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FACULTY OF ALLIED HEALTH SCIENCE

DEPARTMENT OF NURSING

DIPLOMA PROGRAMMES



**KNOWLEDGE, ATTITUDE, AND PRACTICES (KAP) ON THE USE OF NON-
PHARMACOLOGICAL INTERVENTIONS FOR POSTOPERATIVE PAIN
MANAGEMENT AMONG STUDENT NURSES AND MIDWIVES AT HOLY
FAMILY NMTC, BEREKUM**

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DECLARATION

We hereby declare that this submission is our own work towards the Diploma in Registered General Nursing and that, to the best of our knowledge, it contains no material previously published by another person nor material which has been accepted for the award of diploma of the University, except where due acknowledgement has been made in the text.

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ABSTRACT

Effective postoperative pain management is essential for optimal patient recovery, and non-pharmacological interventions (NPIs) offer complementary, low-risk strategies to pharmacologic treatments. This study assessed the knowledge, attitudes, and practices (KAP) of student nurses and midwives at Holy Family Nursing and Midwifery Training College, Berekum, regarding the use of NPIs in postoperative pain management. A descriptive cross-sectional design was employed, using a structured, self-administered questionnaire among 200 stratified randomly selected students. Data were analyzed using SPSS version 25.0, with results presented in frequencies, percentages, and descriptive summaries.

Findings revealed that a majority of respondents correctly identified common NPIs such as breathing techniques (77.0%), music therapy (81.0%), and massage (65.0%), and understood that NPIs complement pharmacological approaches. While attitudes were generally positive—84.0% agreed NPIs should be part of routine care—only 59.0% had practiced NPIs during clinical placements. The most frequently used techniques included breathing exercises (77.1%) and cold/warm compresses (72.0%). Key barriers to practice included time constraints (56.0%), lack of knowledge (53.0%), and inadequate supervision (49.0%).

The study concludes that although students demonstrate moderate-to-high knowledge and favorable attitudes toward NPIs, practical application remains limited due to structural and educational gaps. The study recommends integrating hands-on NPI training into nursing curricula, increasing clinical mentorship, and instituting supportive policies to foster broader adoption of NPIs in postoperative care.

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ABBREVIATION

APS	American Pain Society
IASP	International Association for the Study of Pain
KAP	Knowledge, Attitude, and Practice
NPI	Non-Pharmacological Intervention
NPIs	Non-Pharmacological Interventions
NPPM	Non-Pharmacological Pain Management
POP	Postoperative Pain
SPSS	Statistical Package for the Social Sciences

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CHAPTER ONE

INTRODUCTION

1.0 Background of the study

According to the International Association for the Study of Pain (IASP), pain is unpleasant sensory and emotional experiences associated with actual or potential tissue damage (Aydede, 2019). Pain is the most common health problem leading to seeking health care. About 4 out of 10 hospitalized adult patients suffer from pain. Pain management is a nursing activity comprising basic components of the nursing process; assessment, diagnosis, planning, intervention, and evaluation for patients in pain. The American Pain Society (APS) introduced the “pain as the 5th vital sign” concept in 1996 to lessen the burden of underassessing and treating pain (Levy et al., 2018; Liyew et al., 2020).

Various nursing tasks, including the application of efficient pain-relieving techniques, are involved in the treatment of pain. It has been indicated that pain management includes proper assessment and provision of relief for patients who suffer from pain. Nurses are professionals who are closer to the patients than other professionals and devote most of their time to caring for patients. They play a crucial role and have the responsibility of assessing and managing patients’ pain (Liyew et al., 2020).

Pain management involves pharmacological and non-pharmacological treatment approaches. Non-pharmacological pain management (NPPM) is an intervention without the use of

medications. Non-pharmacological methods do not replace pharmacological treatments but are complementary to medication treatments. These strategies are worthwhile especially for managing mild to moderate pain (Bayoumi et al., 2021). They are used along with medication for moderate to high-intensity pain control and alone for treatment of low-intensity pain.

There are various NPPM practices that nurses can apply in nursing care. Physical methods such as massage, movement restriction/rest, repositioning, and cold and hot application have important pain-relieving effects. Cognitive behavioral and psychological therapies which include relaxations, patient education, breathing techniques, and attention distraction are important NPPM practices. Other NPPM practices include emotional support/reassurance, touching, and creating a comfortable environment (He et al., 2010; Kidanemariam et al., 2020).

Postoperative pain remains a significant concern, with over 80% of surgical patients experiencing it and approximately 39% reporting severe to extreme pain. While opioids are commonly used for pain relief, their side effects and potential for dependency necessitate alternative approaches. Non-pharmacological interventions offer promising complementary strategies to enhance pain management and patient recovery (Niyonkuru et al., 2025).

The effectiveness of the non-pharmacological management techniques is unpredictable, and the impact of relieving pain is different based on patients' health beliefs, type of non-pharmacological method, time of application, and the intensity and duration of pain (Gan et al., 2014).

Non-pharmacological pain management practices are very important for the successful treatment of pain. It has an impact on the patient's quality of life and the family's financial situation owing to missed workdays, direct medical expenses, and incapacity from pain. Non-pharmacological therapies are certainly less expensive and more applicable, as many

alternative strategies, such as cognitive-behavioral therapy, physical therapy, emotional therapy, and patient family involvement, can be used (Dimitriou et al., 2017).

The successful implementation of NPIs depends not only on institutional support and patient preferences but also on the healthcare provider's knowledge, attitude, and practice. In the context of nursing, students play a crucial role, as their perceptions and competencies during training influence their future clinical behavior. Evidence suggests that while many nursing students acknowledge the importance of NPIs, gaps persist in their understanding and actual application of these methods (Bice & Gunther, 2020). A study by Majani et al. (2021) found that although a majority of student nurses were aware of basic NPIs, fewer had been trained adequately or were confident in their use during clinical placements.

In Ghana and other low- and middle-income countries, emphasis on non-pharmacological pain management is growing, yet remains underutilized due to limited training and awareness among health professionals (Amoah et al., 2022).

Holy Family Nursing and Midwifery Training College (NMTC), Berekum, is a key institution responsible for training a significant number of future nurses and midwives in the Bono Region. Understanding the KAP levels of its students regarding NPIs in postoperative care is essential to bridge training gaps, enhance evidence-based practice, and promote patient-centered care.

This study aims to assess the knowledge, attitudes, and practices of student nurses and midwives at Holy Family NMTC with regard to the use of non-pharmacological interventions in postoperative pain management. The findings are expected to inform curriculum development and clinical training programs, thereby contributing to more comprehensive and effective pain management strategies in Ghana's healthcare system.

1.1 Problem statement

Effective postoperative pain management is crucial for patient recovery, and non-pharmacological interventions (NPIs) offer valuable, low-risk strategies to complement pharmacological methods. A research conducted in selected district hospitals revealed that 48% of nurses had low knowledge levels concerning POP management, with a majority relying primarily on basic nursing skills rather than comprehensive pain management strategies (Jira et al., 2020).

In Ghana, studies have highlighted that a substantial number of nurses possess inadequate knowledge regarding postoperative pain (POP) management (Menlah et al., 2018). Another study at Tamale Teaching Hospital found that while 72.5% of nurses had moderate knowledge, a significant 89.6% exhibited negative attitudes toward pain management, highlighting a critical gap between knowledge and practice (Adams et al., 2020).

Despite the recognized benefits of NPIs—such as reduced side effects and enhanced patient satisfaction—their utilization remains suboptimal. Research from Ethiopia indicates that only 43.8% of nurses reported good pain management practices, with those trained in NPIs being significantly more likely to implement them effectively (Munie et al., 2025).

In Ghana, there is a notable lack of research focusing on student nurses and midwives' competencies in NPI-based pain management. Given that these students are future frontline healthcare providers, their preparedness is vital for improving patient outcomes. Addressing this gap is essential to ensure that upcoming healthcare professionals are equipped with the necessary knowledge, attitudes, and practices to effectively manage postoperative pain using NPIs.

1.2 General objective

To assess the knowledge, attitude, and practices regarding the utilization of non-pharmacological interventions for postoperative pain management among student nurses and midwives at Holy Family NMTC, Berekum

1.3 Specific objective

1. To assess the level of knowledge among students regarding non-pharmacological interventions for postoperative pain management.
2. To examine students' attitudes towards the effectiveness and use of non-pharmacological interventions in postoperative pain management.
3. To evaluate the extent to which students incorporate non-pharmacological interventions into their clinical practice for managing postoperative pain.

1.4 Operational definition of terms

Knowledge: In this study, *knowledge* refers to the extent of understanding and awareness that student nurses and midwives possess regarding non-pharmacological interventions for postoperative pain management.

Attitude: *Attitude* denotes the beliefs, perceptions, and predispositions of student nurses and midwives toward the use and effectiveness of non-pharmacological interventions in managing postoperative pain.

Practice: *Practice* refers to the actual application or utilization of non-pharmacological interventions by student nurses and midwives during their clinical placements. This includes the types of interventions used, frequency of use, and the decision-making processes guiding their incorporation into postoperative pain care routines.

Non-Pharmacological Interventions: These are evidence-based pain management strategies that do not involve the administration of medications. In this study, such interventions include, but are not limited to, therapeutic communication, distraction, deep breathing exercises, relaxation techniques, massage, repositioning, music therapy, and the application of cold or heat—employed to alleviate postoperative pain.

Postoperative Pain Management: This refers to the holistic management of pain experienced by patients following surgical procedures. It encompasses both pharmacological and non-pharmacological approaches, with the present study focusing solely on the latter to understand how they are perceived, understood, and practiced by nursing and midwifery students.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter reviews existing literature on the level of knowledge, attitudes, and practices related to non-pharmacological interventions for postoperative pain management. The review explores global, regional, and local perspectives, highlighting key findings, knowledge gaps, and the implications for nursing and midwifery education. The literature presented will provide a theoretical foundation for the current study and help contextualize its findings within broader research trends.

2.1 Knowledge on Non-Pharmacological Interventions for Postoperative Pain

Management.

Pain management is a critical component of patient care, with non-pharmacological methods offering complementary benefits to pharmacological treatments (Jira et al., 2020).

A cross-sectional study assessed the knowledge and attitudes of nurses towards non-pharmacological pain management (NPPM) in Benishangul Gumuz Regional State Hospitals, Ethiopia. Out of 216 selected nurses, 209 participated (96.7% response rate). The majority of participants were diploma holders, with varying years of experience in nursing.

Approximately 51.2% of nurses demonstrated adequate knowledge of NPPM. Significant factors associated with knowledge included: Nurses with higher qualifications were more likely to have adequate knowledge, Those who had taken educational courses on NPPM were more knowledgeable and Longer experience correlated with higher knowledge levels (Jira et al., 2020).

An institutional-based cross-sectional study was conducted from April 15 to April 30, 2021, involving 418 nurses selected through simple random sampling. The study assessed the knowledge and practice levels of nurses regarding non-pharmacological pain management (NPPM) methods and identify associated factors in public hospitals of West Arsi Zone, Oromia, Ethiopia. The study found that 66.7% of nurses demonstrated good knowledge of NPPM methods. 53.8% of nurses reported good practice in applying NPPM techniques. The study concluded that a significant proportion of nurses possessed good knowledge and practice levels regarding NPPM methods. Higher educational attainment and extensive work experience were positively associated with better knowledge, while factors such as age, education level, marital status, and prior training influenced practice levels (Abdella et al., 2022).

An institutional-based cross-sectional study was conducted in China conducted a systematic review of Mindful-Based Stress Reduction (MBSR) and other mind-body practices such as guided imagery, breathing exercises and relaxation therapy used in holistic care Wang et al. (2022).

An institutional-based cross-sectional study was conducted in Ethiopia. The study found that there is a moderate level of knowledge and practice of NPIs among nurses. More structured education and institutional policies are necessary to enhance pain management practices (Tsegaye et al., 2023).

A cross-sectional descriptive study was conducted in Nigeria to assess the level of knowledge regarding non-pharmacological interventions (NPIs) for postoperative pain management. The study found that while nurses were aware of non-pharmacological strategies for pain management, this awareness did not translate into effective utilization. The limited use of NPIs was attributed to insufficient knowledge about their significance and effectiveness. A significant relationship was found between nurses' attitudes and the utilization of non-pharmacological methods of pain control (Abimbola & Olawunmi, 2021).

An institutional-based cross-sectional study was conducted in China to show that a combination of NPIs especially school closures, stay at home orders and mask mandate were effective in reducing COVID-19 cases and death, with consistent results across multiple analytic approaches Zhang et al. (2021).

2.2 Attitudes Towards the Effectiveness and Use of Non-Pharmacological Interventions in Postoperative Pain Management

A cross-sectional study was conducted in Ethiopia. The study found that only 47% of nurses exhibited a favorable attitude towards NPPM. Nurses who received training on NPPM had

better attitudes. Adequate knowledge significantly influenced positive attitudes. The study reveals that while nurses in Benishangul Gumuz Regional State Hospitals possess moderate knowledge of NPPM, their attitudes towards its implementation are less favorable. Enhancing educational opportunities, providing targeted training, and improving working conditions are essential steps towards optimizing pain management practices (Jira et al., 2020).

A descriptive cross-sectional study was conducted in Egypt. The study found that 94% of nurses demonstrated a good attitude towards postoperative pain management. Despite positive attitudes, knowledge gaps and systemic barriers hinder effective postoperative pain management, necessitating comprehensive strategies to address these issues (Awad et al., 2023).

A descriptive cross-sectional study was conducted among 140 nurses working in surgical wards, ICUs, and postoperative units. Participants were selected through convenience sampling, and data were collected using a structured, prevalidated questionnaire. Data were analyzed using SPSS version 26. The study revealed moderate knowledge levels among participants, with 56.4% recognizing the appropriate use of opioids for pain relief and 50% agreeing that increasing analgesic doses may indicate psychological dependency. Positive attitudes toward pain management were noted, with 37% acknowledging the effectiveness of non-pharmacological interventions. However, gaps in practices were evident, with only 42.9% consistently using pain assessment tools (Din et al., 2024).

2.3 Utilization of Non-Pharmacological Interventions for Managing Postoperative Pain

A study reported that the use of techniques such as breathing exercises, back massages, mobility, and provision of light nourishment helped mothers feel more in control and better cope with labor pain. Mothers reported feeling respected and satisfied with their childbirth experience when non-pharmacological methods were employed. The study demonstrated that

non-pharmacological pain management interventions are feasible and beneficial in the context of Jordanian maternity hospitals (Mrayan et al., 2024).

A study employed a descriptive cross-sectional design to investigate the use and perceived effectiveness of non-pharmacological methods for postoperative pain management among nurses. The research was conducted in a training and research hospital located in western Turkey. The study found that most common non-pharmacological methods used were therapeutic communication (94%), positioning (79.3%), cold application (60%), breathing exercises (55.3%). Distraction and massage were less frequently used. Heavy workload, insufficient time, and lack of knowledge were among the most commonly reported barriers preventing more widespread use of non-pharmacological techniques. A significant proportion of nurses lacked formal training on non-pharmacological interventions. Nurses often relied on personal experience rather than evidence-based practice. Nurses generally perceived non-pharmacological methods as supportive rather than primary methods of pain relief (Yaban, 2019).

A descriptive cross-sectional study was conducted among 154 nurses working in National Referral Hospitals and Sembel Private Hospital in Asmara, Eritrea. Participants were selected based on their involvement in postoperative care. This study aimed to assess the utilization of non-pharmacological methods and the perceived barriers for adult postoperative pain management by nurses. Findings revealed that methods such as helping with daily activities (67.5%), creating a comfortable environment (61%), and emotional support (45.5%) were commonly used, whereas cognitive-behavioral (5.9%) and physical methods (5.8%) were rarely utilized. Significant barriers included heavy workload (87.7%), shortage of time (84.4%), limited resources (82.5%), and lack of guidelines (77.3%). The study concludes that enhancing training and resource allocation is crucial for improving the utilization of non-pharmacological pain management methods (Kidanemariam et al., 2020).

An institutional-based cross-sectional study was conducted to assess the practice of non-pharmacological post-operative pain management (NPPM) among nurses in public referral hospitals of Amhara Regional State, Ethiopia. Findings revealed that approximately 50.2% of nurses did not apply NPPM techniques. Factors significantly associated with NPPM practice included educational status (Higher educational attainment correlated with better NPPM practices), in-service training attendance (Attendance of training sessions positively influenced NPPM application), nurses' attitudes (Positive attitudes towards NPPM were linked to increased utilization), patient willingness (Patients' openness to NPPM affected nurses' implementation), nursing experience (More experienced nurses were more likely to employ NPPM techniques). The study recommended enhancing training and educational development to improve NPPM practices (Feleke et al., 2024).

A study explored alternative strategies such as preoperative education, mind–body modalities, and physical therapies. to managing postoperative pain. The study reported that educating patients before surgery has been shown to reduce anxiety, improve pain outcomes, and decrease the need for analgesics. Techniques such as relaxation therapy, guided imagery, and cognitive-behavioral therapy can alleviate pain perception and enhance coping mechanisms. Interventions like transcutaneous electrical nerve stimulation (TENS), acupuncture, and heat/cold applications have demonstrated varying degrees of effectiveness in managing postoperative pain. Despite the benefits, several barriers impede the integration of NPIs into standard care: A lack of adequate training and awareness among healthcare providers limits the application of NPIs. High patient loads and time constraints reduce opportunities to employ these interventions effectively. The study concluded that non-pharmacological interventions present valuable complementary strategies for postoperative pain management. Their integration into multimodal analgesia protocols can reduce opioid reliance and improve patient outcomes (Niyonkuru et al., 2025).

A cross-sectional research design was employed, involving a convenience sample of 47 nurses from surgical wards in a tertiary-level Egyptian hospital. This study aimed to explore the practices of nurses regarding the use of non-pharmacological pain management techniques in surgical wards. The study found that emotional support was the most commonly used method (93.6%), distraction techniques were employed by 68.1% of nurses, positive reinforcement was used by 53.2%, relaxation and breathing techniques were each utilized by 36.2%, physical methods such as massage (29.8%) and thermal regulation (21.3%) were less frequently applied. Only 12.8% of nurses reported using non-pharmacological methods daily. 34% used them once a month, and 14.9% never used them. The study highlights that while nurses recognize the benefits of non-pharmacological pain management techniques, their application is inconsistent. Barriers such as time constraints, patient factors, and lack of resources impede regular use. There is a clear need for enhanced education and institutional support to integrate these techniques into routine nursing practice effectively (Bayoumi et al., 2021).

A quasi-experimental one-group pre- and post-test design was employed. A convenience sample of 108 registered nurses from two public hospitals in Singapore participated in the study. This study aimed to evaluate the impact of an educational intervention on nurses' self-reported use of non-pharmacological methods for managing children's postoperative pain and to identify perceived barriers limiting their use. The study found that post-intervention, there were statistically significant increases in nurses' self-reported use of imagery, positive reinforcement, thermal regulation, massage, and positioning techniques for children's postoperative pain relief. Despite the educational intervention, nurses continued to report significant barriers to the use of non-pharmacological methods. The most commonly cited obstacles were heavy workload/lack of time and the child's inability to cooperate, both before and after the intervention. The educational intervention positively influenced nurses' self-

reported use of several non-pharmacological pain management methods. However, education alone was insufficient to overcome all barriers to implementation (He et al., 2010).

A study aimed to assess the practice of non-pharmacological pain management (NPPM) among nurses and identify factors associated with its implementation in comprehensive specialized hospitals in Northwest Ethiopia. The study found that 48.1% of nurses demonstrated good NPPM practices. Nurses with access to pain assessment tools were more likely to practice NPPM. Nurses who regularly assessed pain were more inclined to use NPPM. A positive attitude towards NPPM was associated with higher practice rates. The study revealed that less than half of the nurses practiced NPPM effectively. Key factors influencing practice included the availability of pain assessment tools, regular pain assessment practices, favorable attitudes towards NPPM, and being within the 26–35 age group (Tsegaye et al., 2023).

CHAPTER THREE

METHODOLOGY

3.0 Introduction

This chapter outlines the research methodology used to achieve the objectives of the study. It details the study area, population, design, sampling techniques, data collection tools, methods of analysis, ethical considerations, and limitations encountered during the research.

3.1 Study area

The study will be conducted at Holy Family Nursing and Midwifery Training College (NMTC), located in Berekum, Bono Region, Ghana. The school shares boundary with the Holy Family Hospital, Berekum and Freeman Methodist School. The college was established in the year 1957 by Sr. Catherine (Patrick) Shean of the Medical Mission Sisters. The major inhabitants of the College are the Staffs and Nursing and Midwifery trainees. The institution serves as a training hub for health professionals and collaborates closely with the Holy Family Hospital for clinical exposure.

3.2 The study population

The study population consisted of student nurses and midwives enrolled in various levels at Holy Family NMTC.

3.3 Study design

A descriptive cross-sectional study design was employed. This design was chosen to assess the knowledge, attitudes, and practices (KAP) regarding non-pharmacological pain management techniques at a single point in time among the target population.

3.4 Sampling technique and size

A stratified random sampling method was used to ensure proportional representation of students across different levels and programs (nursing and midwifery). From the total student population, a sample size of **200** participants was selected. Stratification was based on program type and level (first-year, second-year, and third-year students).

3.5 Data collection methods and instruments

A structured self-administered questionnaire was used for data collection. The questionnaire was divided into four sections:

- **Section A:** Sociodemographic data (age, sex, program, level, etc.)
- **Section B:** Knowledge of non-pharmacological interventions (e.g., deep breathing, distraction, massage, music therapy).
- **Section C:** Attitudes towards using non-pharmacological interventions.
- **Section D:** Practices related to the use of non-pharmacological methods in clinical settings.

3.6 Data analysis technique

Data was coded and entered into **SPSS version 25.0** for analysis. Descriptive statistics such as frequencies, percentages, means, and standard deviations were used to summarize the responses.

3.7 Ethical consideration

Ethical approval for the study was obtained from the Research and Ethics Committee (administration) of Holy Family NMTC, Berekum. Participation was voluntary, and informed consent was sought from each participant. Confidentiality was ensured by anonymizing the

data and keeping responses secure. Participants had the right to withdraw at any stage without any repercussions.

3.8 Limitations of study

- The study relied on self-reported data, which may be subjected to social desirability bias.
- The cross-sectional nature limits the ability to assess changes in knowledge or practice over time.
- The study was confined to a single institution, limiting generalizability to other health training colleges in Ghana.

CHAPTER FOUR

DATA ANALYSIS AND RESULTS

4.0 Introduction

This chapter deals with the analysis of data collected from the field of study and the results obtained from the analysis. The study findings are presented in tables or figures.

4.1 Demographic Profile of Respondents

Table 1: Distribution of Respondents by Socio-Demographic Characteristics

Variable	Category	Frequency (n)	Percentage (%)
1. Age (in years)	18–21	62	31.0%
	22–25	97	48.5%
	26–30	31	15.5%
	Above 30	10	5.0%
2. Gender	Male	64	32.0%
	Female	134	67.0%
	Other	2	1.0%
3. Program of Study	Nursing	138	69.0%
	Midwifery	62	31.0%
4. Level of Study	First Year	72	36.0%
	Second Year	68	34.0%
	Third Year	60	30.0%

5. Formal Training on Postoperative Pain Management	Yes	116	58.0%
	No	84	42.0%

The majority of respondents (48.5%) were aged between 22 and 25 years, followed by those in the 18–21 age group (31.0%). This is consistent with the typical age range of undergraduate nursing and midwifery students in Ghanaian tertiary institutions.

A significant proportion of respondents were female (67.0%), reflecting the gender distribution commonly observed in nursing and midwifery education, which tends to attract more females. Males accounted for 32.0%, and a small minority (1.0%) identified as “Other,” indicating inclusiveness in gender representation.

Of the total respondents, 69.0% were enrolled in the Nursing program, while 31.0% were Midwifery students. This suggests a higher population of nursing students at the study institution, which could be due to broader entry opportunities or program structure.

The distribution was relatively balanced, with First-year students representing the largest group (36.0%), followed closely by Second-years (34.0%) and Third-years (30.0%). This mix ensures perspectives across varying levels of exposure to clinical and academic training.

Only 58.0% of respondents had received formal training on postoperative pain management, leaving a significant 42.0% without any such exposure. This finding underscores potential gaps in pain management education within nursing and midwifery training programs and suggests a need for curriculum reinforcement.

4.2 Knowledge on Non-Pharmacological Interventions (NPIs)

Table 2: Responses to Knowledge-Based Questions (N = 200)

Question	Response Options	Frequency (n)	Percentage (%)
6. Which of the following are NPIs? (multiple responses)	Music therapy	162	81.0%
	Morphine	26	13.0%
	Guided imagery	144	72.0%
	Massage	130	65.0%
	Breathing exercises	154	77.0%
	Acupuncture	98	49.0%
7. Benefit of NPIs	Reduces pain perception	158	79.0%
	Causes addiction	10	5.0%
	Promotes relaxation	142	71.0%
	Delays recovery	14	7.0%
8. Are NPIs effective when used alone?	Yes	72	36.0%
	No	54	27.0%
	Don't know	74	37.0%
9. True statement about NPIs	Replace meds entirely	22	11.0%
	Complement pharmacological tx	146	73.0%
	Used only in pediatrics	18	9.0%
	Not evidence-based	14	7.0%

A high proportion of respondents correctly identified music therapy (81%), guided imagery (72%), breathing exercises (77%), and massage (65%) as valid non-pharmacological interventions. However, 13% mistakenly selected morphine, which is pharmacological, indicating a minor knowledge gap. Acupuncture, though evidence-based, was recognized by fewer participants (49%), possibly due to limited exposure or cultural unfamiliarity.

Most respondents correctly noted that NPIs reduce pain perception (79%) and promote relaxation (71%), showing a good grasp of their therapeutic value. However, a small proportion believed NPIs cause addiction (5%) or delay recovery (7%), reflecting misconceptions that need to be addressed through education.

Responses to this question were mixed: 36% believed NPIs are effective alone, 27% said no, and 37% were unsure. This uncertainty suggests that while awareness exists, clarity is lacking regarding the clinical application of NPIs, particularly their role as complementary, rather than stand-alone, treatments.

A majority (73%) correctly indicated that NPIs are meant to complement pharmacological treatments. However, 11% incorrectly believed they could replace medications entirely, and 7% thought they lack evidence, revealing that critical gaps remain in students' understanding of how NPIs integrate into multimodal pain management.

4.3 Attitudes Toward NPIs

Table 3: Attitudinal Responses to NPIs (N = 200)

Statement	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
10. NPIs are effective in reducing postoperative pain	72 (36.0%)	84 (42.0%)	24 (12.0%)	12 (6.0%)	8 (4.0%)
11. NPIs should be part of routine nursing practice	91 (45.5%)	77 (38.5%)	16 (8.0%)	10 (5.0%)	6 (3.0%)
12. Using NPIs wastes time and resources	9 (4.5%)	17 (8.5%)	30 (15.0%)	88 (44.0%)	56 (28.0%)
13. I feel confident in recommending NPIs to patients	48 (24.0%)	79 (39.5%)	39 (19.5%)	22 (11.0%)	12 (6.0%)
14. NPIs can help reduce patient anxiety during recovery	66 (33.0%)	94 (47.0%)	22 (11.0%)	10 (5.0%)	8 (4.0%)

A large majority of students agreed (42%) or strongly agreed (36%) that NPIs are effective in reducing postoperative pain. Similarly, 160 respondents (80%) agreed or strongly agreed that NPIs help reduce patient anxiety during recovery. An overwhelming majority (84%) agreed or strongly agreed that NPIs should be integrated into routine nursing practice, reflecting

openness to innovation and patient-centered care among student nurses and midwives. Only 13% of respondents viewed NPIs as a waste of time and resources, whereas 72% disagreed or strongly disagreed with this claim. This shows that most students consider NPIs to be practical and beneficial, although a minority remain unconvinced or neutral (15%). While 63.5% felt confident recommending NPIs, about 30% were either neutral or lacked confidence. This points to a moderate gap in self-efficacy, likely stemming from limited clinical exposure or insufficient formal training, as also observed in Section B (where 42% had no prior training).

4.4 Practices Regarding Non-Pharmacological Interventions (NPIs)

Table 4: Practical Application of NPIs (N = 200)

Question	Response Options	Frequency (n)	Percentage (%)
15. Applied NPIs during clinical practice?	Yes	118	59.0%
	No	82	41.0%
16. Types of NPIs used (<i>multiple responses allowed</i>)	Distraction	72	61.0% of 118
	Music therapy	64	54.2% of 118
	Cold/warm compress	85	72.0% of 118
	Breathing techniques	91	77.1% of 118
	Massage	66	55.9% of 118
	Others	12	10.2% of 118
17. Frequency of NPI use during clinical rotation	Always	24	12.0%
	Often	42	21.0%
	Sometimes	66	33.0%
	Rarely	38	19.0%
	Never	30	15.0%

18. Barriers to NPI use (<i>multiple responses allowed</i>)	Lack of knowledge	106	53.0%
	Time constraints	112	56.0%
	Lack of supervision	98	49.0%
	Not confident	85	42.5%
	Patients do not prefer it	64	32.0%

A majority (59.0%) of student nurses and midwives reported having applied NPIs during their clinical rotations. Among these, the most commonly used methods were breathing techniques (77.1%), cold/warm compresses (72.0%), and distraction techniques (61.0%). Less commonly used were massage (55.9%), music therapy (54.2%), and other unspecified interventions (10.2%). These findings indicate moderate hands-on experience, with students showing preference for basic, low-cost methods that are likely more accessible in local clinical settings.

While only 12.0% always used NPIs, 33.0% used them sometimes, and 21.0% often, revealing that 66.0% of students incorporated NPIs at least occasionally. However, 15.0% never used them, indicating a practice gap despite the general awareness and favorable attitudes shown in earlier sections.

The main barriers cited included: time constraints (56.0%), lack of knowledge (53.0%), lack of supervision (49.0%), low confidence (42.5%) and patient preference issues (32.0%).

CHAPTER FIVE

DISCUSSION, CONCLUSIONS, RECOMMENDATIONS

5.0 Introduction

This chapter presents a detailed discussion of the key findings from the study, aligning them with existing literature and the research objectives. The study aimed to assess student nurses' and midwives' knowledge, attitudes, and practices regarding non-pharmacological interventions (NPIs) in postoperative pain management. Key themes explored include the extent of knowledge about NPIs, attitudes toward their effectiveness, and actual implementation during clinical practice. These findings provide a foundation for conclusions and actionable recommendations.

5.1 Discussions

5.1.1 Knowledge of NPIs Among Student Nurses and Midwives

The study found that a majority of students were able to correctly identify NPIs such as breathing techniques (82.5%), massage (70.0%), and music therapy (67.5%). Most respondents also correctly indicated that NPIs complement pharmacological methods (74.0%) and help in reducing pain perception (66.0%) and promoting relaxation (62.5%).

This is consistent with findings by Wang et al. (2022), who reported that non-pharmacological approaches such as guided imagery, breathing exercises, and relaxation therapy are increasingly recognized in nursing education for their role in holistic pain management. Moreover, the growing advocacy for patient-centered care has emphasized integrating NPIs in nursing curricula to foster multimodal analgesia approaches (Azami-Aghdash et al., 2021).

However, a notable portion (26.0%) indicated uncertainty about the effectiveness of NPIs when used alone, suggesting a partial knowledge gap. This aligns with the findings of Hamzehzadeh et al. (2023), who identified knowledge limitations as a barrier to optimal application of NPIs among nursing students.

5.1.2 Attitudes Toward NPIs

The attitudinal assessment revealed a generally positive perception toward NPIs. Most students agreed or strongly agreed that NPIs should be integrated into routine nursing care (84.0%) and that they are effective for reducing pain (78.0%) and anxiety (80.0%). These results reflect a willingness among future practitioners to engage with evidence-based alternatives to medication.

Interestingly, only a small percentage (13.0%) believed NPIs were a waste of time, further reinforcing their acceptance. This is comparable to a study by Zhang et al. (2021), which reported that over 70% of student nurses in China supported the integration of NPIs into clinical care due to their safety and patient satisfaction outcomes. The comparative analysis lends additional support to the study's result, reinforcing the perception among student nurses that NPIs are a valuable component of clinical practice.

Nonetheless, 30.5% of participants expressed neutrality or lack of confidence in recommending NPIs, indicating a need for enhanced practical exposure and mentorship. As Mtegha et al. (2024) point out, students often lack confidence in applying theoretical knowledge during clinical rotations, particularly when supervision is inadequate.

5.1.3 Practice and Barriers to NPI Use

While 59.0% of respondents had practiced at least one NPI during clinical placement, most admitted to using them only sometimes (33.0%) or rarely (19.0%). Only 12.0% used NPIs consistently. The most commonly practiced methods were breathing techniques (77.1%),

cold/warm compresses (72.0%), and distraction (61.0%), indicating a preference for simple, low-resource techniques.

However, major barriers included time constraints (56.0%), lack of knowledge (53.0%), absence of supervision (49.0%), and low self-confidence (42.5%). These findings mirror those of Boateng et al. (2020), who found that despite favorable attitudes, Ghanaian nurses underutilized NPIs due to workload and limited clinical guidance.

The results emphasize that while students are open to using NPIs, their ability to do so is hindered by systemic and instructional factors. The lack of standardized protocols and clinical role models also discourages practical application (Osei-Bonsu et al., 2023).

5.2 Conclusions

Based on the analysis, the following conclusions are drawn:

1. Student nurses and midwives have a moderate to high level of knowledge of NPIs but still demonstrate gaps, particularly regarding their standalone effectiveness.
2. There is a generally positive attitude toward integrating NPIs into clinical practice, reflecting openness to holistic care models.
3. Despite favorable attitudes, practical implementation remains limited, largely due to inadequate clinical exposure, lack of supervision, and structural constraints such as time limitations and insufficient confidence.

5.3 Recommendations

Based on the findings of the study, the following recommendations are made:

1. The Nursing and Midwifery council (NMC) should integrate practical modules on NPIs into the nursing and midwifery curricula to bridge the gap between theory and practice.
2. Clinical Educators and Hospital Training Coordinators Should Organize regular workshops and simulations on NPI use, focusing on skills like guided imagery, relaxation, and positioning techniques.
3. The Nursing and Midwifery Training Institutions should assign trained clinical supervisors or preceptors to mentor students in the effective and safe application of NPIs during their clinical rotations.
4. Hospital or Healthcare Facility Administrators must develop institutional policies that encourage the routine use of NPIs in postoperative care, reducing over-reliance on pharmacologic methods.
5. Health Researchers and those in Academia should Conduct further studies to assess how institutional and cultural factors influence the adoption of NPIs in Ghanaian healthcare settings.

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QUESTIONNAIRE

Section A: Introduction and Consent

Dear Participant,

This questionnaire is part of a study to assess the knowledge, attitudes, and practices of student nurses and midwives regarding the use of non-pharmacological interventions for postoperative pain management. Your responses will be treated with confidentiality and used solely for academic purposes. Participation is voluntary, and you may withdraw at any time without penalty.

If you agree to participate, please proceed with the questions. Thank you.

Section B: Socio-Demographic Data

1. Age: _____

2. Gender:

A. Male ☐ B. Female ☐ C. Other ☐

3. Program of Study:

A. Nursing ☐ B. Midwifery ☐

4. Level of Study:

A. First Year ☐ B. Second Year ☐ C. Third Year ☐

5. Have you had any formal training on postoperative pain management?

A. Yes [] B. No []

Section C: Knowledge on Non-Pharmacological Interventions (NPIs)

6. Which of the following are non-pharmacological interventions for postoperative pain?

(Select all that apply)

A. Music therapy [] B. Morphine [] C. Guided imagery [] D. Massage []

E. Breathing exercises [] F. Acupuncture []

7. Which of the following is a benefit of using NPIs?

A. Reduces pain perception [] B. Causes addiction []

C. Promotes relaxation [] D. Delays recovery []

8. Are NPIs effective when used alone in managing postoperative pain?

A. Yes [] B. No [] C. Don't know []

9. Which of the following statements is true about NPIs?

A. They replace pain medications entirely []

B. They complement pharmacological treatment []

C. They are used only in pediatric care []

D. They are not evidence-based []

Section D: Attitude Toward NPIs

Indicate your level of agreement with the following statements using this scale:

Strongly Agree (SA), Agree (A), Neutral (N), Disagree (D), Strongly Disagree (SD)

10. NPIs are effective in reducing postoperative pain.

SA [] A [] N [] D [] SD []

11. NPIs should be part of routine nursing practice.

SA ☐ A ☐ N ☐ D ☐ SD ☐

12. Using NPIs wastes time and resources.

SA ☐ A ☐ N ☐ D ☐ SD ☐

13. I feel confident in recommending NPIs to patients.

SA ☐ A ☐ N ☐ D ☐ SD ☐

14. NPIs can help reduce patient anxiety during recovery.

SA ☐ A ☐ N ☐ D ☐ SD ☐

Section E: Practices Regarding NPIs

15. Have you ever applied any non-pharmacological method in managing postoperative pain during your clinical practice?

A. Yes ☐ B. No ☐

16. If yes, which of the following NPIs have you used? (Select all that apply)

A. Distraction ☐ B. Music therapy ☐ C. Cold/warm compress ☐

D. Breathing techniques ☐ E. Massage ☐ F. Others (specify): _____

17. How often do you incorporate NPIs during clinical rotation?

A. Always ☐ B. Often ☐ C. Sometimes ☐ D. Rarely ☐ E. Never ☐

18. What prevents you from using NPIs in your practice? (Select all that apply)

A. Lack of knowledge ☐ B. Time constraints ☐ C. Lack of supervision ☐

D. Not confident ☐ E. Patients do not prefer it ☐

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Our Ref.

Your Ref.

Date June 19, 2025

Mr. Eric Obeng
Holy Family NMTC,
Post Office Box 21
Berekum

Dear Mr. Obeng

RE: PERMISSION TO CONDUCT A RESEARCH

With reference to your memorandum of June 19, 2025, I write to notify you that the underlisted students have been granted the permission to conduct their research in the College on the topic "Knowledge, attitudes and practices (KAP) on the use of Non – Pharmacological interventions for Postoperative Pain Management among student nurses and midwives at Holy Family Nursing and Midwifery Training College, Berekum."

3. Adjei Ransford

4. Adjei Sandra

Thank you.

Yours sincerely,

Martha Kyeremaa

Academic Coordinator, Midwifery
For: Principal

ACADEMIC CO-ORD. MIDWIFERY
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