21
4.7	Operational definition of terms	21
4.8	Data collection instrument	22
4.9	Data collection procedures	23
4.10	Data quality assurance procedure	23
4.11	Data processing and analysis	24
4.12	Ethical considerations	24
4.13	DISSEMINATION OF RESULTS:	24
5.	ANNEXES	49
8.1	ANNEX A: INFORMATION SHEET	49
8.2	ANNEX B: CONSENT FORM	51
8.3	ANNEX C: ENGLISH VERSION QUESTIONNAIRE	52

List of Tables

Table 1: Shows Socio- demographic characteristics of study participants in Selected Public Hospitals in Wolaita Zone, South Ethiopia, 2021	25
Table 2: Shows knowledge status of study participants in Selected Public Hospitals in Wolaita Zone, South Ethiopia, 2021	26
Table 3 : Shows attitude of nurses towards pain management of study participants in Selected Public Hospitals in Wolaita Zone, South Ethiopia, 2021	29
Table 4: Shows nurses practice in Selected Public Hospitals in Wolaita Zone, South Ethiopia, 2021	31
Table 5: Socio-demographic and other determinant Variables on knowledge of nurses for pain management for adults in Selected Public Hospitals in Wolaita Zone, South Ethiopia, 2021.	33
Table 6: Socio demographic and other determinant Variables on attitude of nurses for pain management for adults in Selected Public Hospitals in Wolaita Zone, South Ethiopia, 2021.	35
Table 7: Socio demographic and other determinant Variables on practice of nurses for pain management for adults in Selected Public Hospitals in Wolaita Zone, South Ethiopia, 2021.	36

List of figures

Figure 1 : Conceptual framework for Assessment of Nurse’s Knowledge, Attitude and Practice towards Pharmacological Pain Management and Associated Factors in Adult Care Unit in Selected Public Hospitals in Wolaita Zone, South Ethiopia, 2021	15
Figure 2: Schematic presentation of sampling procedure to assess Nurses` knowledge, attitude, and practice and associated factors towards pharmacological pain management in a selected public hospital in Wolaita Zone Hospitals [22].....	20
Figure 3: Shows level of nurses knowledge in Selected Public Hospitals in Wolaita Zone, South Ethiopia, 2021	28
Figure 4: Shows the level of nurses attitude in Selected Public Hospitals in Wolaita Zone, South Ethiopia, 2021	30
Figure 5: Shows the level of nurses practice in Selected Public Hospitals in Wolaita Zone, South Ethiopia, 2021	32

ABSTRACT

Effective pain management requires precise knowledge, attitude and competent assessment skills. Nurses should have basic knowledge and develop a positive attitude towards pain management. Little is known about the knowledge and there is no evidence to understand the attitude gaps and nurses' practices of pharmacological pain management by nurses working in South nation nationality people regional state of Wolaita Zone Hospitals. The aim of this study is to assess nurses' KAP towards Pharmacological pain management and associated factors in adult care units in selected public hospitals in Wolaita Zone South Ethiopia, 2021. A cross-sectional research design was used to conduct this study from Feb -May, 2021; a simple random sampling method was used to select public hospitals of Wolaita Zone. A total of 273 nurses with a response rate (97.8%) participated in the study. Study participants were recruited by simple random sampling and a semi-structured self-administered questionnaire was used to collect data. The collected data were coded and entered into Epi data 4.2.0 and transferred to SPSS version 25 for further analysis. A logistic regression model was used for an association between independent versus out-come variables and considering the AOR, 95% CI and $p < 0.05$ cutoff point as significant for all the independent variables. The findings of this study revealed that slightly more than half of nurses 53.6% who participated in this study had shown good knowledge about pain management. Regarding the attitude of Nurses towards pain management slightly more than half 52.1%) had a positive attitude and nearly half off, 49.4% of nurses had a good practice. Finally, a score of nurses' practice was significantly associated with training, nurse's attitude, assessing patients able to communicate and assessing before & after anti-pain administration. The result of this study showed that nurses had poor practice towards pain management. The hospital's administrative bodies should provide a convenient training program regarding pain and its management to staff nurses.

Keywords: Pharmacological Pain management, nurses, knowledge, Attitude and practice.

CHAPTER ONE: INTRODUCTION

1.1 Background of the study

Number of definitions for Pain, as it is a complex and individual experience, pain is defined as unpleasant sensory and emotional experience associated with actual or potential tissue damage [1] And also it is an individual and subjective experience modulated by physiological, psychological and environmental factors such as previous events, culture, prognosis, coping strategies, fear and anxiety [2]

Pain management is complex due to several causes, including the mechanisms of pain, classification, individualization, lack of commonly accepted guidelines, knowledge, psychological and social factors. Pain management is well known for many decades. It has been improved a lot lately and is starting to involve plenty of diverse methods. Certainly, the management of pain is a multidisciplinary task, the control of pain can be pharmacological and non-pharmacological, or a combination of these two therapies [3].

Pain remains one of the primary reasons for patients to seek emergency medical care, yet despite this it often remains under-acknowledged, -assessed and -treated. Acute pain is of itself very distressing, and if unresolved can lead to complications and, in the longer-term, the generation of chronic pain. Effective and rapid treatment of pain is therefore essential [4].

To prevent unwanted consequences of pain and to improve patients' clinical outcomes. Improving healthcare providers' knowledge in clinical settings is needed and seems to be a crucial step toward optimal pain management.[5] According to the Oxford University Press on Assessment of Pain in older People, Pain management based on medical assessment alone is seen as insufficient and a collaborative multi-disciplinary Team approach is perceived to be essential. However, it is recognized that there is a range of knowledge and attitudes to pain management and that there is a need to improve this by training/education. This should not be restricted solely to initial introductory education, but should be ongoing to ensure that health care professionals understand the factors that influence the best possible assessment for pain management, alongside time and continuity in pain assessment. [6]

An essential aspect of nursing practice is the effective management of acute and chronic (persistent) pain. Since nurses spend much time undertaking direct patient care, they are ideally

placed to assess and manage patients' acute and chronic pain. Nurses also have an important role in ensuring the safe use of analgesics, undertaking regular reviews of the effectiveness of these medicines. In addition, nurses can educate patients on the use of non-pharmacological self-management strategies and refer them to relevant pain management resources. Undertaking these tasks requires a comprehensive knowledge of pain management strategies and guidance [3]

Pain management is the reduction in pain to a level that is tolerable to the client. It includes two basic types of nursing interventions: pharmacologic and non-pharmacologic. Misconceptions and biases can affect pain management. These may involve attitudes of the nurse or the client as well as knowledge deficits. Effective pain management is an important aspect of nursing care to promote healing, prevent complication, reduce suffering and prevent the development of incurable pain state. Pain assessment knowledge is a priority for choosing pain relief measures appropriate for the client. This further highlights the importance of nursing competence in the assessment and management of surgical pain [7].

And also, inadequate pain management has been shown to affect patient outcomes by potentially increasing hospital stay and delaying recovery thus the management of pain has major implications for nursing [8]. The deficit in knowledge about pain assessment and management, inability to assess pain and poor communication between the patient and nurses lead to ineffective pain management and approximately 79% of the hospitalized patients suffer from it.

A combination of pharmacological and non-pharmacological interventions may be used to manage a patient's pain. Management of different types of pain (acute, postoperative, inflammatory, neuropathic or cancer) is the most frequent issue encountered by clinicians and pharmacological therapy is the first line of approach for the treatment of pain.[9]

Health care providers are ones who may hear of pain by the patients and co-operate the advice of the signors and physicians on pain management. The problem becomes worse when nurses do not have adequate KAP to pain management. Therefore, their knowledge, attitude and practice are very important in pharmacological pain management.

1.2 Statement of the problem

Pain is considered be a global health problem and it is the most frequent reason for people seeking health care. [10] Pain is a global concern that needs intervention and support all the health community [11] It is still one of the most challenging prevalent problems. Worldwide, the prevalence of chronic pain reaches up to 30% [12]

In the United States, it was predictable that 126 million American adults stated some pain in the last three months [13].The prevalence of pain was more than 47%, 80%, and 73.5% in Canada, Italy and Jordan respectively. More than 47% reported that they experienced pain [11]. A study was done in Italy, the pain was reported by more than 80% of patients.[14]In Jordan the prevalence of pain experienced by cancer patients is estimated up to 73.3% [5] The study conducted in Ethiopian Tertiary care hospital revealed that more than 91% of patients who had a surgical intervention experienced pain , from that 78% of postoperative patients suffering from pain ranging from moderate to severe intensity[15].

Management of long-lasting pain and the effects of treatment are more challenging. Published instruments indicate that pain assessment might continue to be a challenge. Because pain is such a subjective, personal, and private experience [16]

Pain is misjudged by healthcare providers and this underestimation might lead to poor management which negatively affects patients' outcomes, quality of life, and satisfaction. Mechanisms of pain, classification, individualization, lack of commonly accepted guidelines, knowledge, psychological and social factors [17]. Pain management is well known for many decades. It has been improved a lot lately and is starting to involve plenty of diverse methods. Certainly, the management of pain is a multidisciplinary task, the control of pain can be pharmacological and non-pharmacological, or a combination of these two therapies.

Pharmacological Methods Pain that affects patients' physical function or their quality of life should be recognized as a major problem. Elderly, cancer, postoperative, and traumatic patients with functional impairment or diminished quality of life are ideal candidates for pharmacological therapy. However, the intervention decision either to be pharmacologic or non-pharmacologic is based on a cautious weighing of risks and benefits [18].

According to the Centers for Disease Control and Prevention Statistics indication, about 43 million patients in the United States experience acute postoperative pain, with pain intensities of

moderate to severe reported by 80% of these patients. The self-report of pain is the gold standard of pain assessment given the subjective nature of pain [24]

In Ethiopia, a study among nurses in 23 health institutions in Western Ethiopia shown that there was a knowledge gap ($x=49.8\%$) among health care providers about pain management of patients. [20]. And also, a prospective longitudinal study in Ethiopia nurses revealed 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 [21].

Unfortunately, the treatment of pain is highly inadequate in Ethiopia because of social stigma about pain, fears of addiction, and inadequate clinician knowledge about the best ways to manage pain. Although clinician knowledge about pain is known to be insufficient, studies are lacking that identify whether improving knowledge, attitudes and practice about pain can influence outcomes [22]

To have awareness, 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 pharmacological pain management (30). This study will assess the current nurses' knowledge, attitudes and regarding pharmacological pain management and identify associated factors to achieve optimal pharmacological pain management. Studies suggest insufficient pain treatment and poor practice and an unfavourable attitude regarding pain(32). Therefore, the aim of this study is to assess nurses' knowledge, attitudes and practice toward pharmacological pain management and associated factors in Public hospitals found in Wolaita zone, South Nation Nationality People Region.

CHAPTER TWO: LITERATURE REVIEW

This literature review is used for the purpose to gather information from previous researches conducted in nurse's knowledge, attitudes and practices regarding pain management and factors related to it [23].

2.1. Knowledge of nurses towards pain management

The study conducted in Turkey revealed that nurses had insufficient knowledge on pain management with a mean score ($x=39.65\%$) [25]. The study of the Saudi Journal of Anesthesia association on Knowledge revealed that it was found that nurses were weak in the pharmacological interventions concerning appropriate selection, dosing, and converting between different types of opioids [26].

In the study done in a Kenya hospital on nurses, significant knowledge deficiencies with a mean score of 47.2% exist regarding pain assessment [19]. In the contrary, the study conducted in Ghana revealed that the KAP of nurses, total mean knowledge score was 59%. The majority of the respondents (79.1%) had inadequate knowledge, while (20.9%) had adequate knowledge of postoperative pain management [27].

A cross-sectional study conducted at the University of Gondar Hospital showed that a total of 411 study participants were involved in this study. The magnitude of knowledge towards pain management among nurses was 66.9% with a mean score of 7.14 (1.74 SD). The magnitude of favorable knowledge towards pain management among nurses was 51.7% with a mean score of 49.33 (7.13 SD). An institutional-based cross-sectional study conducted in the University of Gondar Hospital revealed that, had an attitude and a lower level of attitude towards pain management than those reported in previous studies. Thus, the situation demands various educational and quality improvement initiatives that could enhance the nurse's knowledge and attitude in the area of pain management. Pain is a nursing-sensitive indicator; therefore, nurses have a pivotal role in the assessment and management of pain [28].

A cross-sectional study in Mekelle public hospital revealed nearly half (48.2%) of the participants answered that nurses provide the most accurate rating whereas only (6.4%) relatives scored the least to accurately rate pain intensity and manage pain. About 88.8% of respondent knew that frequently assessing and documenting pain is important whereas 11.2% responded not

important for patients who are able to communicate. The majority of participants knew the importance of pain management among; post-operative patients (91.2%), medical (81.7%), patients with trauma (90.4%). But more than half of the participants (66.9%) did not know how to manage pain for patients with Glasgow Coma Scale. About 58.6% had adequate knowledge about pain management. The Nurse-perceived severity of the case was expressed by the triage color code related to pain-intensity assessment. Pain is the major symptom that brings patients to the healthcare setting and is also the commonest symptom that hospitalized patients encounter in general and in surgical settings in the particular area[29].

In the study conducted in Hawassa University Referral Hospital towards, nurses' knowledge towards pain assessment and management related questionnaires showed that only (35.9%) participants had good knowledge. However, (14.1%) participants had poor knowledge. Additionally, 92 (50%) participants had moderate knowledge [30].

The study conducted in the Gondar University Hospital also showed, (69.5%) of study subjects answered wrongly as it may not often be useful to give a placebo to a patient in pain to assess if he is genuinely in pain. (58.7%) study participants responded that patients having prolonged pain always need high dosages of pain medication than patients with acute pain. More than half, (58.7%), of study participants, were answered *that* the preferred route of administration of narcotic pain relievers to patients with pain is not intramuscular [31].

Institutional Based Cross-sectional Study in Wolaita Sodo University Teaching Referral Hospital, nurses have good knowledge related to postoperative pain management, but they are poor in opioid-related side effect and deficiencies concerning postoperative pain management through providing pharmacological and non-pharmacological pain management and the study found that 142(94%) of participants knew that appropriate assessment of pain is the priority for effective pain management in the postoperative period, and (92%) knew that the most side effect of opioids (morphine) is respiratory depression. Only (48.67%) knew that side effects of opioids should be assessed at least (20-30 min) after administration [32].

2.2. Attitudes of nurses towards pain management

Attitude in nursing is can be affected by multi-dimension. European Journal of Experimental Biology report showed that Fifty-three (77.9%) respondents agreed that pharmacological methods, Opioids analgesics such as pethidine and Pentazocine are used to relieve pain in surgical patients (22.1%) disagreed with this statement. Sixty-five (95.8%) of the respondents agreed that analgesic such as paracetamol injection is used in managing surgical pain, while (4.2%) respondents disagreed. Lastly, the result showed that (70.6%) respondents agreed that pre-surgery. Injection such as anesthesia is given for pain management, while (29.4%) disagreed with the statement [33].

The study revealed in the Saudi journal of Anesthesia association on Knowledge and attitudes of nurses toward pain management around 15.4% of the nurses failed to recognize the presence of pain because the vital signs were normal and that patients showed relaxed facial expressions. Around 15.4% of the nurses were not able to decide on which morphine dose to be used (8.9%). Only 20% of nurses agreed that patients can sleep in spite of the presence of pain. Around 78.9% of the nurses agreed that the patient is the only reliable source in reporting pain [34]

According to the study done in Iran shows that Attendance nurses in courses related to pain management and its management Among participants, 62.4% incorrectly believed that opioids were not good drugs and that it was better for patients to tolerate pain as much as possible and 86.0% of nurses incorrectly believed that the use of a placebo was a useful test for determining the existence of pain. Even though 9.3% believed that they had received adequate education about pain [26]

According to the study conducted in Ghana, the hospital showed, most nurses who had below 5 years of surgical nursing experience approved that effective analgesia was an essential part of postoperative management. From respondents 141 (83.9%) reported that lack of pain expression did not mean lack of pain. With regard to whether their visual assessment of the patient reporting pain influenced their responses and treatment of Pain, 127 (75.6%) responded they agreed while the remaining either disagreed or were indifferent. Another issue that respondents claimed to have influenced them was the type of surgery done. Here, 120 (71.4%) of the nurses said that they responded to pain depending on the type of surgery performed. pain anticipation in all surgical procedures before assessing and treating pain, the use of measurement instruments,

patient's spiritual beliefs, analgesic opioids should not be administered to patients with a history of substance abuse, and patient's right to expect total POP relief as a consequence of treatment. [35]

Accordingly, Addis Ababa private and public hospitals study, more than half, 53.7%, of the nurses' have a negative attitude, while 46.3% had a positive attitude towards cancer pain management. Over half (68.3%) of the respondents agree and strongly agree that opioids should not be given for the patient with a history of substance abuse, and (64.4%) of nurses believed that placebo is a useful test to determine if the pain is real. In addition, (54.9%) of nurses agreed that patient should be encouraged to endure pain before taking pain management measure to relieve their pain. 41.5% of nurses disagree and strongly disagree that the first assessor of the intensity of the patients' pain is the patients themselves (36).

A cross-sectional study conducted in the University Gondar hospital revealed that the magnitude of favorable attitude towards pain management among nurses was 51.7% with a mean score of 49.33 (7.13 SD). And the study revealed that nurses working at the University of Gondar hospital had good knowledge and a lower level of attitude towards pain management than those reported in previous studies [31].

2.3. The practice of nurses towards pain management

In the cross-sectional study conducted 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 practised in pain management at the moderate (37.9%), high (21.8%), and very high level (16.1%)[37]

An observational study Cagliari, Italy revealed that Triage nurses did not evaluate pain intensity in 48.5% of white-coded (no urgency) and 36.2% of green-coded (minor urgency) patients, while they missed this estimation in only 19.6% of yellow-coded (delayed urgency), and no red-coded patients (emergency). In the vast majority of cases, 89.2%, nurses implicitly associated pain-assessment priority with urgency for ED admission. Nurses did not inform physicians about patients' pain in 84.1% of cases, and they never managed pain autonomously during triage. Only 38.5% of patients received analgesia within 60 minutes after triage [38].

The cross-sectional studies in Ghana hospital concerning management interventions revealed that the majority (97.6%) of the nurses said they provided a clean, calm, and well-ventilated ward environment postoperatively. Another highly effective intervention used by the nurses was the encouragement of early ambulation/exercise with analgesia. Here, as many as 97.0% claimed to have used this measure. About 73% and 25.6% of the respondents reported that they usually dressed, bandaged, splinted, and reinforced wound sites postoperatively [35].

Also, a study conducted in Arsi zone hospital southeast Ethiopia shows that the practice of nurses regarding in pain management indicated that, Nurses with a BSc degree in nursing (80%) had low practice concerning post-operative pain management [39].

Institutional Based Cross-sectional Study in Wolaita Sodo University Teaching Referral Hospital revealed on Practice of Nurses towards Pain Management, that 74(49.33%) respondents documented the findings after pain assessment. This indicates that documentation of the findings of Pain assessment and management outcomes was poor [32].

2.4. Associated factors of knowledge, attitude and practice towards painmanagement

Different studies on Nurses' knowledge, attitude and practice towards pharmacological pain management and associated factors show that Socio-demographic factors, Health care related factors, Organizational related factors and patient related factors. Some of the literatures about factors associated with nurse's knowledge, attitude and practice regarding pharmacological pain management are found below.

2.4.1. Socio-demographic factors:

A correlational study in Billings, State University, and Bozeman, Montana revealed Association of Critical-Care Nurses certifications listed on the survey, eight types of certified nurses were represented. certified nurse, and receiving pain education in the last year were predictive of a higher score on the KAP survey, which explained only 9.8% of the variance and receiving pain education in the last year (which primarily included pain resource nurses) were predictive of a higher score on the KAP Survey. Nursing unit, highest nursing degree, personal experience of pain, average pain, family history of chronic pain, and gender lacked significant differences in KAP survey scores. There is no significant association between sex, age on postoperative

management practice. the study found that the practices of nurses related to POPM pain are at low level and poor practices found in many key areas of pain management have impact on the provision of effective pain management and optimal care given to surgical patients. In predicting a KAP score through the model, investigators began at a raw score of 65% and added 3.2% if the nurse had more than 5 years of experience, 3.9% if the nurse was certified, and 2.8% if the nurse had received education about pain in the past year. This near 10% differential in the predictive model accounted for the wide variation in pain scores from the sample [40].

The study which is conducted in Malaysia in Utara University on pain management practice by nurses: An Application of the Knowledge, Attitude and Practice, shows that from the total of 160 nurses the majority of nurses had never attended pain management training (73.3 %). Finally, most of the nurses mentioned that they had a painful experience in their life (78.9 %). [22]

According to the study conducted in Ghana district hospital revealed , most nurses had below 5 years of surgical nursing experience they agreed that effective analgesia was an essential part of postoperative management. From respondents 141 (83.9%) reported that lack of pain expression did not mean lack of pain [35].

Furthermore, the International Journal of Africa Nursing Sciences on Rwanda Hospital indicated, all the nurses (131 (100%)) reported that they had used international or national tools in assessing pain. The majority of the nurses (104 (79%)) reported that they had adequate knowledge of immediate post-surgery pain management. A slightly above average (67 (51%)) number of the nurses perceived the level of pain management in the surgical ward to be effective. Seventy-five (57%) of the nurses reported that they had adequate knowledge of the tools used in pain management [41].

In a Cross-Sectional Multicenter Study in DebreBerhan University, among 433 nurses were, (90.6%) had a bachelor's degree of work experience of between 1 to 5 years (58.5%). About 76 (19.2%) respondents got access to read journals and 66 (16.7%) had taken training regarding postoperative pain management. The results showed that 56.5% [95% CI= (51.6–61.3)] respondents had adequate knowledge and 8.9% [95% CI= (6.1–11.6)] of them had positive attitudes towards Pain management. Higher level of education [AOR=8.2; CI= (2.51–26.83)], getting access to read journals [AOR =1.83; CI= (1.01–3.30)], and taking POP management

training [AOR=8.63; CI= (3.67–20.28)] were statistically associated with adequate knowledge [42].

2.4.2. Healthcare-related factors

According to the British journal of nursing, report Patients have a right to pain relief; however, the barriers to assessing and managing patient pain in practice have not as yet been overcome [43]. A cross-sectional study was conducted in two tertiary care hospital in Granada Spain, Results from 183 participants with a mean age of 49 (SD=17.33) revealed that pain was their main reason for hospitalization (71.6% of the cases). Numeric pain scores were recorded only in 14.2% of the patient medical files. Pain intensity documentation by healthcare professionals was found in 41.5% of the cases, and 7.7% of the patients had to wait for more than 30 minutes before getting the pain medication. Around 85% of the patients were satisfied with their pain management. Patients' barriers to effective pain therapy were mainly fear of adverse effects, addiction, and additional costs ($p < 0.05$). [44]

According to the International Journal of Africa Nursing Sciences on Rwanda Hospital, the majority of the nurses (83%) reported receiving no support to improve their knowledge on post-operative management. Seventy-five (57%) nurses reported negative on changes of post-surgery pain management. Eighty-five (65%) of the nurses reported that post-surgery pain management was at a good level. One hundred and one (77%) nurses correctly highlighted that older patients cannot tolerate opioids for pain relief. Seventy-seven (59%) nurses indicated incorrectly that giving patient water for injection was not a useful test for pain reality [41]

A cross-sectional study on nurses in Addis Ababa public and private hospitals discovered below satisfactory (33.3%). The majority, 50 (61%), of nurses included in this study did not use a standard pain assessment tool to assess the severity of pain for cancer patients while standardized guidelines recommend using those assessment tools to verify the progress of pain [36]

According to Jimma University study on nurses showed that, lack of empathy and lack of education as barriers to pain management. And also, failure to use pain rating scales in clinical practice to assess patient's pain intensity and the fear of side effects and dependence. Lack of information about pain and its management during medical education was stated that most of HCPs measured pain subjectively and mentioned using patient's facial expressions and general condition, instead of using a standard pain rating scale [21]

2.4.3. Organizational related factors.

The study conducted in Rwanda revealed that, Forty-six per cent of participants (N = 131) had training in acute pain management, 56% used a pain protocol, and 74% used pain scales. Tramadol (78%), morphine (79%), and paracetamol (7%) were used most often to treat pain. Drug availability was the most frequently reported barrier to treating pain. [46]. Barriers also associated with 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 were strongly associated pain assessment & management. [39]

According to the study done Asella Teaching and Referral Hospital in South East Ethiopia revealed that, Barriers to pain assessment & management included lack of training on assessment tools (92.6%), lack of availability of assessment tools (84.3%), lack of protocols and guidelines (68.8) and poor documentation of pain assessment (56.4%). [45]

According to the study conducted in Public Hospitals Jimma Zone Oromia Region, South west Ethiopia, on nurse's pain management competency showed that out of One hundred eighty eight (63.1%) nurses have taken pre-service training. Only 138 (46.3%) of respondents reported that they attended in-service training in the last six months. One hundred eighty-eight (63.1%) nurses read book or journal on pain management and applied the knowledge they gained on pain management [21].

With regard to whether their visual assessment of the patient reporting pain predisposed their responses and treatment of POP, 127 (75.6%) responded they agreed while the remaining either disagreed or were indifferent. Another issue that respondents claimed to have influenced them was the type of surgery done. Here, 120 (71.4%) of the nurses said that they responded to pain depending on the type of surgery performed. Pain anticipation in all surgical procedures before

assessing and treating pain, the use of measurement instruments, patient's spiritual beliefs, and analgesic opioids should not be administered to patients with a history of substance abuse, and patient's right to expect total POP relief as a consequence of treatment. [31]

In the study unavailability of sufficient pain medication in the ward, lack of protocol, and poor communication pain assessment were the three highest barriers perceived by nurses in postoperative pain management practice [32]

2.4.4. Patient-related factors

A study conducted in Canada shows, Negative patient attitudes and beliefs concerning pain medication and lack of patient involvement in care were particularly common. Inadequate patient communication, to the health professional, of pain experiences, was highlighted and was significantly associated with pain management.[47]

The study conducted in three, public hospitals in Ethiopia revealed that, patients perception towards pain, anti-pain analgesics and coping mechanisms of pain were rather than asking for relief and Some patients did not believe that analgesics were any help in healing, they perceived that it would only take away the pain but would not cure the disease. Even they preferred to tolerate and deal with severe pain rather than use analgesics. So this lack of awareness and perception about pain and analgesics significantly associated with pain management. [48].

2.4.5. Justification of the study

A nurse is a key person who can improve the quality of pain management and who can provide nursing care to sufficiently meet the patient's needs. This might be inadequate assessment and treatments of pain continue to be an issue in the care provided in the healthcare system in Ethiopia. Nurses who have adequate knowledge, attitude and practice had better pain management, good outcomes, and higher patient satisfaction scores. The objective of this research is to assess the Nurses' knowledge, attitude, and practice and associated factors towards pharmacological pain management. According to my limited knowledge, there is limited study on Nurse's Knowledge, attitude and practice and associated factors on pharmacological pain management in Ethiopia [21, 31, and 36].

So, this study will contribute to filling the gaps for the Assessment of Nurse's Knowledge attitude and practice towards pharmacological Pain Management and Associated Factors. [24, 25, 26]

2.5. Significance of the study

Relevant studies contribute platform to others for their seeking to get reliable and accurate information. In Ethiopia as well as in South Nation Nationality People Region State, little is recognized about the burden of unrecognized and undertreated patient pain management. Inadequate knowledge, attitude and pain management has been shown to affect patient outcomes by potentially increasing hospital stay and delaying recovery thus the management of pain has major nursing implications.

Managing pain effectively is an important aspect of nursing care to promote healing, prevent complication, reduce suffering and prevent the development of incurable pain state. Pain assessment knowledge is a priority for choosing pain relief measures appropriate for the client.[25] So this study will give information to fill the gap for health care providers policymakers and researchers to use it as baseline data for further development about nurses knowledge, attitude and practice in pharmacological pain management and its associated factors.

2.6. Conceptual framework

This conceptual framework shows the effect of independent variables (Socio-demographic factors, Healthcare-related factors, Organizational related factors and patient-related factors) on the dependent variable (KAP). (Source: adopt and modified from Pain Management Practices by Nurses: Malaysia)[22]

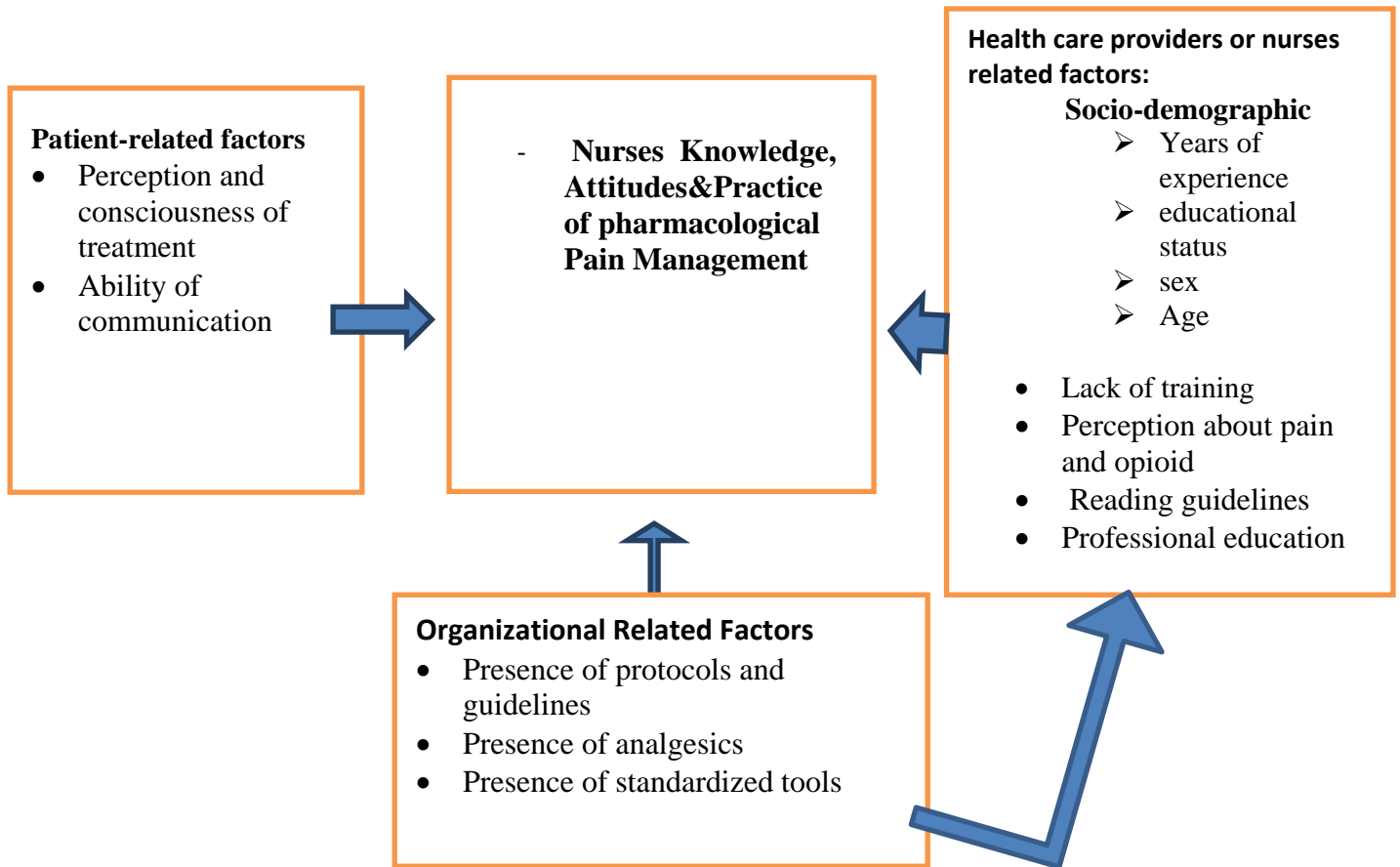


Figure 1 : Conceptual framework for Assessment of Nurse’s Knowledge, Attitude and Practice towards Pharmacological Pain Management and Associated Factors in Adult Care Unit in Selected Public Hospitals in Wolaita Zone, South Ethiopia, 2021

CHAPTER THREE: OBJECTIVE

3.1. General objective

To assess Nurses' knowledge, attitude and practice towards pharmacological pain management and associated factors in adult care units in selected public hospitals in Wolaita zone South Ethiopia, 2021

3.2. Specific objectives

- To assess Nurse level of knowledge towards pharmacological pain management in adult care units in selected public hospitals Wolaita zone, Ethiopia,2021
- To identify nurses' level of attitude towards pharmacological pain management in adult care units in selected public hospitals Wolaita zone, Ethiopia,2021
- To assess Nurses level of practice towards pharmacological pain management in adult care units in selected public hospitals Wolaita zone, Ethiopia,2021
- To determine factors associated with knowledge, attitude and practice towards pharmacological pain management in selected public hospitals Wolaita Zone, Ethiopia,2021

CHAPTER FOUR: MATERIALS AND METHODS

4.1. Description of Study area and period

The study was conducted in south nation nationality and people region, Wolaita zone Hospitals. Wolaita zone is one of the 19 zones of SNNPR. Wolaita Sodo, the city of the zone, is located 165 KMs from Hawassa, the regional capital and 327 KMs far from Addis Ababa. Zonal total surface area is 2,825 square KMs; it encompasses all types of climate, Dega, woynadega and kola, the total population of the zone is around 2.4 million, with 49.4% of it female and 50.6% male population. There are 12 rural and 3 Urban Woreda with a total of 345 Kebeles. In Wolaita Sodo town, there are three hospitals, one belongs to the government and the other two are private Hospitals.

The remaining 7 public hospitals are out of SodoTown 10 private clinics, 67 health centre and 342 health post. The hospitals provide services such as Outpatient treatment, Emergency treatment, surgery, delivery, laboratory, pharmacy. The total nursing staff in hospitals are 596 and from this 290 nurses in the adult care unit.

The study was carried out in from Feb-March/2021.

4.2. Study design

An institution-based cross-sectional study design was conducted.

4.3. Source and study population

4.3.1. Source population

The source population for this study was all nurses working in hospitals of Wolaita zone.

4.3.2. Study population

The study population for this study was all selected nurses working in the adult health care unit, Wolaita zone Hospitals.

4.4. Eligibility criteria

4.4.1 Inclusive criteria

- All nurses who are working in the adult care unit (medical, surgical ward, Triage EOPD, ICU,) in selected hospitals and available during the data collections period.
- All nurses currently working in the adult health care unit for a minimum of six months [24]

4.4.2 Exclusive criteria

- Those on annual leave, maternity leave and sick leave who severely ill at the time of data collection were excluded from the study.

4.5 Sample size and determination

4.5.1 Sample size

Single population proportion formula was employed by taking the following into consideration $p(51.7\%)$ from the previous study done in Gondar specialized hospital, the margin of error of 5%, nonresponse rate will be 10% and by assuming confidence level of 95%

$$n = z^2 p (1-p) / d^2$$

Where

$Z_{\alpha/2}$ - is the standard normal distribution at $1-\alpha\%$ confidence interval (95%=1.96)

P = Estimated proportion (51.7%)

d = the margin of sampling error tolerated (5%)

10% = Non response rate

Therefore, our sample size to be;

$$n = (1.96)^2 0.517(1-0.517) / (0.05)^2$$

$$n = 383$$

Since the source population size is less than 10,000 the correction formula was used. It was calculated as follows:

$$n_f = n_i / (1 + (n_i/N))$$

$$= 383 / (1 + 383/290) = 383 / (1 + 1.32) = 383 / 2.32 = 165$$

Since this study uses a multi-stage sampling technique, the total sample size was multiplied by the design effect of 1.5 which means that $165 * 1.5 = 247$

Assuming 10% of non-response rate the total sample size obtained was 273. So from the total of 290 nurses, 273 HCWS were selected proportionally for the study.

$$= 247 + 25 \text{ (with non-response rate)} = 273 \text{ is final sample size.}$$

Where: N= total number of nurses in selected hospitals

n_f = final sample size

n_i = initial sample size

4.5.2 Sampling technique and procedure

From the total of eight hospitals found in Wolaita Zone, six hospitals were selected by using a simple random sampling technique. From all nurses working in adult care unit in selected hospitals, study participants will be included by using a simple random sampling technique. The sample size was proportionally allocated based on the number of nurses working in adult care unit in selected hospitals. Each study participant was selected by using a simple random sampling technique after obtaining a list of adult care unit staff from each hospital.

The total number of nurses in adult care unit in six selected hospital = 290

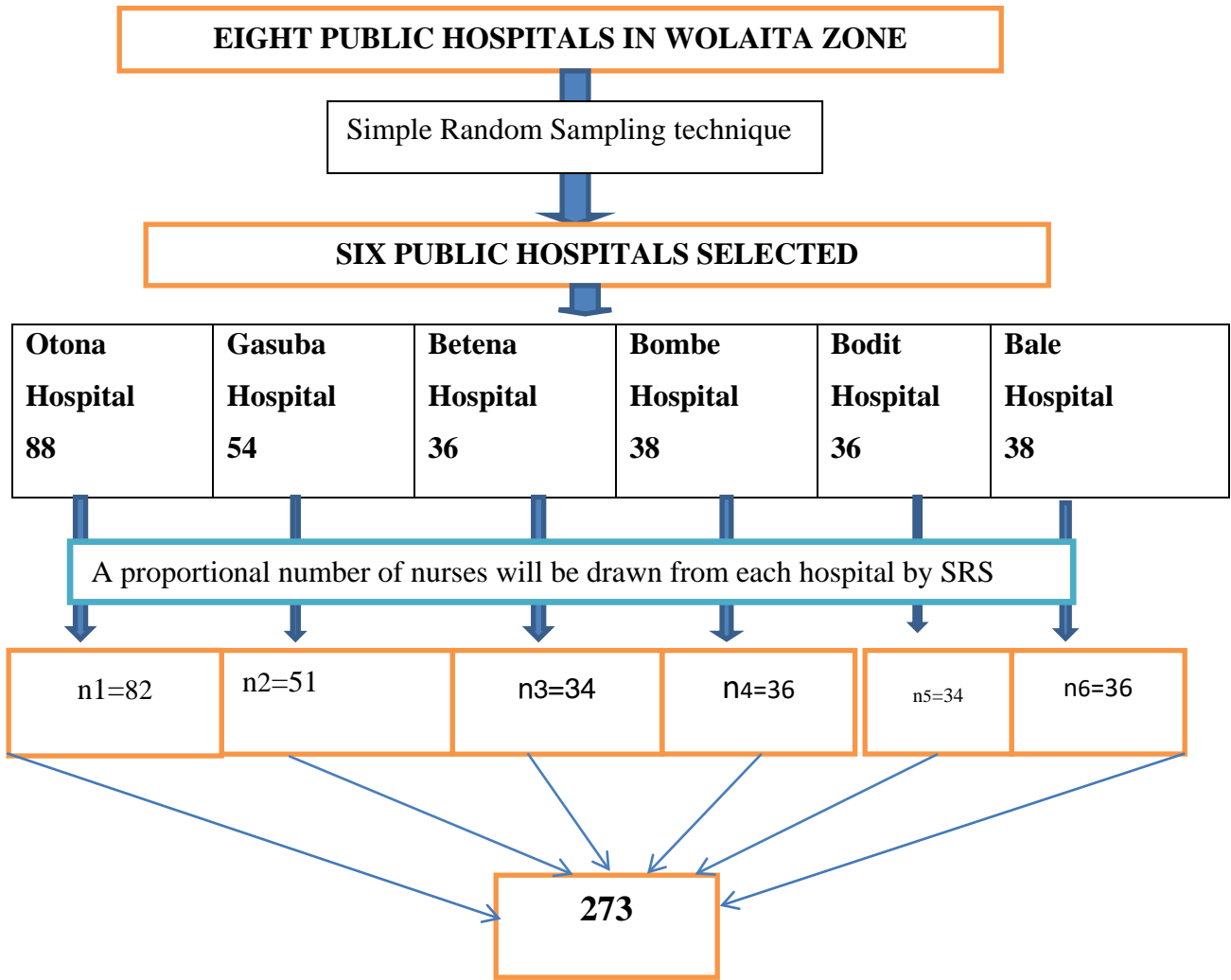


Figure 2: Schematic presentation of sampling procedure to assess Nurses` knowledge, attitude, and practice and associated factors towards pharmacological pain management in a selected public hospital in Wolaita Zone Hospitals [22]

4.6 Study variables

4.6.1 Dependent variables

- Knowledge towards pain management
- Attitude towards pain management and
- practices towards pain management

4.6.2 Independent variables

- **Scio-demographic characteristics:** Age, sex, level of education, Years of working experience, training for pain management.
- **Patient-related factors:** Ability of communication, Level of consciousness, Treatment perception
- **Health care provider related factors:** lack of adequate training, lack of experience and inability to communicate with other nurses, reading guideline, biased perception of analgesics and continuous professional education
- **Organizational factors:** Presence of protocols and guidelines, Presence of analgesics and Presence of standardized tools.

4.7 Operational definition of terms

Pain management: Pain management is the relief of pain or reduction in pain to a level that is acceptable to the client.

Knowledge: means the nurses' perception and understanding of pharmacological pain management based on experience. This categorizes as good knowledge and poor knowledge.

[29]

- **Good knowledge:** participants whose knowledge scores above or equal to the mean score will be classified as good knowledge.

- **Poor knowledge:** participants whose knowledge scores below the mean score will be classified as poor knowledge

Attitude: refer to the nurses' behavior and way of acting towards effective pain management. These are categorized as positive attitudes and Negative attitudes [31].

- **Positive attitudes:** participants whose attitude scores above or equal to the mean score will be classified as a positive attitude
- **Negative attitudes:** participants whose attitude scores below the mean score will be classified as a negative attitude

Practice Nurses' activities pharmacological pain management. This is categorized as good practice and poor practice. [32]

- **Good practice: participants** whose practice scores above or equal to the mean score will be classified as good practice
- **Poor practice:** participants whose practice scores below the mean score will be classified as poor practice

4.8 Data collection instrument

Data were collected by using a self-administered structured questionnaire that is adapted and modified from a questionnaire developed by a previously published article [42]. The questionnaire contained 53 questions arranged into five sections. The first section was socio-demographic data of nurses which contain items age, sex, marital status professional experience, and qualifications contain 9 questions. The second section focused on the nurses' knowledge part which contains 16 questions, yes or no and multiple choices on pharmacological pain management. The sum score will be classified into 2 levels (good and poor knowledge).

The third section focused on the nurses' attitude towards pharmacological pain management which contains 11 questions and the sum score was classified into 2 levels (positive attitude and Negative attitude). The 5 Likert scales was employed to assess the attitude of nurses toward pharmacological pain management. (Strongly disagree=1, Disagree=2, Uncertain=3 Agree=4 and Strongly Agree=5). The fourth was focus on nurse's practice towards pharmacological pain

management which contains 8 questions and the sum score was classified into 2 levels (good practice and poor practice and the fifth section is on factors affecting KAP questionnaire which contains 12 questions.

4.9 Data collection procedures

The data collection tools have been developed appropriately to address the study objectives. After adopting the final version of the questionnaire, the questionnaire was distributed for each participant in the form of a hard copy; investigators have observed the practical part by the following checklist. Data were collected from study participants using a standardized self-administered questionnaire. Four B.Sc. Nurses and two B.Sc. Students and three supervisors (B.Sc.) were involved during the data collection and one-day training was given before the actual data collection begins for data collection procedure, clarification on questionnaires and approach to the participants. The questionnaire was in hand-delivered to ensure a higher response rate. The completed was collected on the same day within six hours distribution to improve the data quality. The researcher checked all the questionnaires for completeness.

4.10 Data quality assurance procedure

English version questionnaire was pretested on 5% of the total sample size outside of the study hospital to assess the reliability or internal consistency of the instrument. Necessary revisions were made by the researcher on the questionnaire for one week before the actual data collection time.

The quality of data was maintained by adapted and modified standardized questioners and pretesting in 5% of the total sample size on nurses who are working at other similar health institution. One day training was provided for data collectors to ensure that to have the same information about the study instrument and follow the administration procedures. And finally, the researcher and data collectors for missed values and completeness on daily basis and the required feedback for revision were presented to data collectors subsequently.

4.11 Data processing and analysis

Data were checked for its completeness every day. The collected data were coded and entered into Epi Data version 4.2 analyzed by using SPSS Version 25 software package for cleaning and analysis. Then to see the overall distribution of study participants Simple frequencies and percentages were used. And the results were presented in texts, graphs, and tables. The association between each independent variables and dependent variables were assessed by using binary logistic regression. All variables with $P \leq 0.25$ in the binary logistic regression analysis were taken to multiple logistic regression analysis in order to control the possible confounders.

Adjusted odds ratio with 95% with CI and P-value < 0.05 was considered. Those variables' which are significantly associated with dependent variables in variable analysis were checked for association in multivariable analysis.

4.12 Ethical considerations

Ethical clearance was obtained from Institutional Review Board (IRB) of Addis Ababa University, college of health science and all other concerned institutions. Official letter was submitted to Wolaita Zone Health Office and then, permission was obtained from those bodies prior to data collection. Informed consent was obtained from study subjects and the right to refuse at any point of the interview was assured. Study participants also have the right to refuse or terminate at any point of the data collection. To ensure confidentiality of respondents, their names were included from the questionnaire.

4.13 DISSEMINATION OF RESULTS:

The result of the study will be presented and submitted to School of Nursing and Midwifery College of Health Sciences Addis Ababa University. It will disseminate to Wolaita Zone health bureau and to studied hospitals. The findings also will present at different seminars and conference. An attempt will made to publish the findings of this study in reputable national or international journals.

CHAPTER FIVE: RESULT

5.1. Socio demographic characteristics nurses

A total of 273 nurses were participated in the study with a response rate of 97.8%. Of these, 142(53.2%) of the participant nurses were males; nearly three-fourth, 190 (71.2%) of the participants were married and 197 (73.8%) were BSc holders. The mean ages of the respondents were 28.7 (± 3.74 SD) with minimum and maximum ages of 22 and 42 years, respectively. Respondents had a mean of 5.4 years (± 2.9 SD) of work experience with a minimum and maximum of 1 and 16 years, respectively (Table 1).

Table 1: Frequency distribution of nurses' Socio-demographic characteristics in Selected Public Hospitals in Wolaita Zone, South Ethiopia, 2021 (N=267)

Variable	Category	Frequency	Percentage
Age	20-29	162	60.7
	30-39	100	37.5
	40 & above	5	1.9
Sex	Male	142	53.2
	Female	125	46.8
Marital status	Single	67	25.1
	Married	190	71.2
	Divorced	8	3
	Widowed	2	0.7
Educational status	Diploma	58	21.7
	Bachelor degree	197	73.8
	Master's degree & above	12	4.5
Work experience	Less than 5	117	43.8
	5 and above	150	56.2
Work area	Medical ward	73	27.3
	Surgical ward	101	37.8
	Recovery	13	4.86
	OR	26	9.7
	Emergency	54	20.2

5.2. Knowledge of Nurses towards Pain Management

The majority of study participants, 222(83.1%) were answered that pain should be assessed before and after administering pain medication. Concerning vital sign, 207(77.5%) of study participants were answered that vital sign is always reliable indicators of the intensity of patients pain (Table 2). Concerning to combining analgesics, 196(73.4%) has better pain control with fewer side effects than using a single analgesic agent. It showed that, 189(70%) Patients having severe chronic pain often need higher dosages of pain Medications than with acute pain, Opioids should not be used during the pain evaluation period, if the cause is unknown, because this could mask the cause of pain 220(82.4)

Out of 267 study participants, more than half 143(53.6) had good knowledge (figure 3)

Table 2: Frequency distribution of nurses' knowledge towards pharmacological pain management in Selected Public Hospitals in Wolaita Zone, South Ethiopia, 2021 (N=267)

Variable	Category	Frequency	Percentage
Paracetamol injections used in managing surgical pain	Yes	40	15
	No	227	85
Combining analgesics has better pain control with fewer side effects than using a single analgesic agent	Yes	196	73.4
	No	71	26.6
Pain should be assessed before and after administering pain drugs	Yes	222	83.1
	No	45	16.9
Narcotics side effect should be observed at least 20 minutes after administration	Yes	197	73.8
	No	70	26.2
Is it possible to uses Opioids in patients with a history of substance abuse?	Yes	190	71.2
	No	77	28.8
Is a Vital sign are always reliable indicators of the intensity of a patient's pain?	Yes	207	77.5
	No	60	22.5
Is the use of placebo is important in determining if a patient's pain is real?	Yes	85	31.8
	No	182	68.2
Is it important to frequently assess & document pain inpatient able to communicate?	Yes	218	81.6
	No	49	18.4
Which medications you know below that are mostly	Paractamol	101	37.8
	Ibuprofen	42	15.7

Variable	Category	Frequency	Percentage
available in your institution for pain relief measures?	Diclofenac	113	42.3
	Codeine	2	0.7
	Morphine	9	3.4
	Paractamol	25	9.4
Which analgesic drug is the best for the treatment of moderate to severe pain for cancer patients?	Ibuprofen	31	11.6
	Diclofenac	13	4.8
	Codeine	21	7.9
	Morphine	177	66.3
Patients having severe chronic pain often need higher dosages of pain Medications than with acute pain	Yes	189	70.8
	No	78	29.2
Aspirin and other non-steroidal anti-inflammatory agents are not effective analgesics for painful bone metastases.	Yes	194	72.7
	No	73	27.3
Depression of respiratory may not occurs in patients who receiving stable doses of opioids over a period of time.	Yes	201	75.3
	No	66	24.7
After the first dose of opioid analgesic is given, the following doses should be adjusted with the response	Yes	233	87.3
	No	34	12.7
Narcotic/opioid addiction is characterized as powerful, compulsive and a chronic neurobiological disease, reflected by conducts that include one or more of the following symptom : impaired control over drug use, compulsive use, continued use despite harm, and craving	Yes	218	81.6
	No	49	18.4
Opioids should not be used during the pain evaluation period, if the cause is unknown, because this could mask the cause of pain	Yes	220	82.4
	No	47	17.6

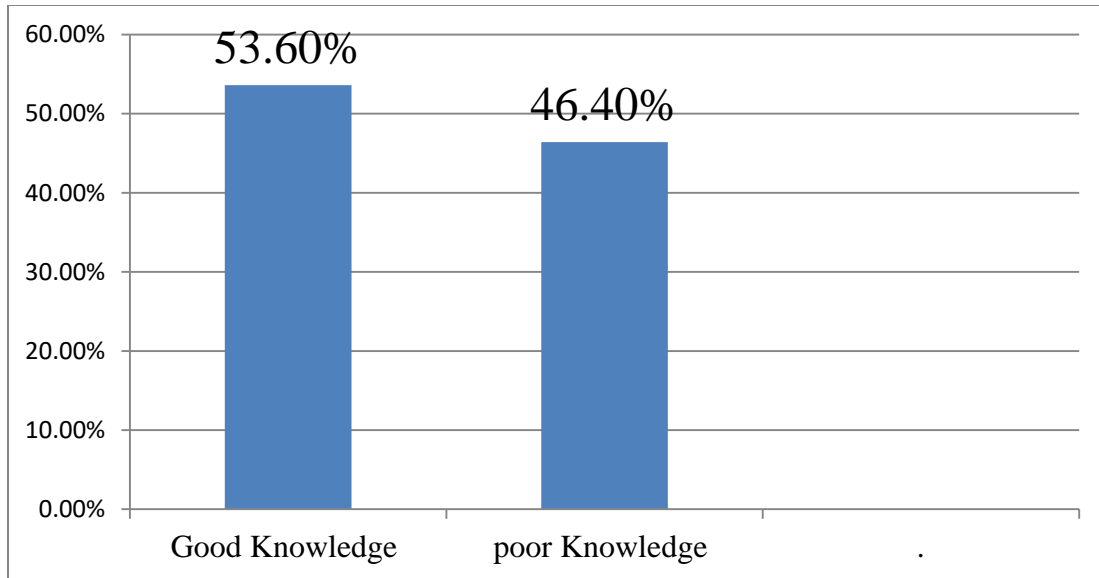


Figure 3: Distribution of nurses' knowledge towards pharmacological pain management in Selected Public Hospitals in Wolaita Zone, South Ethiopia, 2021

5.3. Attitude of Nurses towards pain management

To assess nurses' attitude towards pain assessment and management, nurses were asked about their views about pain management in adults. Out of 267 nurses, more than half of the nurses 174(65.2%) strongly agreed that patients comfort and pain relief is one of the most important task of the nurses. Regarding pain assessment tool using, 91(34.1%) of nurses answered that) using pain assessment tool usually make complicated and consume more time for other ward activities (Table 3). Out of 267 study participants more than half 139(52.1%) had positive attitude (figure 4)

Table 3 : Nurses' attitude towards pharmacological pain management in Selected Public Hospitals in Wolaita Zone, South Ethiopia, 2021 (N=267)

Variable	<u>Category</u>				
	strongly agree	Agree	Uncertain	Disagree	Strongly disagree
	N (%)	N (%)	N (%)	N (%)	N (%)
To ensure patient's comfort and pain relief is one of the most important tasks of nurses	174(65.2)	81(30.3)	5(1.9)	0	7(2.6)
Distraction reduces pain intensity	31(11.6)	170(63.7)	40(15)	17(6.4)	9(3.4)
Using placebo is important in determining patients in a real pain	8(3)	19(7.1)	22(8.2)	134(50.2)	84(31.5)
Surgical patients have more strong experience than medical patients	68(25.5)	127(47.6)	27(10.1)	33(12.4)	12(4.5)
The nurse's personal experience with pain affects the way the nurses manage pain on surgical patients.	53(19.9)	160(59.9)	37(13.9)	10(3.7)	7(2.6)
changes in vital sign can verify a patient's complaint of severe pain	62(23.2)	167(62.5)	18(6.7)	17(6.4)	3(1.1)
Nurses(health care- givers) are best judges of the patient's pain strength because they spent 24 hours with the patients	72(27)	166(62.2)	16(6)	9(3.4)	4(1.5)
Using pain assessment tool usually make more complicated and consume time for other ward activities	91(34.1)	116(43.7)	15(5.6)	30(11.2)	15(5.6)
Do you agree with the patient's	42(15.7)	149(55.8)	34(12.7)	34(12.7)	8(3)

statement to their pain?

Encouraging patient to endure pain as much as possible before using an opioid is recommended. **75(28.1)** **121(45.3)** **36(13.5)** **30(11.3)** **5(1.9)**

Cultural and spiritual beliefs are significant factors that Patients may think pain and suffering are necessary **37(13.9)** **169(63.3)** **25(9.4)** **28(10.5)** **8(3)**

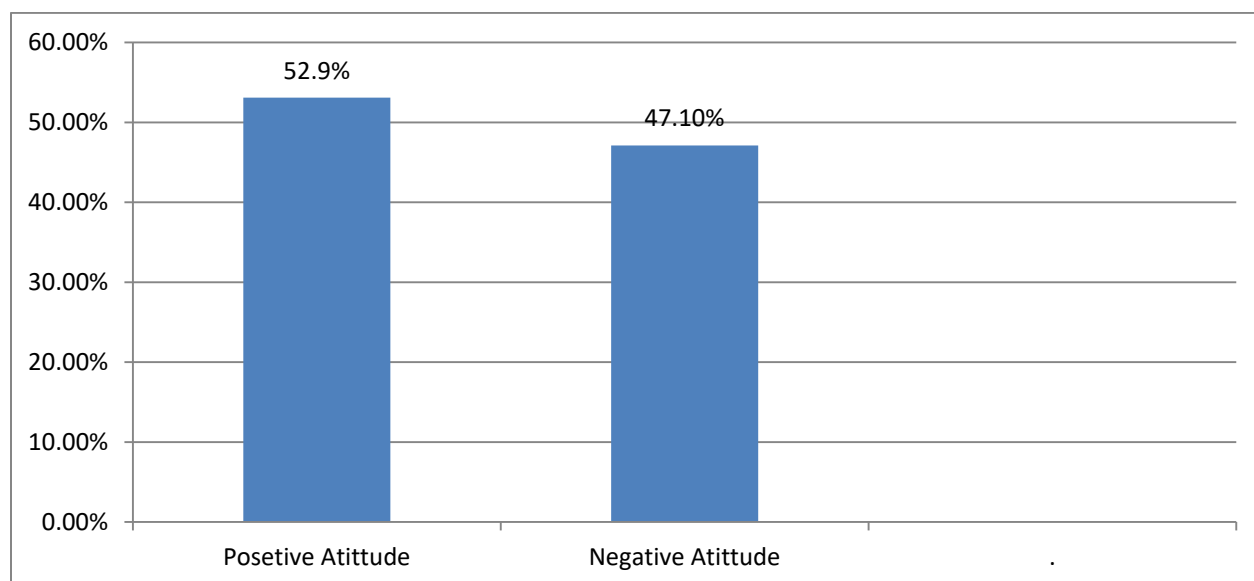


Figure 4: Nurses' attitude towards pharmacological pain management in Selected Public Hospitals in Wolaita Zone, South Ethiopia, 2021

5.4. The practice of nurses towards to pain management

Among 267 respondents 197(73.8%) reported that they assess pain for adults who are able to communicate. Concerning vital sign check, 219(82%) of nurses assess pain before and after administering pain drugs (Table 4). Regarding overall practice, nearly half 132(49.4%) of nurses had a good practice (figure 5).

Table 4: Nurses’ practice towards pharmacological pain management in Selected Public Hospitals in Wolaita Zone, South Ethiopia, 2021 (N=267)

Variable	Category	Frequency	Percentage
Do you assess pain for a patient who able to communicate?	Yes	197	73.8
	No	70	26.2
Is pain scores and management discussed during a nurse-to-nurse report?	Yes	209	78.3
	No	58	21.7
Have you received training related to pain assessment?	Yes	128	47.9
	No	139	52.1
Do you use a pain assessment tool?	Yes	144	53.9
	No	123	46.1
Observation is the method that used in surgical pain assessment	Yes	234	87.6
	No	33	12.4
Is Pain should be assessed before and after administering pain drugs?	Yes	219	82
	No	48	18
How do you rate your current knowledge about pain assessment and management?	Excellent	22	8.2
	Good	196	73.4
	Average	38	14.2
	Poor	11	4.1
Do you use pain measurement instruments in your ward?	Yes	144	53.9
	No	123	46.1

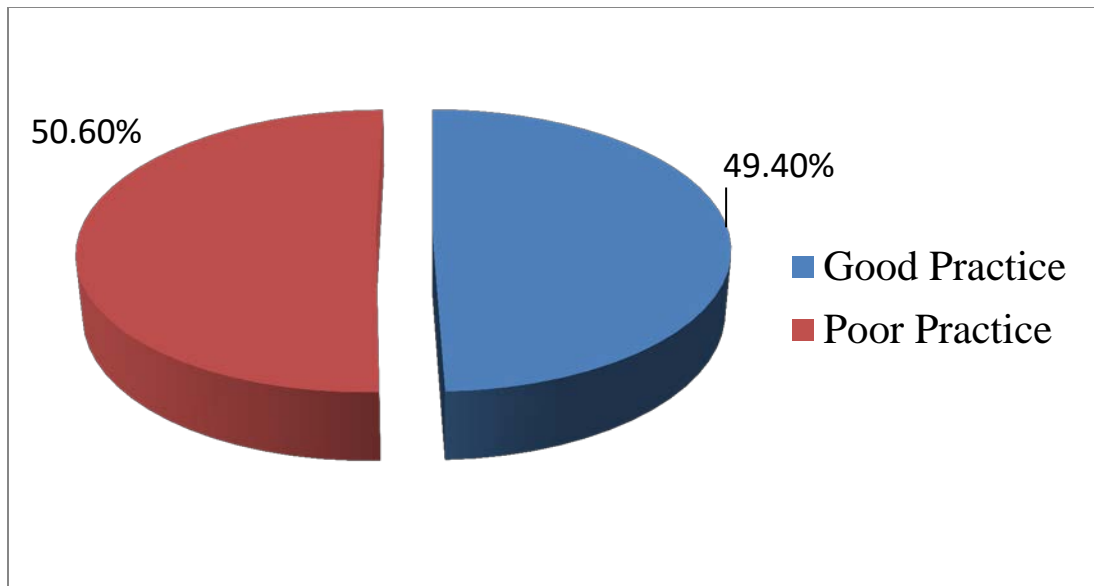


Figure 5: Distribution of nurses 'practice towards pharmacological pain management in Selected Public Hospitals in Wolaita Zone, South Ethiopia, 2021 (N=267)

5.5. Factors associated with nurses' knowledge towards pain management

Bivariate logistic regression was used among all variables and those variables found to be significantly associated with the outcome variable in bivariate analysis were entered into multivariate logistic regression. Educational level, lack of training on pain, Combining analgesics has better pain control with fewer side effects than using a single analgesic, assessing pain before and after administering pain drugs, Vital sign are always reliable indicators of the intensity of a patient's pain, observation of patients after narcotic administration at least 20 minutes after administration, Respiratory depression rarely occurs in patients who received stable doses of opioids over a period, severe chronic pain often need higher dosages of pain Medications than with acute pain, using of Opioids in patients with a history of substance abuse, subsequent doses of opioids should be adjusted following the response and avoiding opioids for the unknown cause of pain had association with nurse's knowledge on pain management for adults in bivariate logistic regression analysis ($p < 0.25$).

All variables that have an association with the outcome variables in bivariate logistic regression analyses were included in the multiple logistic regression models.

After controlling for the effects of potentially confounding variables using multiple logistic regression; Combining analgesics for better pain control with fewer side effects than using a single analgesic agent, not assessing before and after administering pain drugs, not assessing & documenting pain, Patients having severe chronic pain do not need higher dosages of pain Medications than with acute pain remained significantly associated with nurses' knowledge towards pain management for hospitalized adult ($p < 0.05$).

Those nurses not using combining analgesics for better pain control with fewer side effects than using a single analgesic agent was significantly associated with poor knowledge towards pain management than who use combining analgesics for better pain control [AOR=3.6; 95% CI :(1.22-10.5)]. Similarly those nurses who do not assess pain before and after administering anti pain drugs were 8.8 times [AOR=8.8 ;(2.17-37.3)] more likely to have poor knowledgeable for adult pain management than their counter parts.

Nurses who do not assess and document communication with patients were 10.2 times [AOR= 10.2, 95%CI :[(2.62-39.6)] more likely to have poor knowledge about pain management for adults than their counter parts. Additionally nurses who not responded patients having severe chronic pain often need higher dosages of pain medications were 4.8 times [AOR=4.8,95%CI:[(1.50-15.35)]more likely poor knowledge about pain management for adults than those do have.

Table 5: Determinant Variables on knowledge of nurses towards pain management for adults in Selected Public Hospitals in Wolaita Zone, South Ethiopia, 2021

Variable	Category	Knowledge		Odd Ratio (95% CI)		p-value
		Good N (%)	Poor N (%)	COR(95% CI)	AOR(95%CI)	
Combining analgesics for better pain control with fewer side effects than using a single analgesic agent	Yes	124(46.4)	72(27)	1	1	0.020
	No	19(7.1)	52(19.5)	4.7(2.6-8.6)	3.6(1.22-10.5)*	
Assessing pain before and after administering anti-pain drugs	Yes	134(50.2)	88(33)	1	1	0.003
	No	9(3.4)	36(13.5)	6.1(2.8-	8.8(2.17-37.3)*	

				13.3)		
Assessing and communication of pain documentation	Yes	130(48.7)	88(33)	1	1	
	No	13(4.9)	36(13.5)	4.1(2.1-8.2)	10.2(2.62-39.6)*	0.001
patients having severe chronic pain always need higher dosages of pain Medications than with acute pain	Yes	124(46.4)	65(24.3)	1	1	
	No	19(7.1)	59(22.1)	5.9(3.3-10.7)	4.8(1.50-15.35)*	0.008

*statistically significant ($p \leq 0.05$) in adjusted odds ratio

5.6. Factors associated with nurses' attitude towards pain management

Logistic regression was used to determine the set of predictor variables that predicted nurses' attitude towards pain management for adults. Variables that entered into bivariate logistic regression and that showed significant association ($p \leq 0.25$) were; educational level, current working area, lack of training, practice towards pain management, nurses experience, lack of familiarity with analgesics and combining analgesics had an association with nurse's attitude on pain management for adults in bivariate logistic regression analysis ($p < 0.25$).

Those variables that have an association with the outcome variables in the bivariate logistic regression analysis were entered into multiple logistic regression models. After controlling for the effects of potentially confounding variables using multiple logistic regressions, finally, lack of familiarity with analgesics and pain guideline are significant in the multivariate analysis ($p \leq 0.05$).

Logistic Regression revealed that nurses no familiar with analgesics nearly 2 times [AOR=2.19; 95% CI: (1.09-4.10)] more likely have a negative attitude towards pain management than those have familiar with analgesics in adult's pain relief. Additionally, nurses who had no pain guideline in the unit were nearly 2 times [AOR=1.82; 95% CI :(1.04-3.22)] more likely to have a negative attitude to pain relief in adults compared to those who had pain guideline in the unit

Table 6: Socio-demographic and other determinant Variables on the attitude of nurses for pain management for adults in Selected Public Hospitals in Wolaita Zone, South Ethiopia, 2021

Variable	Category	Attitude		Odds ratio		p-value
		Positive (%)	Negative (%)	COR 95%CI	AOR 95% CI	
Practice	Yes	76(28.5)	56(21)		1	
	No	63(23.6)	72(27)		1.6(0.96-2.79)	0.067
Work experience	< 5 years	69(25.8)	48(18)	1	1	
	>= % years	70(26.2)	80(30)	1.6(1.1-2.7)	0.6(0.36-1.04)	0.069
familiarity with analgesics	Yes	45(16,9)	20(7.5)	1	1	
	No	94(35.2)	108(40.4)	2.6(1.43-4.7)	2.1(1.09-4.10)*	0.026
Combining analgesics	Yes	109(40.8)	87(32.6)	1	1	
	No	30(11.2)	41(15.4)	1.7(0.99-2.96)	1.62(0.88-2.96)	0.119
Pain guideline	Yes	71(26.6)	86(32.2)	1	1	
	No	68(25.5)	42(15.7)	1.96(1.96-3.2)	1.82((1.04-3.22)*	0.037

*statistically significant ($p \leq 0.05$) in adjusted odds ratio

5.7. Factors associated with nurses' practices towards pain management

Logistic regression was used to determine the set of predictor variables that predicted the practice of pain management for adults. Variables that entered into bivariate logistic regression and that showed significant association ($p \leq 0.25$) were; lack of familiarity with analgesics, attitude, training, assessing the patient able to communicate, using standard tools, observation is part of pain assessment, before and after pain drug administration assessment done and availability of pain guideline had association with nurse's practice on pain management for adults in bivariate logistic regression ($p < 0.25$).

Those variables which are significantly associated with nurse practice towards pain management in the bivariate logistic regression analysis were entered into multivariate analysis.

After controlling for the effects of potentially confounding variables using multiple logistic regressions, finally attitude towards pain management [(AOR: 2.0, 95%CI:(1.1-3.71)], lack of training [(AOR:3.12, 95%CI:(1.3-7.36)], before and after pain assessment after ant pain administration[(AOR:12.3,95%CI:(4.4-34.36)],observation is part of pain assessment[(AOR:5.4, 95%CI:(1.77-16.58)], and assess patients able to communicate [(AOR:2.3,95%CI:(1.2-4.5))] were positively associated with poor pain management practice ($p \leq 0.05$).

Table 7: Socio-demographic and other determinant Variables on the practice of nurses for pain management for adults in Selected Public Hospitals in Wolaita Zone, South Ethiopia, 2021

Variable	Category	Practice		Odds ratio		p-value
		Good N (%)	Poor N (%)	COR 95% CI	AOR 95% CI	
Training	Yes	82(30.7)	46(17.2)	1	1	
	No	50(18.7)	89(33.3)	3.8(1.9-7.5)	3.12(1.3-7.36)*	0.009
Before & after ant pain administration	Yes	114(42.7)	108(40.4)	1	1	
	No	18(6.7)	27(10.1)	11.8(4.5-31.12)	12.3(4.4-34.36)*	0.000
Observation is part of pain assessment	Yes	127(47.6)	107(40.1)	1	1	
	No	5(1.9)	28(10.5)		5.4(1.77-16.58)*	0.003
Assess patients Able communicate	Yes	107(40.1)	90(33.7)	1	1	
	No	25(9.4)	45(16.9)		2.3(1.2-4.5)*	0.011
Attitude	Positive	76(28.5)	63(23.6)	1	1	
	Negative	56(21)	72(27)		2.0(1.12-3.71)*	0.020

*statistically significant ($p \leq 0.05$) in adjusted odds ratio

CHAPTER SIX: DISCUSSION

This study has tried to assess KAP of pain management and associated factors among nurses in six selected public hospitals in Wolaita zone, south Ethiopia.

Knowledge and associated factors of Nurses on pain management for adults have to be also interpreted into the current context and situations at hand. The overall score of good knowledge of nurses working in Wolaita zone public hospitals was (53.6%). The result is relatively consistent with the study done in Kenyan(47.2%) of nurses who had adequate knowledge about pain management [19]. This might be due to training in the area of knowledge regarding of pain assessment and might be due to the majority of the participants were bachelor degree. In contrary, the study conducted in Ghana revealed that 79.1% of respondents had inadequate knowledge, while (20.9%) had adequate knowledge towards pain management [27]. This might be due to a lack of adequate training regarding pain management.

Cross-sectional studies conducted in western Ethiopia and Mekelle city public hospital nurses, indicated that 49.8% of nurses have adequate knowledge [29] which is relatively consistent with results observed in this study. This might be due to the ways of training and protocol. This study also shows that about 81.6% of subjects aware that frequently assessing and recording pain is vital whereas 18.4% of responded not important for patients who able to communicate. This study is in line with a cross-sectional study conducted in Mekelle public hospital revealed that, about 88.8% of participants knew that regularly assessing and documenting pain is very important whereas 11.2% responded not important for patients who able to communicate[29].

The study of Gondar Hospital showed that, 69.5% of participants answered incorrectly as it may not often be useful to give a placebo to a patient in pain to assess if he is genuinely in pain [31]. This is inconsistent with that, 68.2% of study participants answered correctly as it may not often be useful to give a placebo to a patient in pain to assess if he is genuinely in pain. This difference may be due to the current health care system and that pain is one of 5th vital sign and it is crucial in practice, for all nurses to assess and decide the best pain management to care for their patients.

In addition, it may be due to the expansion of training on pain for health care workers.

Nurses who combine analgesics for better pain control with fewer side effects than using a single analgesic agent is 4.7 times more knowledgeable than nurses who did not combine analgesics.

The majority 124(46.4%) of nurses reported as they respondent knew patients having severe chronic pain often need higher dosages of pain Medications than acute pain. This is might be due to lack of adequate training of nurses, lack of pain assessment tools, due to differences in the study area, due to sample size.

And also important to frequently assessing a patient who able to communicate and documentation of pain 88 (33%). This percentage might be related to the sense of commitment that the nurses should assess pain in the first place and a gap on pharmacological managements of pain especially pain management by combining different anti-pain.

According to this study about 47.1% of study subjects were a negative attitude towards pain management. This finding was less than the study done in Addis Ababa (53.7%) [36] And Gondar hospitals (49.33)[31]. This difference might be due to differences in study sample size plus educational status and level of training for the health professional.

This study revealed that almost half (50.2%) of nurses disagree that placebo is useful in determining if the pain is real. In addition, more than half 62.5% of nurses agreed that vital sign shows the severity of pain. On other hand, 45.3% of nurses agreed that patient should be encouraged to endure pain before taking pain management measure to relieve their pain. This study is lower than the study conducted at Addis Ababa private and public hospitals (54.9%) of nurses agreed that patient should be encouraged to endure pain before taking pain management measure to relieve their pain [36]. The low score in Addis Ababa private nurses might be a lack of ongoing clinical training related to pain assessment and management to staff nurses and a lack of common guideline and assessment tool in their institution. This study implies the absence of common national pain guideline and ongoing clinical training related to pain assessment and management in both private and public hospitals.

Regardless of deficiencies in pharmacological pain management practice the largest barrier list by the participant was workload (59.6%), lack of tools (22.8)lack of organizational tools (9%) lack of knowledge (8.6%). This study is lower than Asella Teaching and Referral Hospital in South East Ethiopia [45]. This is might be due to lack of adequate training of nurses, lack of pain assessment tools, due to differences in the study area, due to sample size.

The barrier might contribute to low practices on pain management among nurses in this study. First, there was an inadequate organizational response to the question, Next, there was no adequate and continuous training and updating education program on pain management topic in increasing skill in the area of pain management., and it has been revealed that Wolaita Hospitals do not provide adequate pain assessment tool and the nurses lack availability of pain assessment tools.

Regarding the association of attitudes of nurses with the availability of pain guideline, there was a positive relationship between nurses' attitude and pain guideline. Nurses who believe common guideline improves the quality of care made them more positive thinker than others. This study is in line with a study conducted in Wolaita Sodo University Teaching Referral Hospital, there was a positive relationship between nurses' attitude and pain guideline [32]. This implies that having common guideline related to pain management principles will surely strengthen their positive attitudes and beliefs towards pain assessment and management though they face other interfering factors.

Regarding nurses' practice related to pain management the study showed a low level of practices (49.4%) of pain relief in adult. The result is relatively lower than the result scored in Ghana nurses having (97.0%) good practice on pain management and effective intervention used by the nurses was the encouragement of early exercise with analgesia [35]. This might be related to lack of nurses' commitment to apply their theoretical knowledge into actual practice and lack of training on current principles of pain management as well as a patient overload might be a possible reason. But somewhat higher than scored in Arsi zone hospital southeast Ethiopia, Nurses with BSc degree in nursing (80%) had low practice with postoperative pain management (37.5%)[39]. This study interprets that providing clinical training on pain management to staff nurses and encouraging informal education i.e. round discussion is the best way to achieve the optimal pain management practice in the adult care unit.

In addition to these, those nurses who had worked overload were (59.6%) less likely to practice pain management than those who have no work overload.

Nurses' attitude on adult's pain management, lack of training, lack of monitoring before-after anti-pain administration, lack of assessment of patients able to communicate and Observation is

part of pain about pain management are factors that remained significant in multivariate analysis for the practice of nurses for pain management ($p < 0.05$).

Those respondents who had a positive attitude were 1.9 times more likely to practice proper pain management for adults than those who had a negative attitude ($p=0.001$); this result implies that a nurse's attitude can affect his or her ability to adequately provide pain management and also nurses who had favorable assertively practice pain management protocols. A similar study was done in DebreBerhan University, a positive relationship was observed between nurses' attitude and their skills on pain relief in adults which is also observed in this study [42]. This finding implies that training should be provided to improve nurses' attitudes that might be put into effect in nurses' pain management practice.

Those participants who assess patients able to communicate had 2 times more likely to practice proper pain management for adults than those who had not assessed patients able to communicate. This is in line with the study conducted in Canada shows; inadequate patient communication was highlighted and was significantly associated with pain management [47].

CHAPTER SEVEN

7. STRENGTH AND LIMITATIONS OF THE STUDY

7.1. STRENGTH OF THE STUDY

This study has tried to look into the level of KAP of pharmacological pain management of nurses and related factors associated with it. Training was given to data collectors, questionnaires were checked for consistency. The hospitals included in this study and the study subjects were selected by using a simple random sampling method to obtain representative data. An effort was made to have an adequate sample size by using the design effect and Most of the pharmacological pain management barrier were assessed in this study .These were the strengths of the study which are highly believed to minimize the possibility of systematic bias.

7.2. LIMITATION OF THE STUDY

The study is limited with finance and time constraints and also since the study is conducted in hospitals in single zone it might not be generalizable for regional and federal level.

CHAPTER EIGHT

8.CONCLUSIONS AND RECOMMENDATIONS

8.1.CONCLUSION

The study determined the knowledge, attitude, practice and factors associated with pain management. Participants of this study were nurses who were working in public hospitals of Wolaita Zone. The overall results of this study showed that nurses had(53.6%)good knowledge,(52.1%) positive attitude and(50.6%) poor practice on pharmacological pain management for adults care units. There is a difference in the assessment and documentation of pain and also, pain guidelines were not available. The possible reason behind this may be the issue of continued supervision, lack of contents about pain assessment and management in their basic nursing education and lack of training on pain management. The findings of this study also suggest that the participants need detailed education, training regarding pain assessment and management based on the score for alleviation of pain in adults. Statistically significant associations were identified between pain management and its associate factors: lack of familiarity with analgesics, lack of assessment patients able to communicate, assessment of before and after ant pain administration lack of training, the attitude of the nurses, lack of observation after opioid medication, common guideline and specific protocol had a statistically significant association with nurses' pain management in adults.

8.2. RECOMMENDATIONS

Based on the findings of this study, the following are recommended; Lack of specific protocols/guidelines about pain assessment and management and no pain management training course offered to nurses may contribute to the inadequate level of knowledge, attitudes of nurses and pain management practice. Therefore, the hospital's administrative bodies would better to provide convenient professional education, training program regarding pain and its management to staff nurses. The hospital's quality care teams with the medical director are better to monitor and evaluate the practicability of pain management practice, offering motivational education on the use of assessment tools and prepare to document charts for pain scores. It would be much better if the Matrons, head nurses, staff nurses and academic nursing staffs in conjunction with the zonal health department work together in major factors and execute means to alleviate those major constraints that were found significant in these study. In addition, all hospitals should formulate a Pain Management Protocol to be utilized by all nurses in various work units and organize short-term training, and avail recent article in the ward in which nurses are working. The findings from the study help inform specific areas that need educational intervention, so higher educational organization should be review the curriculum for preparation of nursing student in pharmacological pain management method a more in- depth review and medical school curriculums is recommended, to fully understand what deficiencies exist in educational programs regarding pain management in adults. For researchers Employing mixed methods of studies involving qualitative and quantitative is recommended to gain more information on the knowledge, attitude and practices of nurses related to pain management. This will help to elaborate findings including gaps between the scores and the current situations at hand.

CHAPTER NINE

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CHAPTER TEN ANNEXES

ADDIS ABABA UNIVERSITY COLLEGE OF HEALTH SCIENCES

SCHOOL OF NURSING POST GRADUATE PROGRAM

5. ANNEXES

8.1 ANNEX A: INFORMATION SHEET

Introduction: my name is _____ I am working as a data collector for a research conducted by Badege Melileto assess nurse's knowledge, attitude and practice of pharmacological pain management for the partial fulfillment of his Master's degree in Adult Health nursing in Addis Ababa University. You are selected to participate in this study and all necessary information about the study is described as follows.

Objective: To assess nurses' knowledge, attitude and practice level toward pharmacological pain management at selected public hospitals in Addis in Wolaita zone, Ethiopia, 2021

Confidentiality: all the information you will provide will be kept secret and any third party couldn't have the access to it. Furthermore, you are not expected to write your name so that no one can identify you.

Benefits: there is no direct benefit for you from this study. However, the indirect benefit of the research for the participant and other clients is clear. Because assessing nurses' knowledge, attitude and practice on pharmacological pain management **and associated factors** helps for the improvement nursing care provision.

Risks: the information is collected using structured questionnaire therefore participating in the study will not inflict any harm on you.

Right to refuse: you have the right not to participate in the study as well as to drop it at any time if you feel discomfort with any question.

Person to contact: This research project will be reviewed and approved by the institutional review board of school of nursing and midwifery, college of health sciences, Addis Ababa University. If you have any question you can contact any of the following individuals (Investigator and Advisors) and you may ask at any the time you want.

ZelegeArgaw, M.Sc. Assistant. Professor: Addis Ababa University, College of Health Sciences, School of Nursing.

Wuduma Alemu, B.Sc., M.Sc.: Addis Ababa University, College of Health Sciences, School of Nursing.

Badge Melile, Addis Ababa University, College of Health Sciences, School of Nursing and Midwifery

Phone: +25 9126606 96, email:badegemengesha@gamil.com

8.2 ANNEX B: CONSENT FORM

Dear Nurse

As part of the requirements for the Master of Science in Nursing Health nursing Degree, I am conducting a study about nursing knowledge, attitude and practice towards pharmacological pain management and its associated factors. You are being invited to participate in this research study. Before you make a decision to participate, it is important for you 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 and associated factors of pharmacological pain managements in nurses. 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.

8.3 ANNEX C: ENGLISH VERSION QUESTIONNAIRE

This is the questionnaire designed to assess nurses' knowledge, attitude and practice in pharmacological pain management. Please indicate your response by circling your choice or by writing the appropriate information on the space provided Section I.

Socio demographic characteristics of nurses

1	Age	Age in years _____
2	Sex	1. Male 2. Female
3	Marital Status	1. Single 2. Married/living together 3. Divorced 4. Widowed
4	Educational level	1. Diploma/higher diploma 2. Bachelor degree 3. Master's degree and above
5	How many years of work experience do you have?	_____
6	Where is your current area of practice?	1. medical ward 2. surgical ward 3. Recovery 4. OR 5. emergency 6. orthopedics
7	Formal training related to pain assessment	Yes No

Section II: Questions to assess Nurses level of Knowledge towards pharmacological pain management

Instruction: look the question carefully and circle your best choice.

Item №	Question	Response
1	Paracetamol injections used in managing surgical pain	Yes No
2	Combining analgesics that work by different mechanisms may result in better pain control with fewer side effects than using a single analgesic agent	Yes No
3	Pain should be assessed before and after administering pain drugs	Yes No
4	Is the side effects of narcotics should be observed at least 20 minute after administration	Yes No
5	Is it possible to uses Opioids in patients with a history of substance abuse?	Yes No
6	Is a Vital sign are always reliable indicators of the intensity of a patient's pain?	1. Yes 2. No
7	Is the use of placebo is important in determining if patient's pain is real?	1. Yes 2. No
8	Is it important to frequently assess and document pain in patients able to communicate?	1. Yes 2. No
9	Which medications you know below that are mostly available in your institution for pain relief measures?	1.Paracetamol 2.Ibuprofen 3.Diclofenac 4. Codeine 5.Morphine
10	Which of the following analgesic medications is considered to be the drug of choice for the treatment of prolonged moderate to severe pain for cancer patients?	Paracetamol 2.Ibuprofen 3.Diclofenac

Item №	Question	Response
		4. Codeine 5.Morphin
11	Patients having severe chronic pain often need higher dosages of pain Medications than patients with acute pain	Ye No
12	Aspirin and other nonsteroidalanti-inflammatory agents are not effective analgesics for painful bone metastases.	True False
13	Respiratory depression rarely occurs in patients who have been receiving stable doses of opioids over a period of months.	True False
14	After an initial dose of opioid analgesic is given, subsequent doses should be adjusted in accordance with the individual patient's response.	True False
15	Narcotic/opioid addiction is defined as a chronic neurobiologic disease, characterized by behaviors that include one or more of the following: impaired control over drug use, compulsive use, continued use despite harm, and craving	True False
16	If the source of the patient's pain is unknown, opioids should not be used during the pain evaluation period, because this could mask the ability to correctly diagnose the cause of pain	True False

Section III: Questions to assess Nurses level of Attitude towards pharmacological pain management

Instruction: Please put **X** mark for your choice just below the response side.

Item No	Question	Response	-----			
		Strongly Agree 5	Agree 4	Uncertain 3	Disagree 2	Strongly Disagree 1
1	To ensure patient's comfort and pain relief is one of the most important tasks of nurses					
2	Distraction reduces pain intensity					
3	The use of placebo is important in determining if the patient are a real pain					
4	Surgical patients usually do experience pain more intense than medical patients					
5	The nurse's personal experience with pain affects the way the nurses manage pain on surgical patients.					
6	Observable changes in vital sign can verify a patient's complaint of severe pain					
7	Nurses are best judges of the patient's pain intensity because they spent 24 hours with the patients					
8	Using pain assessment tool					

	usually make nursing more complicated and consume time for other ward activities					
9	Do you agree with patient's statement to their pain?					
10	Patients should be encouraged to endure as much pain as possible before using an opioid					
11	Based on their cultural and spiritual beliefs Patients may think pain and suffering are necessary					

Section IV: Questions to assess Nurses level of practice towards pharmacological pain management.

Instruction: look the question carefully and circle your best choice.

Item №	Question	Response
1	Do you assess pain for patient who able to communicate? Pain? (If your answer is No please go to item 4	Yes No
2	If your answer is Yes to item 1, Please, name the tool(s) you use? If No go to item 3	Tools name-----
3	Are pain scores and management discussed during a nurse-to-nurse report?	Yes No

4	Have you received training related to pain assessment?	Yes No
5	How often do you use a pain evaluation tool?	1. Always 2. some time 3. Occasionally
6	Observation is part of the method used in surgical pain assessment	Yes No
7	Is Pain should be assessed before and after administering pain drugs?	Yes No
8	How do you rate your current knowledge about pain assessment and management?	1. Excellent 2. Good 3. Average 4. Poor
9	How often do you use pain measurement instruments in your ward?	1. Often 2. Always 3. Rarely 4. Never

Section V: Questions to assess factors affecting Nurses KAP towards pharmacological pain management

Instruction: look the question carefully and circle your best choice.

Item no	Question	Response
1	The barriers which are hinder you from Patient pain assessment?	1. Nursing workload 2. Lack of pain assessment materials 3. Lack of knowledge on assessment tools 4. Lack of organizational protocols for pain assessment
2	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
3	Do you have a pain guideline or standard care unit	1. Yes 2. No
5	Have you received training related to pain assessment and management during your professional Development?	1. Yes 2. No 3. Not sure
6	Lack of familiarity with analgesics?	Yes No
7	Poor documentation of pain assessment and management	Yes No
8	Have you read a journal or article or guidelines on pain? If yes, how often you read	1. Always 2. monthly

		3. yearly
9	Is pain part of ageing process?	Yes No
10	Have you attended educational classes or training on pain management within the last 1 year?	Yes No
11	Organization answer our questions timely	Yes No
12	What are the barriers are facing using pharmacological pain management?	1.Patient unwillingness 2.shortage of drugs 3 Lack Patient/family Awareness