**DSpace Institution**

**DSpace Repository** **http://dspace.org**

School of Public Health Thesis

2024-02

# Pain Assessment Practice And Associated Factors Among Nurses Inpublic Hospitals Of Bahir Dar City, Bahir Dar, Ethiopia, 2023

Mekonnen, Anteneh

http://ir.bdu.edu.et/handle/123456789/17637

*Downloaded from DSpace Repository, DSpace Institution's institutional repository*




**BAHIR DAR UNIVERSITY**

**COLLEGE OF MEDICINE AND HEALTH SCIENCES**

**SCHOOL OF PUBLIC HEALTH**

**DEPARTMENT OF EPIDEMIOLOGY AND BIOSTATISTICS**

# PAIN ASSESSMENT PRACTICE AND ASSOCIATED FACTORS AMONG NURSES INPUBLIC HOSPITALS OF BAHIR DAR CITY, BAHIR DAR, ETHIOPIA, 2023

**BY: ANTENEH MEKONNEN (BSC.N)**

**A THESIS REPORT SUBMITTED TO DEPARTMENT OF EPIDEMIOLOGY AND BIOSTATISTICS, SCHOOL OF PUBLIC HEALTH, COLLEGE OF MEDICINE AND HEALTH SCIENCES, BAHIR DAR UNIVERSITY INPARTIAL FULFILLMENT OF THE REQUIREMENTS FOR MASTER OF PUBLIC HEALTH IN EPIDEMIOLOGY**

**FEBRUARY, 2024**

**BAHIR DAR, ETHIOPIA**

BAHIR DAR UNIVERSITY

COLLEGE OF MEDICINE AND HEALTH SCIENCES

SCHOOL OF PUBLIC HEALTH

DEPARTMENT OF EPIDEMIOLOGY AND BIOSTATISTICS

# PAIN ASSESSMENT PRACTICE AND ASSOCIATED FACTORS AMONG NURSES INPUBLIC HOSPITALS OF BAHIR DAR CITY, BAHIR DAR, ETHIOPIA, 2023

BY: ANTENEH MEKONEN (BSC.N)

ADVISORS:

1. ERGOYE M. (MSC, ASSISTANT PROFESSOR OF BIOSTATISTICS)
2. GIZACHEW T. (MPH, ASSISTANT PROFESSOROFEPIDEMIOLOGY)

FEBRUARY, 2024

BAHIR DAR, ETHIOPIA

APPROVAL SHEET

BAHIRDAR UNIVERSITY

COLLEGE OF MEDICENE AND HEALTH SCIENCES

SCHOOL OF PUBLIC HEALTH

DEPARTMENT OF EPIDEMIOLOGY AND BIOSTATISTICS

Submitted by:

1. Antenah Metemma — Signature — Feb 2020
Name of student — Date

Approved by:

2. Ergoye M. — Signature — Feb 2024
Name of major advisor — Date

3. Gizachew Tadesse — Signature — Feb 2024
Name of co-advisor — Date

4. Kebadnew M — Signature — Feb 2024
Name of internal examiner — Date

5. Gobezaw Mulatie — Signature — 24-06-2016
Name of department Head — Date



## ACKNOWLEDGEMENT

First and foremost, I would like to express my deepest gratitude to Bahir Dar University, College of Medicine and Health Sciences, School of Public Health, Department of Epidemiology and Biostatistics, for providing me with such an opportunity to study a Master's program in epidemiology.

Next, I would like to express my gratitude to my advisors, Ergoye Melese (MSC, Assistant Professor) and Mr. Gizachew Tadesse (MPH, Assistant Professor), for their unreserved guidance and support throughout my thesis work.

Finally, I would like to express my heartfelt thanks to study participants, data collectors, supervisors, family, and friends for their encouraging words throughout the thesis work.

## ABSTRACT

**Background:** Pain assessment is a broad concept involving clinical judgment based on observation of the type, significance, and context of the individual's pain experience. However, little has been explored about nursing pain assessment practices in Ethiopian. Therefore, this study was designed to assess pain assessment practice and associated factors among nurses at public hospitals of Bahir Dar city, Ethiopia.

**Objective:**To assess pain assessment practice and associated factors among nurses in public hospitals of Bahir Dar city,Bahir Dar, Ethiopia, in 2023.

**Method**: An institutional-based cross-sectional study was conducted among 400 nurses in public hospitals of Bahir Dar city from November 15 to December 15, 2023.Data were collected using a structured, self-administered questionnaire and observational checklist questionnaire. A simple random sampling technique was used to select the study participants. The data were entered into EpiData 4.6 export to SPSS version 26 for analysis. Variables that have a P-value of 0.25 in bi variable binary logistic regression analysis were included in multivariablebinary logistic regression. Variables with P-values lower than 0.05 were considered statistically significant associations with pain assessment practice.

**Result:**A total of 388 nurses participated in this study, and Theoverall pain assessment practices of nurse in the study areas were 40.5% (95% CI: 35%–45%). Good knowledge pain assessment (AOR=1.619, 95% CI: 1.063–2.465), favorable attitude (AOR = 1.585, 95% CI:1.034–2.429), sex (AOR =1.644, 95% CI: 1.075–2.514), and attending training in pain assessment (AOR = 1.743, 95% CI: 1.139–2.669) were significantly associated with pain assessment practices of nurses.TheHosmer and Lemeshow test were checked for model goodness of fit, which was 0.86.

**Conclusion:** This study revealed that pain assessment practice was low in public hospitals in Bahir Dar city. The multivariable binary logistic regression analysis showed that good knowledge, favorable attitude, sex, and attending training in pain assessment were significantly associated with pain assessment practices. Therefore, it is better to put further effort into improving pain assessment practice by providing training on standards of pain assessment, inspiring readers, and providing guidelines for reading to enhance knowledge, attitude, and practice.



**Keywords:** painassessment, practice, nurses, factors, Bahir Dar.

## ABBREVIATIONS

BPS……Behavioral Pain Scale

BPS-NI ……Behavioral Pain Scale forNonIncubated Patients

CIAP ……..Critically Ill Adult Patient

CPOT…….……...Critical Care Pain Observation Tool

FPS ……...Faces Pain Scale

ICU ……...Intensive Care Unit

NRS…….……...Numerical Rating Scale

OR ……Odds Ratio

PTSD…….Posttraumatic Stress Disorder

VRS ……...Verbal Rating Scale

VAS …… …..Visual Analogue Scale

# Table of content

ACKNOWLEDGEMENT ..... iv

ABSTRACT ..... v

ABBREVIATIONS ..... vi

LIST OF TABLES ..... x

LIST OF FIGURES ..... xi

1. INTRODUCTION ..... 1

1.1. Background ..... 1

1.2. Statement of the problem ..... 3

1.3. Significance of the Study ..... 5

2. LITERATURE REVIEW ..... 6

2.1. Nurses pain assessment practice ..... 6

2.2. Factors associated with pain assessment practice ..... 8

2.2.1. Socio demographic Factors ..... 8

2.2.2 .Personal behavior related factors ..... 8

2.2.3. Organizational factors ..... 10

2.2.4. Patient related factors ..... 11

3. CONCEPTUAL FRAMEWORK ..... 12

4. OBJECTIVES ..... 13

4.1. General objective ..... 13

4.2. Specific objectives ..... 13

5. METHOD AND MATERIALS ..... 14

5.1. Study area and period ..... 14

5.2. Study design ..... 14

5.3. Population ..... 14
5.3.1. Source population ..... 14
5.3.2. Study population ..... 14
5.4. Inclusion and Exclusion criteria ..... 14
5.4.1. Inclusion criteria ..... 14
5.4.2. Exclusion criteria ..... 14
5.5. Sample size determination ..... 14
5.6. Sampling Technique and Procedure ..... 16
5.6.1. Sampling Technique ..... 16
5.6.2. Sampling procedures ..... 16
5.7. Variables ..... 17
5.7.1. Dependent variable: ..... 17
5.7.2. Independent variables: ..... 17
5.8. Operational definitions ..... 18
5.9 Data collection instrument ..... 19
5.10. Data Collection Procedure ..... 19
5.11. Data quality control ..... 20
5.12. Data Processing and Analysis ..... 20
5.13. Ethical clearance ..... 21
5.14. Dissemination of Result ..... 21
6. RESULTS ..... 22
6.1. Socio-demographic characteristics of respondents ..... 22
6.2. Knowledge of nurses towards pain assessment practice ..... 23
6.3. Attitudes of nurses towards pain assessment practice ..... 25
6.4. Communication skills towards pain assessment practice ..... 25

6.5. Job satisfaction towards pain assessment practice ..... 26
6.6. Substance abuse ..... 26
6.7. Practice of nurse towards pain assessment ..... 27
6.8. Organization and patient related factors ..... 29
6.9. Organizational factors workload affecting the pain assessment practice ..... 30
6.10; Bi variable and multivariable binary logistic regression model factors associated with pain assessment practice ..... 31
7. DISCUSSION ..... 33
8. STRENGTH AND LIMITATIONS OF THE STUDY ..... 36
9. CONCLUSION ..... 37
10. RECOMMENDATION ..... 38
11. REFERENCE ..... 39
APPENDIXES ..... 45

# LIST OF TABLES

Table 1; Sample size calculation for the second objective, factors associated with pain assessment practices. ..... 15

Table2.Sociodemographic characteristics of nurses towards pain assessment practice among nurses in public hospitals, Bahir Dar, 2023 (n=388) ..... 22

Table3: Knowledge of nurses towards pain assessment practice among nurses in public hospitals, Bahir Dar, 2023(n=388) ..... 23

Table 4: Communication skills towards pain assessment practice among nurses in public hospitals, Bahir Dar, 2023(n=388) ..... 25

Table 5: Job satisfaction toward pain assessment practice among nurses in public hospitals, Bahir Dar, 2023(n=388) ..... 26

Table 6: Pain assessment practice among nurses in public hospitals, Bahir Dar, 2023(n=388) ... 27

Table 7: Organizational and patient related factors affecting pain assessment practice among nurses in public hospitals, Bahir Dar, 2023 (n=388) ..... 29

Table 8: Organizational factors workload affecting pain assessment practice among nurses in public hospitals, Bahir Dar, 2023 (n=388) ..... 31

Table 9:Bi-variable and multi variable binary logistic regression model analysis factors associated with pain assessment practice among nurses in public hospitals, Bahir Dar, 2023(n=388) ..... 32

# LIST OF FIGURES

Figure 1: conceptual framework for pain assessment practice and associated factors among nurses in public hospitals of Bahir Dar city, Bahir Dar, Ethiopia, 2023. ..... 12
Figure 2: Schematic presentation of sampling technique for pain assessment practice and associated factors among nurses in public hospitals of Bahir Dar city, Bahir Dar, Ethiopia, 2023. ..... 16
Figure 3: Pain assessment practice among nurses in public hospitals, Bahir Dar, 2023 ..... 29

# 1. INTRODUCTION

## 1.1. Background

Pain assessment is a broad concept involving clinical judgment based on observation of the type, significance, and context of the individual's pain experience.Assessment is the first and most important step in building the groundwork for strategies in proper pain management; thus, it guarantees patients' comfort and quality of life and ultimately improves their practices(1).

Assessment of pain is necessary not only to clarify the cause of the patient's pain and provide adequate pain relief, but also to prevent overtreatment of pain and related adverse effects(2).

Pain assessment is important to determine the type of pain based on its underlying etiology, anatomic location, temporal nature, and intensity. Pain assessment must be considered on admission, after a change in medical status, and prior to, during, and after procedures(3).

Pain assessment tools are instruments designed to measure pain(4).There are several pain assessment tools, which comprise the pain rating scales, such as the Numerical Rating Scale (NRS), the Visual Rating Scale (VRS), the Visual Analogue Scale (VAS), and Wong's Faces Scale, and also classified pain assessment into three patterns, which can be seen as different ways of assessing pain: the self-reported pattern, judging pain levels by healthcare professionals' pattern, and the intermediaries' pattern (the relatives, the nurses' aides) (4).

A comprehensive assessment of pain requires subjective and objective data, self-reports, and assessment tools. Actually, a patient's self-report of pain is the most valid method of assessing pain in a patient who can communicate (5, 6).

Moreover, a thorough assessment of a patient's discomfort includes their vital signs.The vital signs are used as a supplement to pain evaluation because they are unable to differentiate between pain and other forms of suffering. Healthcare professionals should also watch for nonverbal cues from patients, such as movements and facial expressions, while assessing pain. (7)Additionally, the outcomes of the assessment must be recorded and shared with everyone involved in the patient's treatment(8, 9).

While assessing pain in non-verbal patients might be challenging, a combination of behavioral and physiological markers may be useful. By increasing the efficacy of pain management techniques, the utilization of a pain flow sheet can make it easier to record the evaluation and reevaluation of pain(10).

Nurses play an essential role in pain assessment and management. In practice, nurses are responsible for assessing pain by obtaining subjective responses from the patient using verbal set of questions, and also objectively observing nonverbal actions like facial expressions of the patients(11).

Maintaining an optimal level of comfort for patients of whatsoever category is a universal goal for nurses because pain is one of the major experiences that can minimize patients' comfort patients experience pain from pre-existing diseases, invasive procedures, or trauma(12).

Given that nurses have more contact with hospitalized patients than any other member of the healthcare team, and the fact that they have the prime role in promoting comfort and pain relief, it is crucial that they are to make accurate pain assessment(13).

The nurse must use a systematic process with a reliable and valid scale for precise pain assessment, believe and approve the reported pain level by the patients themselves, provide support, use pharmacological and non-pharmacological methods of pain management, and evaluate the effectiveness of the management(14).

## 1.2. Statement of the problem

Pain assessment practices are a major global public health concern because of the associated increase in patient morbidity and mortality. Globally, the burden of inadequate pain assessment varies considerably, with the highest problem in developed and developing countries(15).

Furthermore, studies on global prevalence show that more than 80% of hospitalized patients experience pain(16).Moreover, because expressing pain is viewed as a sign of weakness, African patients are less likely to convey their discomfort verbally Thus; African regions suffer from a double burden of pain assessment from nurses' and patients' sides. Additionally, research from African nations revealed comparable outcomes, demonstrating a lack of commitment to the fundamentals of pain assessment(2, 9, 17).In addition, the few and contradictory earlier research conducted in Ethiopia revealed that nurses' practices for assessing pain ranged from 24.4% to 60.5%(17, 18).Using tools to assessment behavioral indicators of pain promotes pain assessment in challenging situations(19).

In adequatepain assessment results in sympathetic activation due to pain and can have negative effects on the cardiovascular, gastrointestinal, and renal systems, predisposing patients to events such as cardiac ischemia and ileus. Unrelieved pain decreases patient mobility, resulting in complications such as deep vein thrombosis, pulmonary embolus, and pneumonia, further stays in health institutions, and more cost(20).It can also induces result in harmful physiological and psychologicaleffects on the patients including anxiety, depression, and post-traumatic stress disorder(21).These effects include reduced woundrecovery, increased metabolic rate and cardiac output, increasedproduction of cortisol, increased retention of fluids, and the riskof developing chronic pain(22).Some studies have suggested that around 70% of ICU patients have unrecognized or undertreated pain due to unassessed pain(23).

Clinician-related barriers, including knowledge deficits regarding pain assessment, failure to assess and acknowledge the existence of pain, personal and cultural bias, and communication difficulties between the patient and the health-care team, contribute considerably to suboptimal pain assessment among critically ill patients(1).

However, nurse-related obstacles, such as inadequate understanding of pain assessment concepts, neglecting to use pain assessment instruments, and communication breakdowns between the patient and the medical staff, prevent patients' pain from being appropriately assessed(24).

Many nurses not attending training for assessment of pain lead to inappropriate pain assessment(25).

Educational efforts about pain physiology, pain symptoms, and pain assessment have probably been beneficial, and providing nurses with ongoing pain assessment courses and instilling responsibility for pain assessment early in their education is crucial(26).

Application of an objective pain rating scale for the assessment of pain in nonverbal, critically ill patients can improve patients' ratings of their pain experience, improve the documentation of pain assessments by nurses, and increase nurses' confidence(27).

Despite overwhelming evidence in the literature that pain is a significant problem within the critical care environment, nurses have shown less confidence in their ability to accurately assess and effectively manage pain, especially in patients unable to self-report(2).

Several international health authorities, including the World Health Organizations and the International Association of the Study of Pain, have promoted the idea that adequate pain assessment is a fundamental human right based on legal,bioethical rationale and improvement initiative to integrate pain assessment into service delivery by providing training, and awareness. Adequate pain assessment is a compelling and universal requirement in health care(28).

There is little evidence about the practice of nurses in the study area. As nurses have frequent contact with patients, it is important to understand their approach to pain assessment.

Nurses spend more time with patients than any other health care team member. It is the nurse who performs many interventions for pain relief. The nurse is also, on most occasions, in a position to evaluate the effectiveness of pain management and initiate the necessary changes.Therefore, the nurse should use practice-based pain assessment to enhance the correct determination of the patient's level of pain and, when appropriate, provide pain-relieving measures.According to searching different articles' not study about in this topic in study area.So this study was conducted to fill the gap by assessing how nurse to practice of pain assessment. Therefore, this research is aimed to assesspain assessment practice and its associated factors among nurses in public hospitals of Bahir Dar city by considering unaddressed factors still in Ethiopia.

## 1.3. Significance of the Study

Pain assessment with ultimate effective management, is one of the most important for the following stakeholders.

For patients/community, based on the findings, Pain assessment is important to reduce the number of patients suffering from pain, which results in early mobilization, shortened hospital stays, reduced hospital costs, overall increased patient satisfaction, and finally a good recovery from pain. This enables them to assess patients' conditions and deliver individualised care to each patient so as to reduce discomfort and enhance the quality of life. It is also helpful to improve both the quality of care and healthcare outcomes, or quality of life, for patient.

For health care providers, the nurses' practices in assessment of pain using an appropriate pain rating scale, would prevented pain related complication to determine the type of pain intervention that should be given to the patient to relieve the pain, administration of appropriate pharmacological analgesics, evaluation of effectiveness of intervention and subsequent documentation to enable follow-up. Based on the findings, to improve the practices of pain assessment among nurses to enhance correct determination of the patient's level of pain and when appropriate, provide pain relieving measures. The outcome of study was also enabling the nurses to evaluate their practices towards the nursing pain assessment in adult care units.

For policy/program makers, the result was hopefully give as a base line data for any pain assessment practice intervention to be implemented at Ethiopian health institutions, Beside this, the study can provideinformation about the overall situation of nurse's practice on pain assessment andthe finding of this research makes clinical policymakers to give attention for the development of guidelines,In-servicetraining and protocols regarding nursepain assessment practice. In general it gives evidence based information for those who works in the health care system.

# 2. LITERATURE REVIEW

## 2.1. Nurses pain assessment practice

According to a study conducted in Bangladesh, it was found that 75% of nurses had good pain assessment practices(29).

On the other hand, another study carried out about nurses pain practices related to pain assessment in critically ill patients in a selected private hospital in Bangladesh showed that 77.5% had good pain assessment practices. However, most of the respondents (61.5%) were using a pain assessment tool for patients and 73.5% of the respondents were documenting the findings after the pain assessment(30).

In a study conducted in Al-Ahliyya Amman University, Amman, Jordan a total of 89.7% of nurses used pain assessment tools with patients able to communicate, and the numeric rating scale was the most commonly used tool. A total of 81.7% of the nurses used a pain assessment tool with patients unable to communicate, and the adult Nonverbal Pain Scale was the most commonly used tool(31).

According to a study conducted in India, 48% of nurses consider the practice of pain assessment to be good practice (32).

According to research conducted in Kentucky pain assessment practice, nurses did well in assessing pain intensity at 85%, pain location at 70%, and pain-relieving factors at 59% (35).A descriptive study in Egypt shows pain assessment practices. 34.3% had good practice(33).

A descriptive cross-sectional study regarding the utilization of pain assessment toolsin Selected Hospitals in EkitiStateinNigeria showed that 32% had good pain assessment practice. However,only 29% documented of pain assessment score and 62 % that pain assessment score were discussed during handling and round time(12).

In the same way,studypractices related to pain assessment in critically ill patients inUganda (23.5%) pain assessment practices, and also a few participants who reported using assessment tools (22.4%).A majority participants (71.2%) reported that they document pain assessment findings, but they were also not regularly engaging in this practice Mostly performed by nurses were discussing pain assessment and management during nurse-to-nurse reports,which was 76.5%,and discussing pain scores were 55.9%(34).

On the other hand , another study concluded thatatRwanda, nurse pain assessment practice78%was good nurse pain assessment practice(35).

A descriptive studyconduct Tamale Teaching Hospital in Ghanafound that 60% good pain assessment practice. The majority 87% of the nurses reported assessing pain among patients who were able to report pain. However, 59% reported that they did not use any pain assessment tools And also, more than half of the participants, representing 57%, reported that pain assessment scores were not discussed during the nurse-to-nurse report, and 73% of the nurses were discussed during ward rounds about assessment pain scores and management(2). The available literature in South West Ethiopia revealed that 60.5% of the respondents had good practice in pain assessment (17), and another study concluded that in Hawassa City (24.4%), nurses had good practice in pain assessment(36).

Previous studies done in the West ShoaZone show that 51.8% were good pain assessment practices, the location of pain was assessed in 25.5% of cases, pain quality was assessed at 35.1%, and the pain intensity tool was used at 46.3% (37).

According to existent literature conducted in Addis Ababa, nurses' attitudes, practices, and barriers toward pain assessment were 34.1% and 38.1% had good pain assessment practice.

According to a study in the Amhara region, 57.1% of study participants had good pain assessment practice (39).

## 2.2. Factors associated with pain assessment practice

### 2.2.1. Socio demographic Factors

According to study conduct in Bangladesh show that regarding pain assessmentnurses pain assessment practices age in 30-39 years 9.6 time more likely good pain assessment practice compared to age 40-59years and above two yearsworking experience 11.22 time more likely good pain assessment practice than those less one years experience nurses (29).

According to a study done in Kenyatta national hospital of the participants were aged between 30-39 years 61.6% more likely good pain assessment practice compared to age above 40 years (37).

The study conducted in South Bohemian Hospitals found that nurses with bachelor's degree and above, were significantly more likely pain assessment practice than those diploma nurse(38).

A descriptive study done at Hawassa Referral Hospital show that nurses who have nine and above service years had 2.35 times more likely good in nurse pain assessment practice than those having service years less than nine years. Nurses on educational status who have B.Sc. degree and above have two times more good pain assessment practice than diploma nurses (17).

Accordingly, to study done in Amhara Referral Hospitals nurses who had a work experience of two to five years were all most two times, more likely to experience poor nurse pain assessment practices compared to nurses who had a work experience of more than five years(39).

The study in south Ethiopia also revealed that males were forty seven percent less likely to do pain assessment than female (34).

### 2.2.2 .Personal behavior related factors

According to study conduct in Finland show that the association between the overall quality of care and general job satisfaction was statistically significantthose nurse with job satisfaction were five time more likely pain assessment practicethan those unsatisfy(40).

**Knowledge of nurses towards pain assessment practice**

According to study carried out about nurses' knowledge and practices related to pain assessment in critically ill patients in a selected private hospital in Bangladesh showed that more than four-fifths (84%)of the respondents currently had good knowledge about pain assessment(30).

A study done in Zimbabwe Bindura hospital revealed that good knowledge on pain assessment practice was 64%(41)and also study in oromiaregionalso revealed that respondents who had

adequate knowledge of pain assessment were three times more likely good pain assessment practice than those who had inadequate knowledge(15).

In study South West Ethiopia show that Nurses' level of knowledge was also significantly affected their practice of pain assessment those participants who had good knowledge were two times more likely practiced of Pain assessment than those who had poor knowledge(18)

According to study in Amhara region show that who have good knowledge had two times more likely good pain assessment o practice than inadequate knowledge(42).

**Attitudes of nurses towards pain assessment practice**

A study conducted in Saudi Arabia showed that those with favorable attitudes had 75% good pain assessment practices than those with unfavorable attitudes(43).

A study done in Zimbabwe at bandura hospital revealed that the attitude regarding pain assessmentfavorable attitudes had56%good pain assessment practices than those with unfavorable attitudes(41).

According to the study Oromia region, respondents who had a favorable attitude were almost five times more likely to practice good pain assessment than those who had an unfavorable attitude (15).

In a study conducted in the Amhara region, respondents who had a favorable attitude were almost two times more likely to practice good pain assessment than those who had an unfavorable attitude(42).

**Communication skill of nursetowardspain assessment practice**

According to a study conducted in the Amhara region, 36.5% of nurses have poor communication and are less likely to practice pain assessment than those who communicate well(44).

**Substance abuse of nurse towards pain assessment practice**

A study conducted on Jimma substance use among non-chewers found that they were three times more likely to have good patient care than chat chewers and non-smokers. three times more likely to engage in good practice than smokers, and non-alcohol users are three times more likely to practice good practice than alcohol users(45).

### 2.2.3. Organizational factors

In a survey conducted in Canada related to pain assessment availability guidelines, almost three times more likely were good pain assessment practices than those without availability guidelines(46).

On the other hand , other study concluded on factors and reasons for poor practices related to pain assessment in critically ill patients in Mulago Hospital shows that workload (84.1%), lack of availability of assessment tools (74.1%), lack of tanning on assessment tools (82.4%), lack of familiarity with tools (78.2%), lack of protocols and guidelines on pain assessment and management (74.1%), poor documentation of pain assessment and management (77.6%), and more than a quarter (29%), did not assess for the need for analgesics before wound care (9).

According to a study in South West Ethiopia, nurses' perceived work load also showed a significant difference. Pain assessment practice: those nurses who perceived they had no workload were 2.544 times more likely to practice Pain assessment than those who perceived they had a workload(18).

A cross-sectional study conducted in Addis Abeba public hospital of pain assessment practice in critically ill adult patients revealed that nurses with in the absence of nursing workload were seven times more likely improved nurse pain assessment practice compared to work loaded availability of pain assessment tool 1.3 times more likely good pain assessment than those lack of availability of pain assessment tool (24).

Accordingly study was conducted at of Dhaka medical college hospital the palliative care units of the practice level of nurses was significantly associated with pain assessment practice on Training and who attended training 53.5% more nurse pain assessment practice than not attended training nurse(47).

Study in South West Ethiopiaconduct that Regarding to practice of Pain assessment those nurses who had no in- service training were 55.2% less likely had good practice of pain assessment than their counter parts(18).

Accordingly study Oromia region show that respondents who have taken pain assessment practice training were 3.2 times more likely to practice than those who did not take such training(15).

A cross-sectional study conducted in Amhara Region show that lack of workload almost two times more likely good pain assessment practice than those workload and receiving training about pain assessment almost two time more likely good pain assessment practicethanthose not gain training(42).

### 2.2.4.Patient related factors

According to a study Canada showed that nurses were significantly less likely to use a pain assessment tool for patients unable to communicate 33% than for patients able to self-report 89%(46).

A cross-sectional study Addis Ababa public hospital show that pain assessment practice in critically ill adult patients was notsignificantwithpatient inability to communicate and patientinstability. Nurses practice pain assessment about seven times more than in non-sedated patients than sedated patients (24).

Astudy regarding the utilization of pain assessment toolsin Nigeria in showed that patient instability e.g. unstable hemodynamic66% affected pain assessment practice than stable patient and sedation interfering with pain assessment practice 76% compared to none sedation patients, patient inability to communicate 63%of the nurses influence pain assessment practice(12).

## 3. CONCEPTUAL FRAMEWORK

Based on the review of literature a conceptual framework developed that depicts the relationship between the nurses' practice of pain assessment and factors that affect their practice. According to this diagram, the socio demographic characteristics, personal behavior relatedfactor, organizational factors and patient related factors influenceon pain assessment practice of nurses (Figure1).

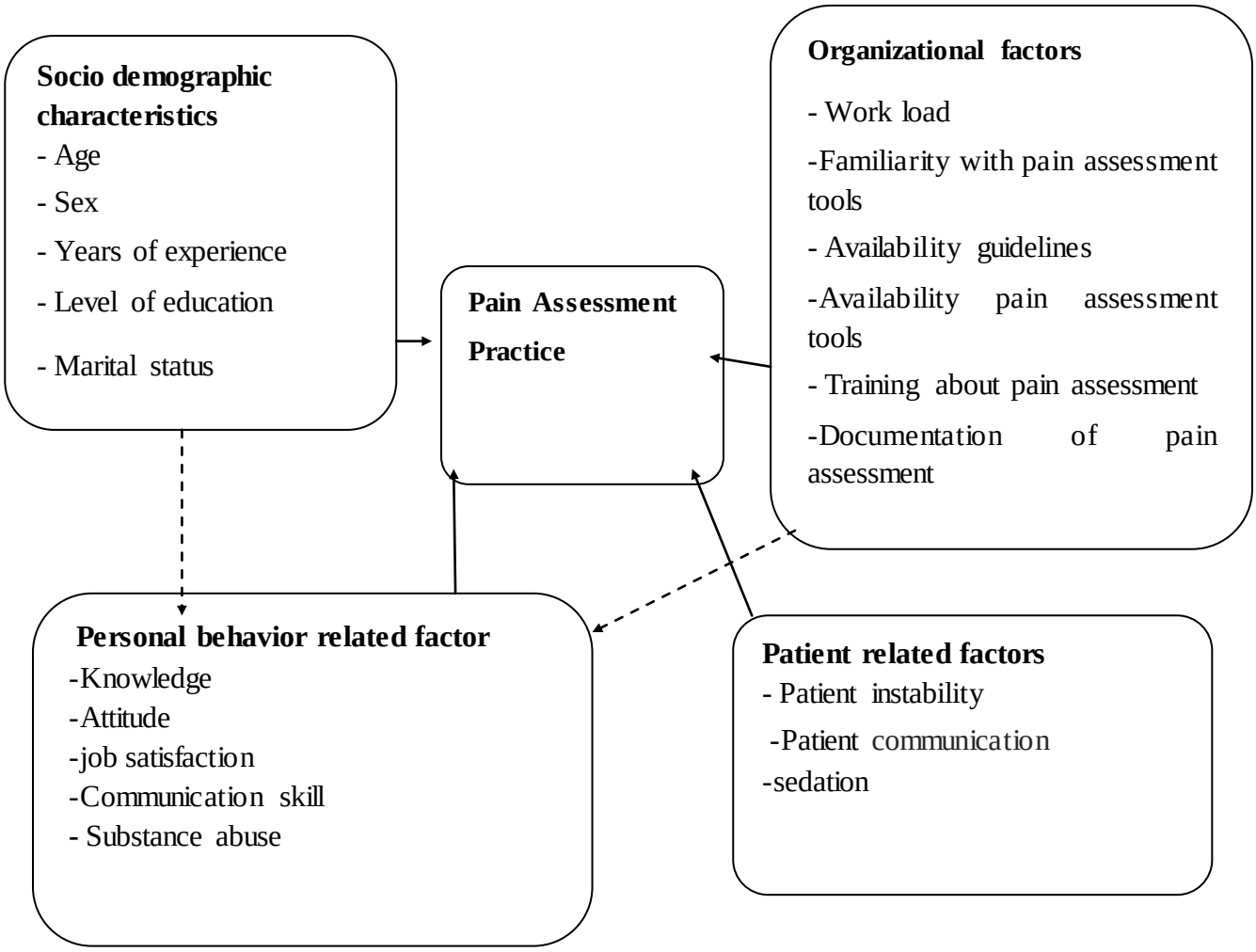


Figure 1:conceptual framework forpain assessment practice and associated factors among nurses inpublic hospitals of Bahir Dar city,Bahir Dar, Ethiopia, 2023.

# 4. OBJECTIVES

## 4.1. General objective

To assesspain assessment practice and associated factors among nurses inpublic hospitals of Bahir Dar city, Bahir Dar,Ethiopia, 2023.

## 4.2. Specific objectives

- To determinenurse pain assessment practicein public hospitalsofBahirDarcity.
- To identify factors associated withnurse pain assessment practice inpublic hospitals of Bahir Dar city.

# 5. METHOD AND MATERIALS

## 5.1. Study area and period

The study was conducted in Bahir Dar city, which is located 560kilometersfrom Addis Ababa. the total population is 406,433 from this 192,041are male and female 214,392(48).It has 17 kebeles. The topography of the area is estimated at 600–3100 meters above sea level, and its climate is hot and mild. A Simple random sampling with the lottery technique was used to select the study participants from the three public hospitals in Bahir Dar city, namely, FelegeHiwot compressive specialized referral hospital (FHCSH), TibebeGhion Specialized hospital (TGSH), and Addis Alem primary hospital (AAPH).

This study was conducted from November15 to December 15 /2023.

## 5.2. Study design

An institutional-based cross-sectional study design was used.

## 5.3. Population

### 5.3.1.Source population

The source population of the study was all nurses who were in public hospitals of Bahir Dar city.

### 5.3.2. Study population

The study population wasall nurses working with adult patients who were in public hospitals ofBahir Dar city during the study period.

## 5.4. Inclusion and Exclusion criteria

### 5.4.1. Inclusion criteria

All nurses who were adult patients in public hospitals.

### 5.4.2. Exclusion criteria

Nurses who are on annual leave, maternity leave and unable to participate in the study due to illness at the time of data collection were excluded.

## 5.5. Sample size determination

The sample size was determined by using single population proportion formula, taking the proportion of good pain assessment practice as 38.2% from previous study conducted in South Ethiopia Public Hospital(3) ,

95% confidence interval (CI) and 5% margin of error. Thus, the sample size is calculated as follows:

$$\frac{\left(Z\alpha/2\right)^2 p(q)}{d^2}$$

n= $\underline{(1.96)^2(0.382)(0.62)}$ = 363where

$(0.05)^2$

n = minimum sample size required for the study

Zα/2 = 1.96(standard normal distribution with confidence interval of 95% and α=0.05)

P = 0.382 (proportion of good pain assessment practice from previous study, (38.2%)

d = 0.05 (a tolerable margin of error)

q=0.618(1-p)

.Considering 10% non-response rate (37) the final sample size was**400** nurses

Table 1; Sample size calculation for the second objective, factors associated withpain assessment practices.

| S/N | Factors | CI | Power | OR | percent among non exposed | R(ratio) | Sample size(n) | None-Response | Final sample size | Reference |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Training pain assessment | 95% | 80 | 2.4 | 29.4 | 1 | 194 | 10 | 214 | (3) |
| 2 | Knowledge | 95% | 80 | 2.7 | 40.9 | 1 | 148 | 10 | 163 | (24) |
| 3 | work experience <2 >5 | 95% | 80 | 0.35 | 61.7 | 1 | 134 | 10 | 148 | (24) |

- Since we took the largest sample size, 400 was taken as the final sample size for this study.

## 5.6. Sampling Technique and Procedure

### 5.6.1. Sampling Technique

A simple random sampling technique was usedto selecte the final eligible study participants.

### 5.6.2. Sampling procedures

Initially, a list of all Bahir Dar city public hospitals has been obtained from the Amhara health bureau. Threepublichospitals(FelegeHiwotcompressive specialized referral hospital (FHCSH), TibebeGhion Specialized hospital (TGSH) and Addis Alem primary hospital (AAPH)are found in Bahir Dar city, Ethiopia. Then, the number of nurses was obtained from each institution. Then proportional allocation was made for each hospital. Finally, nurses working at each hospital wereselectedusing acomputer generated simple random sampling system. The number of nurse (400) was selected.

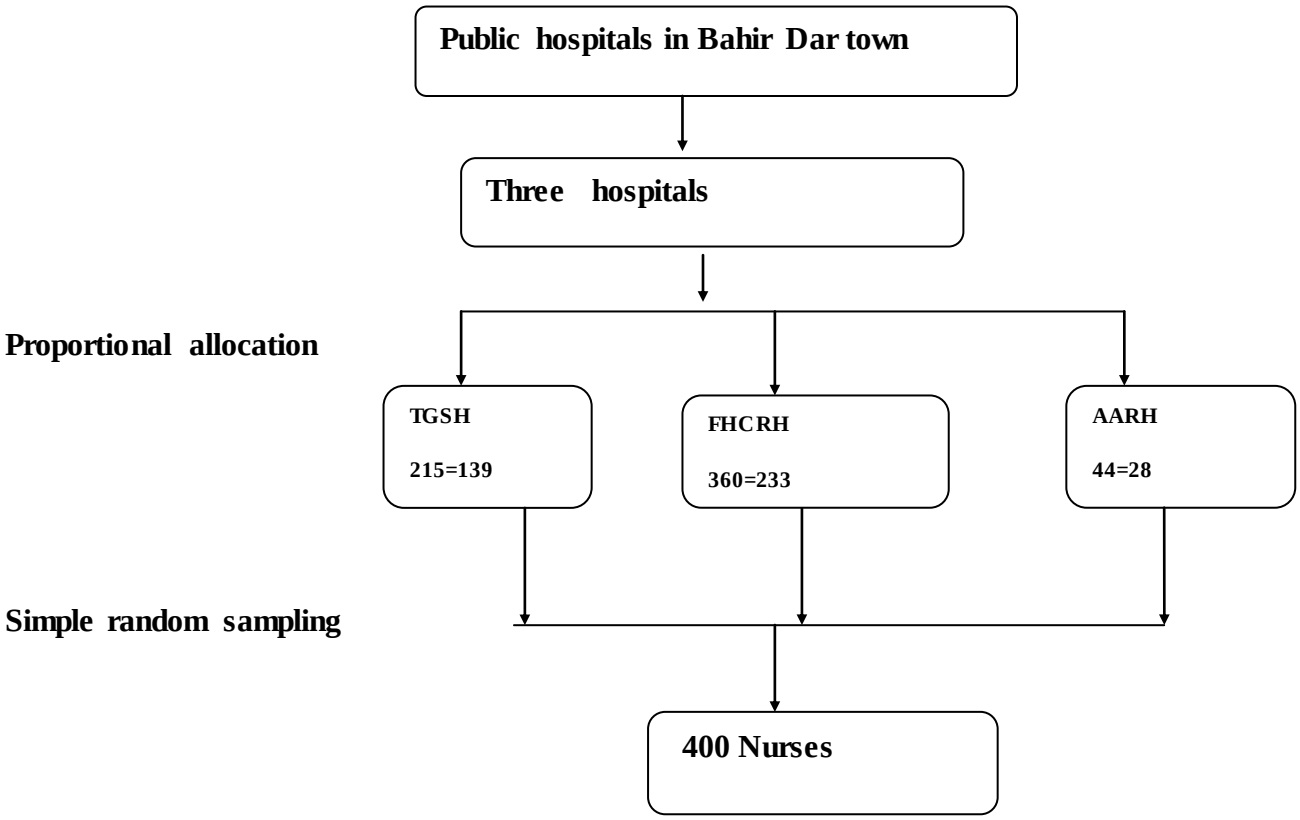


Figure 2: Schematic presentation of sampling technique forpain assessment practice and associated factors among nurses in public hospitals of Bahir Dar city,Bahir Dar, Ethiopia, 2023.

## 5.7. Variables

### 5.7.1. Dependent variable:

Pain assessment practice (good / low)

### 5.7.2. Independentvariables:

- **Socio-demographic factors (**Years of experience, level of education**,** age**,** sex**,** marital status).
- **Personal behavior relatedfactors(**substance abuse**,** attitude**,** knowledge,communication skill,job satisfaction).
- **Organizational factors** (Workload ,familiarity with pain assessment tools ,availability of guidelines,availability of pain assessment tools ,training about pain assessment ,documentation of pain assessment).
- **Patient related factors (**patient instability / patient hemodynamic status/, patient communication, sedation).

## 5.8. Operational definitions

**Pain assessment practice;**The practice of study participants was measured by using a structured observational checklist questionnaire containing 18 items with yes or no options. A value of 1 or 0 is scored for yes and no, respectively.

**Good practice:** Those respondents who scored above or equal to the third quartile answered a total of eighteen practice-related questions otherwise, low practice.

**Good knowledge**: Those respondents who scored above or equal to the third quartile answered a total of twenty knowledge-related questions.

**Favorable attitude**: Those respondents who scored above or equal to the third quartile answered a total of eleven attitude-related questions.

**Good communication skills**: Those respondents who scored above or equal to the third quartile answered a total of ten communication-related questions.

**Job satisfaction:** Those respondents who scored above or equal to the mean score answered a total of eight job satisfaction-related questions.

**Workload**: Those respondents who scored below the mean scored a total of nine workload-related questions.

**Pain assessment tools:** are instruments designed to measure pain including asking patient in words to assess specific type of pain and duration of pain and by using scale to quantify intensity of a patient pain(4).

**Substances Abuse; CAGE Questions Adapted to Include Drug Use,**Atotal score of two or more positive answers to the four questions is considered to fulfill the criteria of substance abuse(49).

### 5.9 Data collection instrument

A structured self-administered and observational checklist was developed in English language to collect data regarding dependant and independent variables. The questionnaire was developed after reviewing deferent related literatures and referring the national guidelines of pain assessment (9, 18, 24, 34, 37, 50-53). The questionnaire comprises five sections: (1). Questions regarding sociodemographic factor(2)**.**Personalbehavior related factor 3.Questions regarding pain assessment practice (4).Questions assessing organizational factors and (5).Question concerning patient related factors. The internal consistency reliability of the tool was also established. The overall Cranach's alpha of the tool was 0.78.

### 5.10. Data Collection Procedure

Data collection was facilitated by Six Bachelor of Science (BSC) holder nurses (four data collectors and two supervisors) after taking one day training to familiarize with data collection procedure and instrument on the objective and relevance of the study.

The data was collected through self administered questionnaires' and observing the pain assessment practice of nurses. Initially verbal informed consent was obtained from nurses after fully explaining the purpose, benefits and risk ofparticipating the study.

The purpose of the study was clearlyexplained to the participants and their verbal consent was obtained prior to data collection for self-administered questionnaire. Supervision was done regularly, to minimize the non-response rateforself-administered questionnaire.

## 5.11. Data quality control

The data was routinely monitored during data collection, and the obtained questionnaires were reviewed for completeness and accuracy during the collection and at the end of each day. Prior to the actual data collection, the items were tested on 20 (5%) of 400 nurses working out of the study area (Merawi Hospital), and the results were used to check the clarity and completeness of the questionnaire. Training was given to data collectors and supervisors, and the data collection process was supervised on a daily basis to maintain the quality of the data by the principal investigator. A problem encountered during the study period was discussed by the study team and solved. Computer frequencies and data sorting were used to check for missed variables, outliers, or other errors during data entry.

## 5.12. Data Processing and Analysis

First, the data were checked for completeness, and then a unique code was assigned for each completed questionnaire. Subsequently, the data was entered using Epi Data 4.6. The generated data was exported to a statistical package for social sciences (SPSS) version 25. Analysis was done with descriptive statistics by using frequency, percentage, and mean. Binary logistic regression analysis (bivariable and multivariable logistic regression analysis) was used in the analysis to assess the significance of the association between outcome and independent variables. The extent of multi-co linearity between independent variables was measured using the variance inflation factor (VIF), whether it was found within a tolerable range (less than 10) or not (above 10). Binary logistic regression model assumptions were also checked using a test like the Hosmer and Lemeshow goodness of fit to identify and exclude variables that cause poor fit in the model. The bivariable regression model was fitted for each explanatory variable. Accordingly, those variables having a p-value less than or equal to 0.25 in the bivariable analysis were taken as candidates for the multivariable logistic regression model. During the analyses, an adjusted odds ratio at a 95% confidence interval (CI) and a 0.05 P-value were considered. A P-value of less than 0.05 was taken as a significant association. Finally, a result was presented in text, tables, charts, and graphs.

## 5.13. Ethical clearance

An ethical clearance was obtained from the institutional review board (IRB) of Bahir Dar University, College of Medicine and Health Science School of Public Health. A formal letter was submitted to each hospital. Approvals were obtained from the participating hospitals, and explanations were made to study participants about the aims, objectives, benefits, and harms of the study. Oral consent was obtained from each respondent for the self-administered and observational checklist questionnaire. The confidentiality of responses was maintained throughout the study by not transferring the data to a third party.

## 5.14. Dissemination of Result

The final report was presented and submitted to Bahir Dar University, college of medicine and health science, school of public health. The final document copy was made available to those who need it in the university. The finding was distributed to the Amhara region health office and other organizations working on related areas and finally the findings of the study was sent for publication on scientific journals so that it was accessed by various researchers and readers.

# 6.RESULTS

## 6.1. Socio-demographic characteristics of respondents

Out of the 400 sampled nurses, 388(98%)were participated in the study.From a total of 388 nurses who participated in this study(206)53.1% were female. The age of the study respondents ranged from 20 to 46years,and near to half 186 (47.9%) of the participants were between the ages of twenty up to twenty nine. Among those most of the respondents, 346(89.2%), held above or equal degree and 42 (10.8%) had a college diploma. More than half, 244(62.9%) of the study participants, worked as nurses for more than 5 years, and the remaining 144 (37.1%) less than 5 years.

**Table2.Sociodemographic characteristics of nurses towards pain assessment practice among nurses in public hospitals, Bahir Dar, 2023 (n=388)**

| Variables | Categories | Frequency(n=388) | Percent (%) |
|---|---|---|---|
| sex | Male | 182 | 46.9 |
| | Female | 206 | 53.1 |
| Age group | 20-29 | 186 | 47.9 |
| | 30-39 | 177 | 45.6 |
| | ≥40 | 25 | 6.4 |
| Educational status | Diploma | 42 | 10.8 |
| | ≥degree | 346 | 89.2 |
| work experience | <5years | 144 | 37.1 |
| | ≥5years | 244 | 62.9 |
| Marital status | Married | 219 | 56.4 |
| | Single | 142 | 36.6 |
| | Other | 27 | 7.0 |

### 6.2. Knowledge of nurses towards pain assessment practice

Among respondents about knowledge toward nursing pain assessment practice was greater than or equal to third quartile, which is considered good knowledge regarding pain assessment practice, about 49% (95% CI: 43.9%–53.9%) of the study participants had good knowledge regarding nursing pain assessment practice. The majority of nurses know that appropriate assessment of pain is the first priority for effective pain management (81.4%), post-operative patient (80.9%), andclassification of pain (82.2%).

**Table3: Knowledge of nurses towards pain assessment practice among nurses in public hospitals, Bahir Dar, 2023(n=388)**

| SN | Variables | Categories | Frequency | Percent |
|---|---|---|---|---|
| 1 | Appropriate assessment of pain is the first priority for effective pain management | yes | 316 | 81.4 |
| | | no | 72 | 18.6 |
| 2 | Based on duration, Pain classified as: Acute and chronic pain | yes | 319 | 82.2 |
| | | no | 69 | 17.8 |
| 3 | Numeric rating scale ranging from(0)no pain at all to (10) the worst pain | yes | 254 | 65.5 |
| | | no | 134 | 34.5 |
| 4 | Accurate judgment of the intensity of the patient pain is the patient him/her self | yes | 262 | 67.5 |
| | | no | 126 | 34.5 |
| 5 | The impacts of unrelieved pain on psychological aspects include increased anxiety, impairs sleep ,delirium, demoralization, depression | yes | 318 | 82 |
| | | no | 70 | 18 |
| 6 | Post-operative patient | yes | 314 | 80.9 |
| | | no | 74 | 19.1 |
| 7 | Medical patient | yes | 308 | 79.4 |
| | | no | 80 | 20.6 |
| 8 | surgical patients | yes | 304 | 78.4 |
| | | no | 84 | 21.6 |
| 9 | Trauma patients | yes | 307 | 80.1 |
| | | no | 81 | 20.9 |
| 10 | sedated patients | yes | 300 | 77.3 |

| | | | | |
|---|---|---|---|---|
| | | no | 88 | 22.7 |
| 11 | Burns patients | yes | 293 | 75.5 |
| | | no | 95 | 24.5 |
| 12 | End-of-life patients | yes | 295 | 76 |
| | | no | 93 | 24 |
| 13 | Patient repositioning. | yes | 276 | 71.1 |
| | | no | 112 | 28.9 |
| 14 | End tracheal suctioning | yes | 277 | 71.4 |
| | | no | 111 | 28.6 |
| 15 | Wound care | yes | 290 | 74.7 |
| | | no | 98 | 25.3 |
| 16 | Drain removal | yes | 201 | 77.6 |
| | | no | 87 | 22.4 |
| 17 | Clenching fists/teeth | yes | 291 | 75 |
| | | no | 97 | 25 |
| 18 | Vocalization | yes | 294 | 75.8 |
| | | no | 94 | 24.2 |
| 19 | Guarding | yes | 313 | 80.7 |
| | | no | 75 | 19.3 |
| 20 | Restlessness | yes | 270 | 69.6 |
| | | no | 118 | 30.4 |
| | Over all knowledge level(good) | | 190 | 49 |

### 6.3. Attitudes of nursestowardspain assessment practice

Among all respondents, most 174 (44.85%) of them strongly agreed that nursing observable changes in vital signs can verify a patient's complaint of severe pain. Similarly, 176 (45%) agree that you feel competent in assessing pain in patients effectively. Additionally, 173 (44.59) strongly agree that the use of a pain assessment tool is important in determining if the patient is experiencing real pain. On the other hand, 18 (5%) respondents strongly disagree that a nurse's personal experience with pain affects the way the nurse assesses the pain of patients. Based on the third quartile value, near half (44.1%) (95% (CI: 39%–49%) of study participants had a favorable attitude.

### 6.4. Communication skills towards pain assessment practice

Among all respondents, most 213 (55%) agreed you should try to inform them about the decisions related to their therapy. Similarly, 210 (54%) agree that inform the family about the health conditions of patients. Additionally,186 (48%)strongly agree that inform the patients about positions that help alleviate pain. Based on the third quartile value, (27.3%) (95% CI: 22.8%–31.7%) of study participants had good communication.

**Table 4: Communication skills towards pain assessment practice among nurses in public hospitals, Bahir Dar, 2023(n=388)**

| Variables | strong dis agree Freq. Percent | | disagree Freq. Percent | | neutral Freq Percent | | agree Freq. Percent | | strong agree Freq Percent | |
|---|---|---|---|---|---|---|---|---|---|---|
| Inform the patient's right and obligation | 7 | 1.8 | 19 | 5 | 33 | 9 | 202 | 52 | 127 | 33 |
| Inform patients of the results when taking vital signs | 6 | 1.5 | 19 | 5 | 28 | 7 | 208 | 54 | 127 | 33 |
| Keep patients informed on the condition of their health | 7 | 1.8 | 17 | 4 | 33 | 9 | 193 | 50 | 138 | 36 |
| Inform the family the health conditions of critical patients | 12 | 3 | 14 | 3.6 | 28 | 7 | 210 | 54 | 124 | 32 |
| Inform them about the decisions related to their therapy | 15 | 4 | 14 | 4 | 32 | 8 | 213 | 55 | 114 | 29 |
| Provide information to the patients when they ask you | 13 | 3.3 | 10 | 3 | 30 | 8 | 203 | 52 | 132 | 34 |
| Polite and friendly towards your patients | 9 | 2 | 10 | 3 | 28 | 7 | 164 | 42 | 177 | 46 |
| Inform the patients about positions which help to | 12 | 3 | 15 | 4 | 29 | 8 | 146 | 38 | 186 | 48 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| alleviate pain | | | | | | | | | | |
| Dedicate adequate time to communicate with patients | 11 | 2.8 | 20 | 5 | 34 | 9 | 143 | 37 | 180 | 46 |
| Respond to the patients' concerns and complaints | 11 | 2.8 | 15 | 4 | 25 | 6 | 152 | 39 | 185 | 48 |
| Over all communication level(good ) | 106 | 27.3% | | | | | | | | |

### 6.5. Job satisfaction towards pain assessment practice

Among all respondents, most of them (27.32%) disagreed that I am satisfied with salary structures. Similarly, 106 (27.32%) are satisfied with the present performance appraisal effectively. Additionally, 104 (26.80%) are neutral and satisfied with transportation service. Based on the mean value, half (48.7%; 95%( CI: 43.7%–53.7%) of study participants were job-satisfied.

**Table 5: Job satisfaction toward pain assessment practice among nurses inpublic hospitals, Bahir Dar, 2023(n=388)**

| Variables | strong disagree | | disagree | | neutral | | agree | | strong agree | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Freq. | Perc | Freq. | Percent | Freq | Percent | Freq. | Percent | Freq | Percent |
| I am satisfied with salary structures | 104 | 27 | 106 | 27 | 72 | 18 | 82 | 21 | 24 | 6 |
| I am satisfied with colleagues inwork | 69 | 18 | 95 | 24 | 88 | 23 | 106 | 27 | 30 | 8 |
| I am satisfied with my supervisor | 62 | 16 | 92 | 23 | 100 | 26 | 104 | 27 | 30 | 8 |
| I am satisfied with the present performance appraisal | 52 | 13 | 98 | 25 | 106 | 27 | 88 | 23 | 44 | 11 |
| I am satisfied with working hours schedule | 72 | 19 | 92 | 23 | 93 | 24 | 86 | 22 | 45 | 12 |
| I am satisfied with transportation service | 62 | 16 | 81 | 21 | 104 | 27 | 99 | 26 | 42 | 10 |
| I am satisfied with duty payment | 81 | 21 | 81 | 21 | 103 | 26 | 86 | 22 | 37 | 9 |
| I am satisfied with my job | 62 | 16 | 87 | 2 | 99 | 25 | 99 | 26 | 41 | 10 |
| Over all (satisfied with job) | 189 | | 48.7% | | | | | | | |

### 6.6. Substance abuse

The prevalence of any substance abuse was 6 (1.5%). From substance abuse 3 (0.8%) werekhatabusers, 2 (0.5%) were abusers of cigarettes and 1 (0.3%) were alcohol abusers.

## 6.7.Practice of nurse towards pain assessment

Among respondents, nursing pain assessment practice was greater than or equal to third quartile, which is considered as good pain assessment practice, about 40.5% (95% CI: 35%–45%) of the study participants had good nursing pain assessment practice. The majority of nurses know to use vital signs as extra indicators of the intensity of a patient's pain (77.8%), assess pain at the starting time and frequency (74%), use pain assessment tools or scales for appropriate patient conditions (74.5%), assess the location and radiation of pain to other areas of the body (73.2%), and assess aggravating factors (72.9%).

**Table 6: Pain assessment practice among nurses inpublic hospitals, Bahir Dar, 2023(n=388)**

| | Variables | Categories | Frequency | Percent |
|---|---|---|---|---|
| 1 | Usevital signs as extra indicators of the intensity of a patient's pain | yes | 302 | 77.8 |
| | | no | 86 | 22.2 |
| 2 | Routinely use of pain assessment tool for patients | yes | 189 | 48.7 |
| | | no | 199 | 51.3 |
| 3 | Assess alleviating factors | yes | 225 | 58 |
| | | no | 163 | 42 |
| 4 | Assess aggravating factors | yes | 283 | 72.9 |
| | | no | 105 | 27.1 |
| 5 | Assessing description of the pain | yes | 189 | 48.7 |
| | | no | 199 | 51.3 |
| 6 | Assess of location and radiation of pain to other area of the body | yes | 284 | 73.2 |
| | | no | 104 | 26.8 |
| 7 | Use pain assessment tool or scales for appropriated patient condition | yes | 289 | 74.5 |
| | | no | 99 | 25.5 |
| 8 | Assess pain of starting time and frequency | yes | 287 | 74 |
| | | no | 101 | 26 |
| 9 | Nurse done physical examination, Inspection, palpation, neurological examination and musculoskeletal system examination | yes | 239 | 61.6 |
| | | no | 149 | 38.4 |
| 10 | Routinely screen patients for pain upon admission by asking about the presence of pain | yes | 247 | 63.7 |
| | | no | 141 | 36.3 |

| | | | | |
|---|---|---|---|---|
| 11 | Assessing pain before and after initiating management | yes | 270 | 69.6 |
| | | no | 118 | 30.4 |
| 12 | Observing patient behaviors facial expression i.e grimacing in pain assessment | yes | 244 | 62.9 |
| | | no | 144 | 37.1 |
| 13 | Assess type of pain | yes | 247 | 63.7 |
| | | no | 141 | 36.3 |
| 14 | Document pain assessment scores | yes | 226 | 58.2 |
| | | no | 162 | 41.8 |
| 15 | Discuss pain assessment scores during a nurse-to-nurse report | yes | 216 | 55.7 |
| | | no | 172 | 44.3 |
| 16 | Evaluating psychological, social and cultural background among patients with pain | yes | 220 | 56.7 |
| | | no | 168 | 43.3 |
| 17 | Discussing pain assessment scores during unit rounds | yes | 197 | 50.8 |
| | | no | 191 | 49.2 |
| 18 | Use self-report of pain as a valid measure of pain for verbal or none verbal communicate patient | yes | 267 | 68.8 |
| | | no | 121 | 31.2 |
| | Over all practice(good practice) | | 157 | 40.5 |

The Overall practice (good /low) was(40.5%). This indicates that nurses had low practice towards pain assessment.

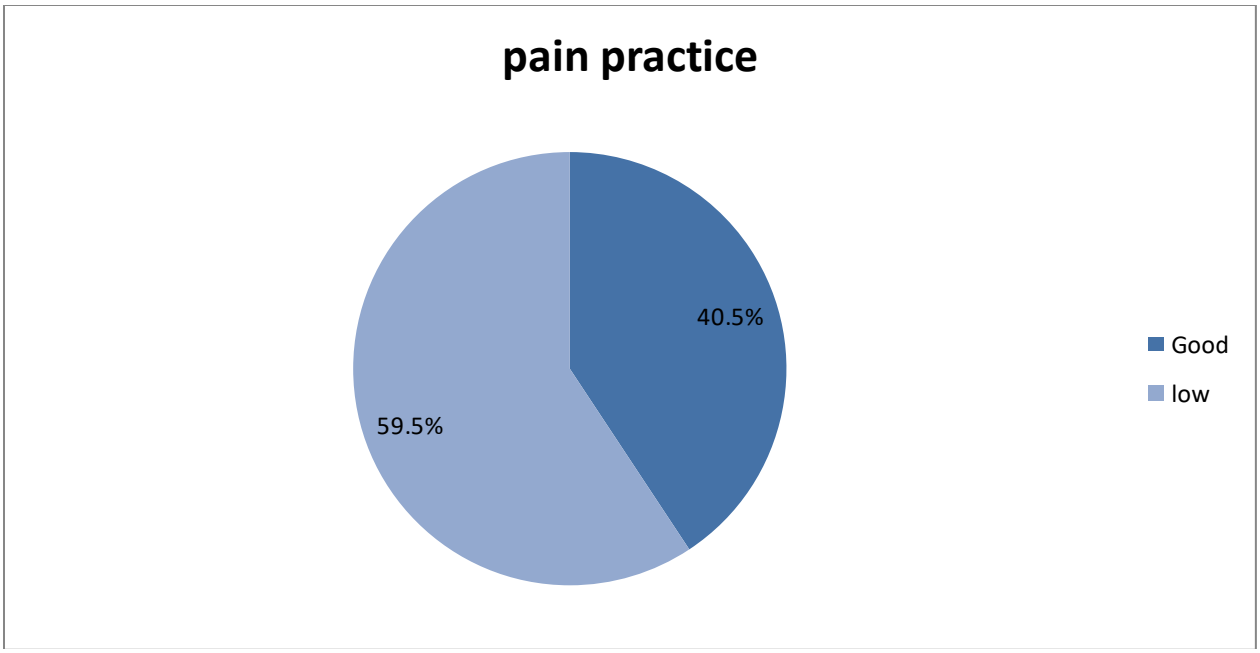


Figure 3: Pain assessment practice among nurses in public hospitals, Bahir Dar, 2023 (n=388)

### 6.8. Organizationandpatient related factors

Organizational factors that could potentially affect nursing pain assessment practice were assessed in this study. All most half of the respondents, 188 (48.5%), had received in-service training regarding nursing pain assessment. The majority of respondents,292(75.3%), were aware of the availability of pain assessment tools. Majority ofstudy participants ,304 (78.4%) of the documentation of pain assessment.Morethanhalfof respondents,239 (61.6%), followed availability guidelines. Almost half of the study participants 244(62.9%) were familiar with pain assessment tools in their respective hospitals.

Patient-related factors that could potentially affect nurse practice were assessed in this study. Beyond three-fourths of respondents, 281(72.4%) said that caring patients have the ability to communicate. Similarly, more than two-thirds 271(69.8%) of study participants said that sedation interfered with pain assessment.

**Table 7: Organizational and patient related factors affecting pain assessment practice among nurses in public hospitals, Bahir Dar, 2023 (n=388)**

| Variables | Categories | Freq. | Percent |
|---|---|---|---|
| Availability of pain assessment tools | yes | 292 | 75.3 |

| | | | |
|---|---|---|---|
| | no | 96 | 24.7 |
| Familiarity with pain assessment tools | yes | 244 | 62.9 |
| | No | 144 | 37.1 |
| Training attended about pain assessment | yes | 188 | 48.5 |
| | No | 200 | 51.5 |
| Availability guidelines | yes | 239 | 61.6 |
| | No | 149 | 38.4 |
| Documentation of pain assessment score | Yes | 304 | 78.4 |
| | No | 84 | 21.6 |
| Patient stability on pain assessment | yes | 253 | 65.21 |
| | No | 135 | 34.79 |
| Patient ability to communicate | yes | 281 | 72.4 |
| | No | 107 | 27.6 |
| Sedation interfering with pain assessment | yes | 271 | 69.8 |
| | No | 117 | 30.2 |

### 6.9. Organizational factors workload affecting the pain assessment practice

Among all respondents, most of the 160 (41.24%) agreed that I am working less than what is expected of me due to job scope; similarly, 154 (39.69%) agreed that I always finish my work on time. Additionally, 89 (22.94%) disagree that the organization is fully utilizing my current effort for the job. Based on the mean value, half (52.8%)(95%( CI: 47.85%–57.8%) of study participants had work loaded.

**Table 8:Organizational factors workload affecting pain assessment practice among nurses in public hospitals, Bahir Dar, 2023 (n=388)**

| Variables | strong disagree Freq. Percent | | disagree Freq. Percent | | neutral Freq Percent | | agree Freq. Percent | | strong agree Freq Percent | |
|---|---|---|---|---|---|---|---|---|---|---|
| The organization is fully utilizing my current effort job | 35 | 9 | 89 | 23 | 111 | 29 | 119 | 31 | 34 | 9 |
| I always finish my work on time | 9 | 2 | 71 | 18 | 110 | 28 | 154 | 40 | 44 | 11 |
| I have enough time to complete my daily tasks. | 19 | 5 | 69 | 18 | 112 | 2 9 | 148 | 38 | 39 | 10 |
| I perform duties with a job description | 17 | 5 | 54 | 14 | 89 | 23 | 160 | 41 | 68 | 18 |
| I am working less than expected from me due to job scope | 17 | 4.4 | 54 | 14 | 89 | 23 | 160 | 41 | 68 | 18 |
| I was assigned according to my educational specialty | 39 | 10 | 75 | 19 | 81 | 21 | 127 | 33 | 66 | 17 |
| The amount of work load in my current job is reasonable | 23 | 5.9 | 56 | 14 | 73 | 19 | 150 | 39 | 86 | 22 |
| The work load was equally distributed among all workers in the organization | 26 | 6.7 | 71 | 18 | 83 | 21 | 134 | 35 | 74 | 19 |
| My organization was rewarding and appraising me for my additional work | 47 | 12 | 76 | 20 | 83 | 21 | 112 | 29 | 70 | 18 |
| Over all not have workload | 183 | | | | | 47.2% | | | | |

### 6.10; Bi variable and multivariable binary logistic regression model factors associated with pain assessment practice

For the inferential analysis of the data, bi-variable and multivariable binary logistic regressions were done. Crude and adjusted odds ratios with a 95% confidence interval were calculated to determine the association between pain assessment practices and independent variables.

According to bi-variable analysis,sex, good knowledge level, favorable attitude, communication skills, availability of pain assessment tools, familiarity with pain assessment tools, training attended about pain assessment, availability guidelines, documentation of pain assessment, patient communication on pain assessment, sedation interfering with pain assessment, and were found to have a p-value ≤0.25and fitted in to the multivariable model. In the multivariable model

the following four variables, namely, Knowledge level, attitude status, sex and training were found to be significantly associated with pain assessment practice.

Based on findings from the multivariable binary logistic regression nurses who had good knowledge and those who had a favorable attitude towards nursing pain assessment practice were almost two times (AOR = 1.619,95%CI:(1.063-2.465) and two times (AOR =1.585 ,95%CI:(1.034-2.429) more likely to practice good nursing pain assessment as compared to their counterparts, respectively.

Findings indicated that nurses with attendedtraining towards pain assessment practice were two times (AOR = 1.743, 95% CI :( 1.139-2.669) more likely to have good pain assessment practice as compared to their counterparts. This study's findings indicated that nurses who had female pain assessment practice were two times (AOR=1.644, 95%CI:1.075-2.514)more likely to have good pain assessment practice than those nurses who weremale. The Homer and Lemeshow test was checked for model goodness of fit, which was 0.86.

**Table 9:Bi-variable and multi variable binary logistic regression model analysis factors associated with pain assessment practice among nurses inpublic hospitals, Bahir Dar, 2023(n=388)**

| Variables | | Practice level | | Bi variable logistic regression | multi variable logistic regression | |
|---|---|---|---|---|---|---|
| | | Good(n) | poor(n) | COR(95%CI) | AOR(95%CI) | P-Value |
| Sex | male | 60 | 122 | 1 | | |
| | female | 97 | 109 | 1.809(1.198-2.734) | 1.644(1.075-2.514) | 0.022* |
| Knowledge | Poor | 68 | 130 | 1 | | |
| | Good | 89 | 101 | 1.685(1.119-2.536) | 1.619 (1.063-2.465) | 0.025* |
| Attitude | Unfavorable | 74 | 143 | 1 | | |
| | Favorable | 83 | 88 | 1.823(1.209-2.748) | 1.585(1.034-2.429) | 0.034* |
| communication | poor | 110 | 173 | 1 | | |
| skills | good | 47 | 48 | 1.274(0.810-2.004) | 1.117(0.687-1.814) | 0.656 |

| | | | | | | |
|---|---|---|---|---|---|---|
| Availability of tools | no | 30 | 66 | 1 | | |
| | yes | 127 | 165 | 1.693(1.038-2.763) | 1.512(0.900-2.538) | 0.118 |
| Familiarity of tools | No | 48 | 96 | 1 | | |
| | Yes | 109 | 135 | 1.615(1.052-2.479) | 1.139(0.649-1.999) | 0.651 |
| Training attended | no | 65 | 135 | 1 | | |
| | yes | 92 | 96 | 1.990(1.319-3.004) | 1.743(1.139-2.669) | 0.010* |
| Availability of guidelines | no | 47 | 102 | 1 | | |
| | yes | 110 | 129 | 1.851(1.205-2.842) | 1.291(0.775-2.150) | 0.327 |
| Documentation | no | 25 | 59 | 1 | | |
| | yes | 132 | 172 | 1.811(1.077-3.047) | 1.140(0.604-2.152) | 0.687 |
| patient communication | no | 38 | 69 | 1 | | |
| | yes | 119 | 162 | 1.334(0.841-2.116) | 1.244(0.769-2.012) | 0.373 |
| Sedation | no | 41 | 76 | 1 | | |
| | yes | 116 | 155 | 1.387(0.885-2.175) | 1.072(0.586-1.962) | 0.821 |

AOR =adjusted odds ratio COR=crude odds ratio CI= confidence interval

## 7. DISCUSSION

This cross-sectional study aimed to assess pain assessment practice and associated factors among nurses in public hospitals in Bahir Dar city, Bahir Dar, Ethiopia.

This study revealed that the pain assessment practice of nurses in public hospitals in Bahir Dar city was low. The multivariable binary logistic regression analysis showed that good knowledge, afavorable attitude, attending training for pain assessment and sex were significantly associated with pain assessment practices.

In this study, 40.5% (95% CI=35%–45%) of nurses have good nurse pain assessment practices.

According to this study, the findings were lower than the previous studies inSouth West Ethiopia 60.5%(18).

On the other handthis study findingwas also lower than studies conducted in Rwanda 78%(35), Ghana 60%(2) Jordan 89.7% (31),India 48%(32), Bangladesh 75.8%(29).

This difference might be due to a difference in data collection method, which means that the current study used observational a checklist but the previous study used a self-administered

questionnaire to collect data, which may cause pain assessment practice to be overestimated. Another possible reason is explained by the operation of the score level, because the previous study classified the score based on the average mean and Additional reasons might be due to nurses' workload and lack of motivation due to salary.

Furthermore, this finding was also found to be higher than some previous studies in Addis Ababa 34.1%(54), Egypt 34.3%(55),Nigeria32%(12),Uganda (23.5%)(34).This might be due to the difference in awareness and accessibility of trainings on pain assessment tools, the availability of pain assessment tools, guidelines, and access to best practices, ongoing monitoring of the delivery of care, and the presence of a national pain strategy. Other possible reasons for the contrary might be due to differences in the size of the study samples.

In this study, among the respondents who used pain assessment tools for appropriate patients (74.5%) and routinely used tools, 48.7%.The finding is higher than a study conducted in Uganda and Bangladesh(30, 34). This might be attributed to the non-complexity and ease of the tool.

In this study, 49% (95% CI: 43.9%–53.9%)of the respondents had good knowledge of pain assessment practice. This study's finding was lower than studies in Zimbabwe, which revealed64%(56)and Bangladesh(84%)(30).The possible explanation could be due to the absence of pain assessment training and the availability of pain assessment guidelines. In addition, the difference in attending standard training on pain assessment means that participants were more trained about pain assessment as compared to the current study, which helps them enhance their knowledge of pain assessment practice. There are pieces of evidence that report that nurses who attended training regarding pain assessment practice have good pain assessment practices as compared to their counterparts.

On the other hand, this figure is higher than a study done in the Arsizonal hospital 45.1%(57), Malaysia25%(58). This can be due to the educational status of the participants, in which the present study participants had more of a bachelor's degree. In fact, as educational level of the participants increased, there level of understanding would be improved.

In this study, findings indicated that nurses with good knowledge of pain assessment practice were more likely to have good pain assessment practice than those nurses who had poor knowledge. This result was supported by studies in Amhara (42),Oromia(59).This is due to the fact that good knowledge is a means or an input for good practice, so nurses who have poor

knowledge practice poorly. An inconsistency in knowledge and scoring of these behaviors may call into question the clinical usefulness and application of pain assessment tools in the real world, which results in poor practice. It might also be due to the fact that as knowledge increases, its application in practice increases. Other possible reasons could be that knowledgeable nurses are aware of how important pain assessment is for a good health outcome. Additional might be familiar with operational standards and guidelines and ask the responsible body to access the necessary pain assessment practice materials, which are potentially increasing their pain assessment practice.

The study also found that a favorable attitude toward assessing pain was significantly associated with pain assessment practices in adult patients. This study revealed that those who had a favorable attitude were nearly two times more likely to have good pain assessment practices than those who did not. This finding is supported by previous studies in Addis Ababa, Eritrea Hospital, Ghana and Jordan(60-63).The possible explanation might be those nurses who were interested on their profession and nursing pain assessment enhances their nursing pain assessment practice and also this could be due to an increased favorable attitude rather than increased pain assessment practice.

According to this study, attending training was the other factor that was significantly associated with good pain assessment practice. The odds of having good pain assessment practice among nurses who attended training on pain assessment were at most two times higher than their counterparts. This was consistent with what has been found in Uganda and Rwanda.(9, 64).However, having training on painassessment was not associated with pain assessment practice, according to the study (24) A similar conclusionwas reached by previous studies wherein a lack of training on pain assessment leads to poor pain assessment practice(5, 65). This may be due to the fact that nurses' who attend training can gain more knowledge and practice about pain assessment and how to diagnose pain. From this, it can be observed that attending on-the-job training had a positive effect on the extent of nurses 'pain assessment practice. Another possible explanation may be due to the fact that attending training can help nurses gain more knowledge on how to manage pain, which can improve their pain assessment practice. In other words, it serves to update the nurses' pain assessment knowledge and practical skills and improve the best practices for fulfilling their responsibilities in the regular assessment and

management of pain for patients and also this could have the impact of motivating the nurses to read and do in collaboration with their staffs for the effective assessment.

Another finding of this study was that female nurses had almost two more likely assessment practices than males. This finding is supported by previous studies in southern Ethiopia (17).The possible explanation could be due to more females attending training.

## 8. STRENGTH AND LIMITATIONS OF THE STUDY

Since this study strength used an observational checklist to assess the pain assessment practice of nurses and added unaddressed factors. On the other hand, this study has limitations in that it is social desirability biased and does not address the qualitative aspect.

## 9. CONCLUSION

This study revealed that pain assessment practice was low in public hospitals in Bahir Dar city. The multivariable binary logistic regression analysis showed that good knowledge, a favorable attitude, sex, and attending training in pain assessment were significantly associated with pain assessment practices. Therefore, it is better to put further effort into improving pain assessment practice by providing training on standards of pain assessment, inspiring readers, and providing guidelines for reading to enhance knowledge, attitudeand practice.

## 10.RECOMMENDATION

It has been accepted that nursing pain assessment practice is a very important aspect of professional practice for nurses. Based on the findings of this study, the following recommendations are forwarded:

- Health institutions should be designing and implementing sustained continuing training opportunities for nurses regarding pain assessment. Build a pain assessment team and discussions on pain assessment and also to emphasis the need for routine pain assessment and should have a system for monitoring and evaluation of pain assessment.
- Nursing leaders (nursing directors) should adjust training programs for all nurses in order to increase their knowledge, attitudes and practice.
- Nurses who are recommended to have updated themselves on their pain assessment practice and knowledge regarding pain assessment practice through continuous professional development, attending in-service training, and online reading.
- Researchers need to carry out qualitative studies in order to address the problem in a wider context.

.

## 11. REFERENCE


1. Kiwanuka F, Masaba R. Nurses' knowledge, attitude and practices regarding pain assessment among patients with cancer at Uganda Cancer Institute. Journal of Research in Clinical Medicine. 2018;6(2):72-9.
2. Imoro MA. Practice of pain assessment in critically Ill patients among nurses at the tamale teaching hospital. Diverse Journal of Multidisciplinary Research. 2019;1(1):1-6.
3. Melile Mengesha B, Moga Lencha F, Ena Digesa L. Pain assessment practice and associated factors among nurses working at adult care units in public hospitals in Wolaita Zone, Southern Ethiopia, 2021. BMC nursing. 2022;21(1):1-7.
4. Sueann Penrose c. Pain assessment and measurement. The Royal Children's Hospital Melbourne. 2022.
5. Onianwa PO, Alonge TO, Otegbayo JA, Ike EU, Chukura FO, Are OO, et al. Pain as 5th vital sign: impact of pain assessment training program on Nigerian nurses knowledge of pain management. International Journal of Nursing and Midwifery. 2017;9(11):129-35.
6. Herr K, Coyne PJ, McCaffery M, Manworren R, Merkel S. Pain assessment in the patient unable to self-report: position statement with clinical practice recommendations. Pain management nursing. 2011;12(4):230-50.
7. Kotfis K, Strzelbicka M, Zegan-Barańska M, Safranow K, Brykczyński M, Żukowski M, et al. Validation of the behavioral pain scale to assess pain intensity in adult, intubated postcardiac surgery patients: A cohort observational study-POL-BPS. Medicine. 2018;97(38).
8. Barr J, Fraser GL, Puntillo K, Ely EW, Gélinas C, Dasta JF, et al. Clinical practice guidelines for the management of pain, agitation, and delirium in adult patients in the intensive care unit. Critical care medicine. 2013;41(1):263-306.
9. Kizza IB. Nurses' knowledge and practices related to pain assessment in critically ill patients at Mulago hospital, Uganda: Muhimbili University of Health and Allied Sciences; 2012.
10. Wondimagegn ZG, Hailemariam HA, Meshesha TA, Olijra S. Knowledge, practice and factors associated with pain management for adult critical Ill patients among nurses working in federal hospitals of Addis Ababa Ethiopia 2020. American Journal of Clinical and Experimental Medicine. 2021;9(2):28-39.
11. Strode I, Seimane S. Assessment of acute pain in nursing practice in latvia. Int J Collaborative Research on Internal Medicine and Public Health. 2011;3:320-6.

12. Olufunke OD. Factors associated with utilization of pain assessment tools in pain management among nurses in selected hospitals in Ekiti State. International Journal of Caring Sciences. 2018;11(1):163-70.

13. Strode I. Assessment of acute pain in nursing practice in latvia. International Journal of Collaborative Research on Internal Medicine & Public Health. 2011;3(4):0-.

14. AL-Sayaghi K, Fadlalmola H, Aljohani W, Alenezi A, Aljohani D, Aljohani T, et al. Nurses' Knowledge and Attitudes Regarding Pain Assessment and Management in Saudi Arabia. Healthcare 2022, 10, 528. s Note: MDPI stays neu-tral with regard to jurisdictional claims in …; 2022.

15. Dechasa A, Kurke A, Abdisa D, Gurmu Y. Post-operative pain management practice and associated factors among nurses working at public hospitals, in Oromia region, Ethiopia. medRxiv. 2022.

16. Robleda G, Sillero-Sillero A, Puig T, Gich I, Baños J-E. Influence of preoperative emotional state on postoperative pain following orthopedic and trauma surgery. Revista latino-americana de enfermagem. 2014;22:785-91.

17. Tadesse F, Yohannes Z, Beza L. Knowledge and practice of pain assessment and management and factors associated with nurses' working at Hawassa University Referral Hospital, Hawassa city, South Ethiopia. Res Rev: J Health Prof. 2016;6(3):24-8.

18. Negussie BB, Gizachew EM, Gizaw AB, Lemma KT, Mamo DE. Post-operative pain assessment knowledge and practice among nurses working at Jimma University Medical Center, South West Ethiopia. International Journal of Africa Nursing Sciences. 2022;16:100406.

19. Rose L, Haslam L, Dale C, Knechtel L, McGillion M. Behavioral pain assessment tool for critically ill adults unable to self-report pain. American Journal of Critical Care. 2013;22(3):246-55.

20. Wells N, Pasero C, McCaffery M. Improving the quality of care through pain assessment and management. Patient safety and quality: An evidence-based handbook for nurses. 2008.

21. Alderson S, Mckechnie S. Unrecognised, undertreated, pain in ICU—Causes, effects, and how to do better. 2013.

22. Abdalrahim MS, Majali SA, Bergbom I. Jordanian surgical nurses' experiences in caring for patients with postoperative pain. Applied Nursing Research. 2010;23(3):164-70.

23. Liyew B, Dejen Tilahun A, Habtie Bayu N. Knowledge and Attitude towards Pain Management among Nurses Working at University of Gondar Comprehensive Specialized Hospital, Northwest Ethiopia. Pain Research and Management. 2020;2020.

24. Ayenew T, Melaku B, Gedfew M, Amha H, Bishaw KA. Nurses' knowledge, practice, and associated factors of pain assessment in critically ill adult patients at public hospitals, Addis Ababa, Ethiopia. International Journal of Africa Nursing Sciences. 2021;15:100361.

25. Hennessee P. Knowledge and attitudes of nurses toward pain management: Gardner-Webb University; 2012.

26. McCaffrey M, Ferrell BR. Nurses' knowledge of pain assessment and management: How much progress have we made? Journal of pain and symptom management. 1997;14(3):175-88.

27. Topolovec-Vranic J, Canzian S, Innis J, Pollmann-Mudryj MA, McFarlan AW, Baker AJ. Patient satisfaction and documentation of pain assessments and management after implementing the adult nonverbal pain scale. American Journal of Critical Care. 2010;19(4):345-54.

28. Glowacki D. Effective pain management and improvements in patients' outcomes and satisfaction. Critical care nurse. 2015;35(3):33-41.

29. Basak S. Knowledge and attitudes of nurses and their practices regarding post-operative pain management in Bangladesh: Prince of Songkla University; 2010.

30. Mondol S, Muhammad F, Chowdhury A. Nurses' knowledge and practices related to pain assessment in critically ill patients in a selected private hospital in Bangladesh. International Journal of Community Medicine and Public Health. 2018;5(10):4219-24.

31. Hamdan KM. Nurses' assessment practices of pain among critically ill patients. Pain Management Nursing. 2019;20(5):489-96.

32. Sorifa B, Mosphea K. Knowledge and practice of staff nurses on palliative care. IJHRMLP. 2015;1(2):41-5.

33. Basal AAE-A, Younis GAE-H. Critical care nurses' knowledge, practice, obstacles and helpful measures towards palliative care for critically Ill patients. American Journal of Nursing. 2017;6(4):293-303.

34. Kizza I, Muliira J. Nurses' pain assessment practices with critically ill adult patients. International nursing review. 2015;62(4):573-82.

35. Umuhoza O. Assessment of knowledge and practice of post-operative pain management among nurses working in surgical ward in Rwandan referral hospital at RMH and KUTH: University of Rwanda; 2017.

36. Tadesse F, Kassa Z, Demisse L. Knowledge and Practice of Pain Assessment and Management and Factors Associated with Nurses' Working at Hawassa University Referral Hospital, Hawassa city, South Ethiopia. 2016.

37. Kamotho HW. Practices of nurses in management of pain among critically ill non-verbal adult patients in the critical care unit, Kenyatta National Hospital: University of Nairobi, Kenya; 2012.

38. Olisarova V, Tothova V, Cerveny M, Dvorakova V, Sadilek P, editors. Pain Assessment: Benefits of Using Pain Scales for Surgical Patients in South Bohemian Hospitals. Healthcare; 2021: MDPI.

39. Birhan E. The practice of nurses and associated factors towards pain assessment in critically Ill adult patients in referral hospitals of Amhara Region, Ethiopia, 2019. J Intensive Crit Care. 2020;6(4):16.

40. Kvist T, Voutilainen A, Mäntynen R, Vehviläinen-Julkunen K. The relationship between patients' perceptions of care quality and three factors: nursing staff job satisfaction, organizational characteristics and patient age. BMC health services research. 2014;14(1):1-10.

41. Manwere A, Chipfuwa T, Mukwamba MM, Chironda G. Knowledge and attitudes of registered nurses towards pain management of adult medical patients: a case of Bindura hospital. Health Science Journal. 2015;9(4):0-.

42. Jaleta D, Tuji T, Wake A. Practice towards Postoperative Pain Management and Associated Factors among Nurses Working in Referral Hospitals: A Cross-sectional Study. J Anesth Clin Res. 2020;11:982.

43. Al-Sayaghi KM, Fadlalmola HA, Aljohani WA, Alenezi AM, Aljohani DT, Aljohani TA, et al., editors. Nurses' Knowledge and Attitudes Regarding Pain Assessment and Management in Saudi Arabia. Healthcare; 2022: MDPI.

44. Wubneh M, Emishaw S, Animaw W. Level of Nurses to Patients Communication and Perceived Barriers in Government Hospitals of Bahir Dar City, Ethiopia, 2020. Clinical Journal of Nursing Care and Practice. 2020;4(1):012-26.

45. Meressa K, Mossie A, Gelaw Y. Effect of substance use on academic achievement of health officer and medical students of Jimma University, Southwest Ethiopia. Ethiopian journal of health sciences. 2009;19(3).

46. Rose L, Smith O, Gélinas C, Haslam L, Dale C, Luk E, et al. Critical care nurses' pain assessment and management practices: a survey in Canada. American Journal of Critical Care. 2012;21(4):251-9.

47. Khatun MR, Rafaat Choudhury D, Haque A, Abbas MG, Sultana H, Alam MR. Knowledge and Practice on Pain Management among Nurses Working in Palliative Care Unit. 2022.

48. Administration BDC. Population size 2020/2021.

49. Aklog T, Tiruneh G, Tsegay G. Assessment of substance abuse and associated factors among students of debre markos poly technique college in debre markos town, East Gojjam Zone, Amhara Regional State, Ethiopia, 2013. Global journal of medical research. 2013;13(4):1.

50. P. Bader (chair) DE, V. Fonteyne, G. De Meerleer, E.G., Papaioannou JHV. Guidelines onPain Management. researchgate. January 2011.

51. Temesgen MH, Brihanu A, bekele Teshome Z. Post-operative pain assessment, management compliance with WHO guidelines and its barriers in hospitals of West Shoa zone, central of Ethiopia, 2021. Annals of Medicine and Surgery. 2022;84:104901.

52. Mutinda JN, Mutisya AK, Oluchina S. Analysis of Commonly Used Pain Assessment and Management Tools in Palliative Care: A Cross-Sectional Study in Embu and Machakos County Referral Hospitals-Kenya. African Journal of Health Sciences. 2020;33(3):45-55.

53. Sloan PA, Vanderveer BL, Snapp JS, Johnson M, Sloan DA. Cancer pain assessment and management recommendations by hospice nurses. Journal of Pain and Symptom Management. 1999;18(2):103-10.

54. Kassa RN, Kassa GM. Nurses' attitude, practice and barrier s toward cancer pain management, Addis Ababa, Ethiopia. J Cancer Sci Ther. 2014;6(12):483-7.

55. Basal A, Younis GAE-H. Critical care nurses' knowledge, practice, obstacles and helpful measures towards palliative care for critically Ill patients. American Journal of Nursing. 2017;6(4):293-303.

56. Manwere A, Chipfuwa T, Mukwamba MM, Chironda G. Knowledge and attitudes of registered nurses towards pain management of adult medical patients: a case of Bindura hospital. Health Science Journal. 2015;9(4):1.

57. Wurjine TH, Nigussie BG. Knowledge, attitudes and practices of nurses regarding to post-operative pain management at hospitals of Arsi zone, Southeast Ethiopia, 2018. Women's Health. 2018;7(5):130-5.

58. SE H, YC C. Survey of nurses' knowledge and attitude regarding post operative pain management at a teaching hospital in Malaysia. Medicine and Health. 2009:47-52.

59. Dechasa A, Kurke A, Abdisa D, Gurmu Y. Post-operative pain management practice and associated factors among nurses working at public hospitals, in Oromia region, Ethiopia. medRxiv. 2022:2022.04. 14.22273889.

60. Emiru M. Assessment of Adult Postoperative Pain Management Practice among Nurses Working in Addis Ababa Public Hospitals, Addis Ababa, Ethiopia, 2015: Addis Ababa University; 2015.

61. Menlah A, Garti I, Amoo SA, Atakro CA, Amponsah C, Agyare DF. Knowledge, attitudes, and practices of postoperative pain management by nurses in selected district hospitals in Ghana. SAGE Open Nursing. 2018;4:2377960818790383.

62. Alzghoul BI, Abdullah NAC. Pain management practices by nurses: an application of the knowledge, attitude and practices (KAP) model. Global journal of health science. 2016;8(6):154.

63. Kahsay DT, Pitkäjärvi M. Emergency nurses knowledge, attitude and perceived barriers regarding pain Management in Resource-Limited Settings: cross-sectional study. BMC nursing. 2019;18(1):1-13.

64. Tuyishimire ML. Assessment of nurses' knowledge and practices towards pain assessment in critically ill patients at CHUK (2016-2017): University of Rwanda; 2017.

65. Ben Natan M, Ataneli M, Admenko A, Har Noy R. Nurse assessment of residents' pain in a long-term care facility. International Nursing Review. 2013;60(2):251-7.

# APPENDIXES

**Appendix 1: Information sheet**

Good morning or good afternoon! My name is _____. I am here today to collect data for a study to be conducted **byAntenehMekonnen** from Bahir Dar University, College of Medicine and Health Science, School of public health, Department of Epidemiology, post graduate program. **The objective of thisstudy is to assess pain assessment practice and associated factors amongnurses in public hospitalsof Bahir Dar city, Bahir Dar.** You are asked to take part in this study and to respond genuinely, and your cooperation is greatly helpful. Your participation is voluntary, and your name was not be written in this form and was never be used in connection with any information you tell us. There is no risk in participating in this research project and there may not be direct benefit to you, but your participation may have direct or indirect contribution to the patient, the nurses and the profession as a whole.

If you have questions regarding this study or would like to be informed of the results after its completion, please feel free to contact the principal investigator by using the following address.

Tell phone: +251918489800

Email: mekonnenanteneh34@gmail.com

**Appendix 2: Consent form**

In signing this document, I am giving my consent to participate in the study entitled "**assess pain assessment practice and associated factors among nurses inpublic hospitals in Bahir Dar city, Bahir Dar"**. I have been informed that the purpose of this study is to assess pain assessment practice and associated factors among nurses working at public hospitals. I have understood that participation in this study is entirely voluntarily, and my participation or refusal to answer the questions will have no effect on me. I have been told that my answersto the questions or reports of this study wasnever identify me in any way.

I understood that AntenehMekonnen is the contact person if I have questions about the study or about my rights as a study participant. I also know that the address of the principal investigator is:

AntenehMekonnen, Mobile number- +251 918489800

Email: Mekonnenanteneh34@gmail.com.

Are you willing to participate in this study?

Voluntary to participate ☐

Not voluntary to participate ☐

I here approve my consent to take part in the study with my signature.

RespondentSignature _____

Data collectorsName_____ Signature _____ Date_____

Supervisor Name _____ Signature _____ Date_____

Thank you

## Appendix 3: Checklist

**Part one: Structured checklist to collect data about pain assessment practice among nurses in public hospitals through observation method in Bahir Dar, 2023**

| | | |
|---|---|---|
| 1 | Is usevital signs as extra indicators of the intensity of a patient's pain/as a cue for pain assessment | 1.Yes 2.No |
| 2 | Is routinely use of a pain assessment tool for patients | 1.yes 2.No |
| 3 | Is assess alleviating factors | 1.Yes 2.No |
| 4 | Is assess aggravating factors | 1.Yes 2.No |
| 5 | Is assessing description of the pain (e.g. burning, aching, stabbing, shooting, and throbbing). | 1.Yes 2.No |
| 6 | Is assess of location and radiation of pain to other area of the body | 1.Yes 2.No |
| 7 | Is use pain assessment tool or scales for appropriated patient condition | 1.Yes 2.No |
| 8 | Is assess pain of starting time and frequency | 1.Yes 2.No |
| 9 | Is nurse done physical examination, Inspection, palpation, neurological examination and musculoskeletal system examination? | 1.Yes 2.No |
| 10 | Is routinely screen patients for pain upon admission by asking about the presence of pain | 1.Yes 2.No |
| 11 | Is assessing pain before and after initiating management | 1.Yes 2.No |
| 12 | Are observing patient behaviors facial expression, i.e. grimacing in pain assessment | 1.Yes 2.No |
| 13 | Is assess type of pain | 1.Yes 2.No |
| 14 | Is document pain assessment scores | 1.Yes 2.No |
| 15 | Is discuss pain assessment scores during a nurse-to-nurse report | 1.Yes 2.No |
| 16 | Is evaluating the psychological, social and cultural background among of patients with pain | 1.Yes 2.No |
| 17 | Is there a discussion about pain assessment scores during unit rounds | 1.Yes 2.No |
| 18 | Is use self-report of pain as a valid measure of pain for verbal or non verbal communicate patient | 1.Yes 2.No |

## Appendix 4:

**Part I:** Socio -demographic characteristics of nurses in public hospitals of Bahir Dar city, Ethiopia, 2023.

| Code | Questions | Category | Remark |
|---|---|---|---|
| 101 | What is your age? | ___years | |
| 102 | What is your sex | 1. male 2. female | |
| 103 | What is your educational status? | 1. Diploma nurse 2. BSc nurse<br>3.Mastersnurse<br>4.Others(specify)____ | |
| 104 | What is your professional working experience | _____years | |
| 105 | What is your marital status? | 1.Married 2.Single<br>3.Divorced<br>4.Widowed | |

**Part II: Personal behavior related factors affecting pain assessment practice amongnurses in public hospitals, Bahir Dar, 2023**

**Instruction:** Please read the following questions carefully and encircle on the correct answer option as honest as possible.

**Knowledge related questioners**

| Code | Questions | Category | Remark |
|---|---|---|---|
| 201 | Appropriate assessment of pain is the first priority for effective pain management | 1.Yes<br>2. No | |
| 202 | Based on duration, Pain classified as: Acute and chronic pain | 1.yes<br>2.No | |
| 203 | Numeric rating scale ranging from(0)no pain at all to (10) the worst | 1.Yes | |

| | | | |
|---|---|---|---|
| | pain | 2. No | |
| 204 | Accurate judgment of the intensity of the patient pain is the patient. | 1.Yes<br>2. No | |
| 205 | The impacts of unrelieved pain on psychological aspects include increased anxiety, impairs sleep ,delirium, demoralization, depression | 1.yes<br>2.No | |
| **Assessment of pain is necessary for the following classifications of patient?** | | | |
| 206 | Post-operative patient | 1.yes<br>2.No | |
| 207 | Medical patient | 1.yes<br>2.No | |
| 208 | surgical patients | 1.yes<br>2.No | |
| 209 | Trauma patients | 1.yes<br>2.No | |
| 210 | sedated patients | 1.yes<br>2.No | |
| 211 | Burns patients | 1.yes 2. No | |
| 212 | End-of-life patients | 1.yes 2.No | |
| **Assessment of pain is necessary for before, during, and after to the following procedures?** | | | |
| 213 | Patient repositioning. | 1.yes2.No | |
| 214 | End tracheal suctioning | 1.yes2.No | |
| 215 | Wound care | 1.yes2.No | |
| 216 | Drain removal | 1.yes2.No | |
| **Which of the following behaviors are indicators of pain non-verbal patients?** | | | |
| 217 | clenching fists/teeth | 1.yes 2.No | |
| 218 | Vocalization | 1.yes 2.No | |
| 219 | Guarding | 1.yes 2.No | |
| 220 | Restlessness | 1. Yes 2. No | |

**Attitude related questioners**

| code | questions | 1=strong dis agree | 2=disa gree | 3=neutra l | 4=agr ee | 5=strong agree |
|---|---|---|---|---|---|---|
| 301 | Do you feel that you are competent in assessing pain in patients effectively | | | | | |
| 302 | Spiritual beliefs of a patient may determine how they respond to pain. | | | | | |
| 303 | Pain assessment for the non verbal patient is a challenge and therefore it is not always possible | | | | | |
| 304 | Pain is seen in the patient's behavior | | | | | |
| 305 | Distraction reduces pain intensity | | | | | |
| 306 | Do you agree that nurse professionals should attend pain assessment tanning | | | | | |
| 307 | The use of pain assessment tool is important in determining if the patient is a real pain | | | | | |
| 308 | Surgical patients usually do experience pain more intense than medical patients | | | | | |
| 309 | The nurse's personal experience with pain affects the way the nurses assessment pain of patients | | | | | |
| 310 | Observable changes in vital sign can verify a patient's complaint of severe pain | | | | | |
| 311 | Do you always agree with patients' statements about their pain? | | | | | |

**Substance abuse related questions**

| code | Questions | response | Remark |
|---|---|---|---|
| 401 | Have you ever use substance? | 1. Yes 2. No | |
| 402 | If **yes** Which type of substance use? | 1.khat 2 .Alcohol 3.cigarette smoke 4.Shisha 5. Cannabis 6. Cocaine 7.Opioids 8.Others(Specify----------) | |
| 403 | If **yes** for the above question, for how long did you use | 1.< 1year2.1-2year 3.2-4year4.>4years | |
| 404 | Have you ever drunk any alcoholic beverage(Including 'Tella', 'Teji', 'Areki', beer, wine,and 'katikala')? | 1. Yes 2. No | |
| 405 | Have you Current drink alcohol in the Past 30 days | 1. Yes 2. No | |
| 406 | Have you Ever chewing Khat | 1.Yes 2. No | |
| 407 | Current chewing Khat in the past 30 days | 1. Yes2. No | |
| 408 | Have you Ever Smoke Cigarette | 1. Yes 2. No | |
| 409 | Current use of Cigarette in the past 30 days | 1 .Yes 2. No | |
| 410 | Have you Ever use Shisha | 1 .Yes 2. No | |
| 411 | Current use of Shisha in the past 30 days | 1. Yes 2. No | |
| 412 | Have you Ever Use Cannabis | 1. Yes 2 .No | |
| 413 | Current use of Cannabis in the past 30 days | 1. Yes 2 .No | |
| 414 | Have you Ever use Cocaine | 1. Yes 2. No | |
| 415 | Current use of Cocaine in the past 30 days | 1 .Yes 2. No | |
| 416 | Have you Ever use opioids | 1. Yes 2. No | |
| 417 | Current use of opioids in the past 30 days | 1 .Yes2. No | |
| 418 | Have you ever been Annoyed/Angered when Questioned about your use? | 1. Yes 2. No | |
| 419 | Do you ever feel bad or guilty about your drug use? | 1. Yes 2. No | |
| 420 | Are you unable to stop using drugs when you want to? | 1.Yes 2. No | |
| 421 | Have you ever had an Eye-opener to get started in the morning? | 1. Yes 2. No | |

**Communication skill related questions**

| Code | Questions | 1=strong dis agree | 2=disagree | 3=neutral | 4=agree | 5=strong agree |
|---|---|---|---|---|---|---|
| 501 | You inform the patient's right and obligation | | | | | |
| 502 | You inform patients of the results when taking their vital signs (blood pressure, temperature, heart rate) | | | | | |
| 503 | You keep patients informed on the condition of their health | | | | | |
| 504 | You inform the family about the health conditions of critical patients | | | | | |
| 505 | You try to include/inform them about the decisions related to their therapy | | | | | |
| 506 | You provide information to the patients when they ask you | | | | | |
| 507 | You are polite and friendly towards your patients(manner of speaking, protection of privacy, respect in diversity) | | | | | |
| 508 | You inform the patients about positions which help to alleviate pain | | | | | |
| 509 | You dedicate adequate time to communicate with patients | | | | | |
| 510 | You respond to the patients' concerns and complaints during their stay at the hospital | | | | | |

**Job satisfaction related questions**

| Sno | questions | 1=strong disagree | 2=disagree | 3=neutral | 4=agree | 5=strong agree |
|---|---|---|---|---|---|---|
| 601 | I am satisfied with salary structures | | | | | |
| 602 | I am satisfied with colleagues in work | | | | | |
| 603 | I am satisfied with my supervisor/boss/department head | | | | | |
| 604 | I am satisfied with the present performance appraisal | | | | | |
| 605 | I am satisfied with working hours schedule/shift | | | | | |
| 606 | I am satisfied with transportation service | | | | | |
| 607 | I am satisfied with duty payment & it match with my responsibility | | | | | |
| 608 | I am very satisfied with my job | | | | | |

**Part III: Organizational factors affecting pain assessment practice among nurses in public hospitals, Bahir Dar, 2023**

**Instruction:** Please read the following questions carefully and encircle on the correct answer option as honest as possible.

| **Code** | **Questions** | **Category** | **Remark** |
|---|---|---|---|
| 801 | Availability of pain assessment tools | 1. YES<br>2. NO | |
| 802 | Familiarity with pain assessment tools | 1. YES<br>2. NO | |
| 803 | Training attended about pain assessment | 1. Yes<br>2. No | |
| 804 | Availability guidelines | 1. YES<br>2. N0 | |
| 805 | Documentation of pain assessment | 1. YES<br>2. No | |

**Workload related questions**

| Sn | questions | 1=strongdisagree | 2=disagree | 3=neutral | 4=agree | 5=strong agree |
|---|---|---|---|---|---|---|
| 901 | The organization is fully utilizing my current effort for the job | | | | | |
| 902 | I always finish my work on time | | | | | |
| 903 | I have enough time to complete my daily tasks. | | | | | |
| 904 | I perform duties with a job description | | | | | |
| 905 | I am working less than what is expected from me due to job scope | | | | | |
| 906 | I was assigned according to my educational specialty | | | | | |
| 907 | The amount of work load in my current job is reasonable | | | | | |
| 908 | The work load was equally distributed among all workers in the organization | | | | | |
| 909 | My organization was rewarding and appraising me for my additional work | | | | | |

**Part IV: Patient related factors affecting pain assessment practice among nurses in public hospitals, Bahir Dar, 2023**

| Code | Questions | Category | Remark |
|---|---|---|---|
| 1001 | Patient stability on pain assessment /decreased BP and increased pulse/ | 1. YES<br>2. NO | |
| 1002 | Patient ability to communicate | 1. YES<br>2. NO | |
| 1003 | Sedation interfering with pain assessment | 1. YES<br>2. NO | |