

Research Article

Non-Pharmacological Interventions for Patients with Chronic Pain: Their Perceived Effectiveness

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Abstract:

The study determined the effectiveness of non-pharmacological interventions for patients with chronic pain at Sta. Maria Josefa Hospital Foundation Inc., Iriga City. Specifically, it aimed to identify the non-pharmacological interventions utilized by nurses, assess their perceived effectiveness in reducing chronic pain, determine the extent to which nurses employ such interventions, and propose a training program based on the findings. Guided by the assumption that non-pharmacological interventions vary in type and perceived effectiveness, the study utilized a descriptive survey design involving sixty (60) nurses from different hospital stations. Data were gathered using a validated questionnaire and statistically treated through frequency distribution, weighted mean, and a five-point rating scale. The results revealed that nurses frequently used positioning, deep breathing exercises, hot and cold application, and massage, while other methods such as progressive muscle relaxation, acupuncture, and music therapy were often utilized. Conversely, aromatherapy, guided imagery, and transcutaneous electrical nerve stimulation (TENS) were less frequently applied.

Findings showed that positioning and massage were perceived as very much effective, while interventions like hot and cold application, deep breathing, and muscle relaxation were deemed effective in alleviating chronic pain. The extent to which nurses performed non-pharmacological interventions was rated as much employed, particularly in areas involving explanation of procedures, assessment of patient discomfort, and reassessment of pain responses. These results underscore that nurses at Sta. Maria Josefa Hospital Foundation Inc. are proficient in applying non-pharmacological approaches to pain management. Consequently, a training program was developed to further enhance their competencies, emphasizing individualized and holistic pain management techniques that consider patient-specific conditions. The study recommends strengthening continuing education and integrating evidence-based non-pharmacological methods into standard clinical practice to optimize pain management outcomes.

Keywords: Non-pharmacological Interventions, Chronic Pain, Effectiveness.

Introduction

The management of human pain is seen as a crucial task for medical experts. In fact, when a patient is in pain, health practitioners find a way to alleviate patients from pain. Chronic pain is a global health concern with evidence that patients are receiving inadequate care, due in part to deficits in knowledge and skills of health care professionals. It is difficult to overestimate the burden of chronic pain. Pain is the main reason why people seek medical care, among these examples of chronic pain are osteoarthritis, back pain, and headache.

Effective pain management for patients is a professional and ethical duty for nurses. As nurses get to know their patients better, they may gauge their level of discomfort and anxiety and, if necessary, employ non-pharmacological treatments. The ability of nurses to effectively manage pain depends on their expertise and comprehension of the condition, which includes regular observation and documenting of pain as well as systematic and consistent assessment. As specifically stated in the in Article 1, Section 1 of the Commission en Banc Resolution No. 179 dated April 19, 2009, that: The nurse assumes caring role in the promotion and restoration of health, prevention of disease, and alleviation of suffering and, when recovery is not possible, in assisting patients towards a peaceful death. The nurse also collaborates with other members of the health team and other sectors to achieve quality healthcare. Moreover, the nurse works with individuals, families, population groups, communities and societies, as a whole, in ensuring active participation in the delivery of holistic care.

The delivery of holistic care includes the knowledge and attitude of nurses that greatly affect the use of non-pharmacological pain management methods. Non-pharmacologic pain management simply refers to the physical, behavioral, cognitive, and complementary interventions that allow patients to experience more completely controlled pain. The advantages of non-pharmacological pain management are that they are relatively low cost and safe, and easier for nurses to implement. Research indicated that non-pharmacologic method could save opioid regardless of surgery (Tick et al. 2019). Study found that nurses with positive attitude could facilitate the practice of non-pharmacological pain management approaches (Zelege, Kassaw and Eshetie 2021). Therefore, increasing nurses' knowledge of non-pharmacological methods in pain management is essential.

Finding effective non-pharmacological pain management methods can enable nurses to better manage pain, reduce the use of pain

medications especially opioids and the length of hospital stay, increase patient satisfaction, and reduce the health care costs. This thesis is to find effective and high quality on-pharmacological management evidence to guide nursing clinical practice. Although effective non-pharmacologic pain management evidently provides a lot of benefits, studies showed that this pain management is still poorly implemented and remains a major challenge in healthcare system (Liu et al. 2017;3 Rafati, Soltaninejad, Aflatoonian and Mashayekhi, 2016).

One non-pharmacological approach to decrease pain is deep breathing exercises or diaphragmatic breathing. This relaxation therapy can be considered as a method of chronic pain management and has an extremely therapeutic effect on chronic pain. It provides or aims to help in relaxation, deep breathing is perceived crucial to many relaxation procedures and can independently induce a relaxed frame of mind. It can also serve as a distraction strategy, deep breathing makes you concentrate hard on the breathing process, thus taking your mind away from pain or other stressors. Deep breathing may also reverse physical symptoms of anxiety, when anxious or stressed, people often take shallow, rapid breaths or might even hyperventilate. This can further result in dizziness, blurred vision, pins and needles and chest pain. Slow deep breathing helps reduce these symptoms to a major extent. This technique which increases patient's control over some aspect of pain can be a method for pain management. Deep breathing exercise applied to patient in pain may decrease physiological input due to secondary reflex muscle contraction as well as alter the psychological variables. Thus, this non-pharmacological intervention is highly suggested as a pain control measure that can be used by nurses in daily practice.

The researcher as a nurse supervisor and educator concentrates on relaxation in patients during hospitalization and improving patients' self-care. This study identifies and reviews nurses' experiences in non-pharmacologic pain intervention, particularly with regards to chronic pain. Furthermore, this study could serve as an additional reference for nurses to ensure better pain management; consequently, they can pursue improvement in patient outcomes and in quality of care.

Research Methodology

Research Design

The researcher utilized the descriptive-evaluative method was employed to determine the data needed under the present investigation. The descriptive method was designed to gather information about the present existing conditions. The principal aims are to describe the nature of a situation, as it exists at the time of study, and to explore cases of phenomena. Descriptive research, according to Marczyk, DeMatteo, and Festinger (2014), is useful because it can provide important information regarding the average member of a group. Specifically, by gathering data on a large enough group of people, a researcher can describe the average member, or the average performance of a member, of the group being studied.

To Dulay, Burt, and Krashen (2012), descriptive research is useful because it can provide important information regarding the average member of a group. Specifically, by gathering data on a large enough group of people, a researcher can describe the average member, or the average performance of a member, of the group being studied. Fraenkel, Wallen, and Hyun (2013)³ added that descriptive studies describe a given situation as fully and carefully as possible. Therefore, it is in line with the aim of this research, which is to try to describe and to present the data from the respondents' point of view.

On the other hand, evaluative research design provides a means to judge actions and activities in terms of values, criteria and standards. At the same time, it is also a practice that seeks to enhance effectiveness in the public sphere and policy making. In order to improve as well as judge, there is a need to explain what happens and what would have to be done differently for different outcomes to be achieved (Weiss, 2011).⁴

The aforementioned research methodologies were used in determining the effectiveness of the non-pharmacological nursing interventions for patients with chronic pain at Sta. Maria Josefa Hospital Foundation Inc., Iriga City.

Respondents

The respondents of the study were comprised of sixty (60) nurses in the different nursing units at Sta. Maria Josefa Hospital Foundation Inc. namely Inmaculada Concepcion Station, San Jose Station, Sagrado Corazon De Jesus Station and San Ignacio De Loyola Station.

Data Gathering Tools

The researcher employed a number of time-tested research tools in gathering the necessary data. Among them are the questionnaire, informal interviews, and research conducted through the Internet.

Questionnaire

The primary tool used in this study was the pre-validated questionnaire-checklist. A questionnaire is a tool to collect and record information about a particular issue of interest and it is mostly made up of a list of questions. Questionnaires are mostly used to collect precise information to classify people and their situations; to gather information that is related to people's behavior; to look at the basic opinions and attitudes of people relating to a particular issue; and to collect information that can be tracked over time to analyze change. Churchill and Peter (2012) have shown that the questionnaire as a measuring instrument has the greatest influence on the reliability of research data. The characteristics of measurement are best controlled by the careful construction of the

instrument.

Preparation of the questionnaire. In the preparation of the questionnaire, the researcher consulted some books, unpublished theses, journals, newspapers and other related materials. The questionnaire was constructed in accordance with the following criteria defined by Fox (2014):⁶ clarity of language, specificity of contest, singleness of purpose, linguistic completeness, grammatical consistency, freedom from assumption, freedom from suggestion, and time required to finish accomplishing the questionnaire. The draft of the questionnaire was submitted to the Dean of Graduate Studies and to the adviser. Suggestions given for its improvement were reflected and after its approval, final copies were made for a dry run.

Validation of the questionnaire. Validation of the questionnaire was done by the researcher's classmates in the Research subject who are also nurses and where five (5) copies will be produced subject to the questionnaire's dry run. Applying Altares (2010)⁷ criteria, the questionnaire was subjected to a dry run using the following rating scales: 5 – excellent, 4 – very good, 3 – good, 2 – fair and 1 – poor. The criterion which determined the time required to finish accomplishing the questionnaire has the following adjectival rating; too long, long, just enough, and short.

Administration and retrieval of the questionnaire. Permit to conduct the study was obtained from the Hospital Director. The distribution and retrieval of the questionnaire were done personally by the researcher.

Statistical Treatment of the Data

The researcher employed several statistical tools to treat the data gathered. The responses of the respondents were classified and tabulated systematically according to different variables included in the study. The statistical tools used were the following: frequency distribution, percentage technique, weighted mean, and Five-Point Rating Scale.

Frequency Distribution. This is totally the answers of perceptions of the respondents and determined the percentages of each response.

Percentage Technique. In order to determine the respondents' profile, nominal data was used which consists of the raw counts of the frequencies of occurrence of the characteristics under consideration. Ordinary data/treatment was based on the frequency through the percentage formula.¹¹ The formula is:

$$P = \frac{F}{N} \times 100$$

Where: P = percentage

F=frequency

N=total number of respondents

Weighted Mean. The weighted mean was used to quantify the data and make the interpretation more objective. The formula is:

$$WM = \frac{\sum W F}{\sum F}$$

Where: WM = weighted mean

F = frequency of the number of responses

W = weight of category of responses

N = number of responses

T = total

Five-Point Rating Scale. The Likert-type scale was employed in quantifying and interpreting the weighted mean for each indicator, consisting of the following interpretations:

I. The Non-Pharmacological Interventions for Patients with Chronic Pain

Scale	Interval	Verbal Interpretations
5	4.20–5.00	Always
4	3.40–4.19	Often
3	2.60–3.39	Sometimes
2	1.80–2.59	Rarely
1	1.00–1.79	Never

II. The Perceived Effectiveness of the Non-Pharmacological Interventions in Reducing Chronic Pain

Scale	Interval	Verbal Interpretations
5	4.20–5.00	Very Much Effective
4	3.40–4.19	Much Effective
3	2.60–3.39	Moderately Effective
2	1.80–2.59	Less Effective

1 1.00–1.79 Not Effective

III. The Extent the Nurses Perform Non-Pharmacological Interventions for Patients with Chronic Pain

Scale	Interval	Verbal Interpretations
5	4.20–5.00	Very Much Employed
4	3.40–4.19	Much Employed
3	2.60–3.39	Moderately Employed
2	1.80–2.59	Less Effective
1	1.00–1.79	Not Employed

Results

This chapter mainly focuses on the presentation, analysis, and interpretation of the data which were taken from the results of the survey administered to the research subjects and respondents. The results of the investigation were tallied, tabulated, computed, visualized in graphs, and statistically analyzed to come up with logical conclusions and recommendations.

Non-Pharmacological Interventions for Patients with Chronic Pain

Non-pharmacological pain management interventions are a set of psychological and physical pain management methods that play a vital role and can be used both complementarily or independently. Non-pharmacological pain management methods have fewer and uncomplicated side effects. Therefore, they have been considered as safer and more convenient methods that can reduce the negative effects of drug therapies. Furthermore, they can result in a decrease in the dose and duration of drug administration in patients with pain (Brewer and Turrise, 2019).

Non-pharmacological therapies are ways to reduce pain without using medicine, which is cheap and easy to implement. Table 1 presents the non-pharmacological interventions for patients with chronic pain at Sta. Maria Josefa Hospital Foundation Inc., Iriga City.

Table 1: Non-Pharmacological Interventions for Patients with Chronic Pain

Indicators	WM	Interpretation	Rank
Massage	4.20	Always	4
Positioning	4.25	Always	1
Hot & Cold application	4.21	Always	3
Acupuncture	3.95	Often	6
Transcutaneous electrical nerve stimulation (TENS)	2.58	Rarely	10
Progressive muscle relaxation (PMR)	3.98	Often	5
Deep breathing exercises	4.23	Always	2
Guided Imagery	3.26	Sometimes	9
Aromatherapy	3.28	Sometimes	8
Music Therapy	3.92	Often	7
Average Weighted Mean	3.79	Often	

Notably, non-pharmacological interventions for patients with chronic pain are always utilized by the nurses at Sta. Maria Josefa Hospital Foundation Inc. as follows: Positioning (4.25); Deep breathing exercises (4.23); Hot & Cold application (4.21), and; Massage (4.20). Obviously, these are the most commonly used non-pharmacological therapies, they are beneficial and have no obvious adverse effects. Currently, non-pharmacological therapies have been increasingly used for pain management because pharmacotherapies often have some side effects and increase the risk of complications. One study showed that non-pharmacological treatments can play an indispensable role in pain management in patients (Pak, Micalos, Maria, and Lord, 2020).

For specific description, positioning is actually staying in the bed for a long time in the same position which causes the patient pressure, discomfort, and pain. Position change reduces the pressure in the painful area, increases blood circulation, prevents muscle contraction, helps the patient's comfort, and prevents pain. Deep and slow breathing (DSB) techniques, as a component of various relaxation techniques, have been reported as complementary approaches in the treatment of chronic pain syndromes. Hot

application: Heat is effective in pain caused by muscle spasms, local anesthesia secondary complaints, joint involvement, peristalsis and gastric acidity decrease, and vasoconstriction. It leads to vasodilation, reducing blood viscosity and muscle tension, increasing tissue metabolism, and eliminating metabolic wastes. Cold application: Cold reliefs pain with the effects such as a decrease in edema by vasoconstriction as a result of sympathetic fiber activation, suppression of inflammatory reactions, and decrease in muscle spasm and contraction. Massage: Manually or mechanically applied massage is applying pressure to the body with rhythmic movements. Proper massage does not only block the pain impulses also reduces muscle spasm and tension. It regresses hypoxia by dissolving muscle spasm and also stimulates the nervous system causing endorphins and serotonin secretion, so the pain threshold increases and the patient feels less pain (Aslan and Yıldız, 2018).

However, considered as often used were: Progressive muscle relaxation (PMR) (3.98); Acupuncture (3.95), and; Music Therapy (3.92). These interventions were also used in improving the symptoms of patients undergoing mechanical ventilation in ICUs. Further, they reduce the likelihood of dependence on drug interventions by facilitating pain relief as the first line of treatment. In addition, these non-pharmacological interventions also yield other benefits, such as lower medical costs, greater availability to patients, diversification and ease of use, and greater patient satisfaction.

Progressive muscle relaxation involves deliberately contracting muscles and relaxing completely in turn. The aim is to allow to patient comprehend the tension in the muscles and reduce it voluntarily; while Acupuncture is a technique made by pricking needles made of certain minerals into specific spots related to the pain throughout the body or painful areas; and the Music therapy is used to provide relaxation and distract the patient. Music therapy stimulates endorphin secretion, relaxing the individual and increasing pain tolerance (Bolat, 2018).

On the other hand, treated as sometimes used non-pharmacological nursing interventions for patients were: Aromatherapy (3.28), and; Guided Imagery (3.26). These are also acceptable and accessible methods for pain relief and are considered safe. The study of Yin et al. (2020) showed that these non-pharmacological techniques showed rare severe adverse reactions in the management of pain.

Speaking of Aromatherapy, it is an essential oil used to prevent and reduce pain by massage, inhalation, steam or bath; while Guided imagery is a relaxation technique that involves dwelling on a positive mental image or scene. It is a tool that psychotherapists use, but a person can also teach it to themselves and use it at any time (Babadag, 2019).

Lastly, Transcutaneous Electrical Nerve Stimulation (TENS) is considered as sometimes used by nurses with an average weighted mean of 2.58. This is a therapy that uses low-voltage electrical current to provide pain relief. A TENS unit consists of a battery-powered device that delivers electrical impulses through electrodes placed on the surface of the skin. The electrodes are placed at or near the nerves where the pain is located or at trigger points. The study by Bas (2019) found that TENS treatment provided temporary pain relief for people with fibromyalgia while the machine was in use. In a different study, Cevik and Ozpınar (2018) revealed that nurses had inadequate knowledge in administering TENS.

Non-pharmacological interventions for patients with chronic pain were often utilized by the nurses at Sta. Maria Josefa Hospital Foundation Inc., with an average weighted mean of 3.79.

Pain is an aspect of the human experience that leads to devastating consequences when managed improperly. As the ones who spend the most time with patients, nurses are primarily responsible for advocating and ensuring patients receive adequate pain treatment during their treatment. While pharmacology is incredibly useful in managing pain, non-pharmacologic modalities can be added to supplement treatment and further lower pain scores. When pain is optimally managed, healthcare costs decrease, the healing process is accelerated, and future complications are avoided. Moreover, optimal pain management is considered a universal right, and when pain is managed well, the patient experiences a higher quality of life, and better recovery, and is treated with the dignity and respect that they deserve.

Perceived Effectiveness of the Non-Pharmacological Interventions in Reducing Chronic Pain

Non-pharmacological pain therapy refers to interventions that do not involve the use of medications to treat pain. The goals of non-pharmacological interventions are to decrease fear, distress, and anxiety, reduce pain, and provide patients with a sense of control. When deciding the most effective non-pharmacological technique, take into consideration the patient's age, developmental level, medical history and prior experiences, current degree of pain, and/or anticipated pain. The advantage of non-pharmacological treatments is that they are relatively inexpensive and safe.

The perceived effectiveness of the non-pharmacological interventions in reducing chronic pain can be reaped in Table 2. Apparently, the non-pharmacological interventions in reducing chronic pain perceived as very much effective were: Positioning (4.28), and Massage (4.20). This is found consistent with the previous findings that these are the most commonly used non-pharmacological therapies due to their effectiveness.

Table 2: The Perceived Effectiveness of the Non-Pharmacological Interventions in Reducing Chronic Pain

Indicators	WM	Interpretation	Rank
Massage	4.20	Very Much Effective	2
Positioning	4.28	Very Much Effective	1
Hot & Cold application	4.18	Much Effective	3
Acupuncture	3.37	Moderately Effective	7
Transcutaneous electrical nerve stimulation (TENS)	3.08	Moderately Effective	10
Progressive muscle relaxation (PMR)	3.87	Much Effective	5
Deep breathing exercises	4.10	Much Effective	4
Guided Imagery	3.23	Moderately Effective	8
Aromatherapy	3.15	Moderately Effective	9
Music Therapy	3.42	Much Effective	6
Average Weighted Mean	3.69	Much Effective	

In terms of positioning, this can help many patients as it can relieve muscle pain, tension, and discomfort. It can improve blood circulation which in turn prevents ulcers from developing. Moreover, elevating extremities while positioning can be beneficial in decreasing pain and prevent edema as well. It helps to prevent further complications, reduces the risk for developing injuries, prevents developing bed ulcers and most importantly reduces alleviated pain. Therefore, positioning the patient correctly and re-positioning can help with the above complications (Chandler, Preece and Lister, 2018).⁹

Massage therapy belongs to manual stimulation techniques, which is one of the most popular non-pharmacological alternative therapies. Its positive effects on pain management have been confirmed by some research, and it is an acceptable and accessible method (Martorella et al. 2021; Demir and Saritas 2020; Kukimoto et al. 2019). Massage is also considered safe. Their study showed that massage has rare severe adverse reactions in the management of pain. There are many benefits of massage as it can reduce stress, promote muscle relaxation, lower blood pressure, improve circulation, help improve posture, and strengthen the body's immune system. Moreover, there are some studies that suggest that massage has been found to decrease pain and anxiety in many surgical and nonsurgical patients.

In addition, researchers Cherkin et al. (2021) stated that massage had proven to be an effective non-pharmacologic treatment, as it induces a natural state of relaxation, decreases blood pressure, reduces anxiety, and induces feelings of overall well-being. By deactivating the sympathetic nervous system's fight or flight response, the experience of pain is diminished. It is understood that massage also increases endogenous endorphin release, thereby providing conflicting stimuli and overriding the pain signals. Geziry et al. (2020)¹⁴ also found out that massage therapy can target myofascial and neuromuscular pain by stimulating blood flow and lymphatic drainage, as well as decreasing inflammation, edema, and muscle spasms.

Meanwhile, the non-pharmacological interventions perceived by the respondents as much effective were: Hot & Cold application (4.18); Deep breathing exercises (4.10); Progressive muscle relaxation (PMR) (3.87), and; Music Therapy (3.42). These quantitative results indicate that these interventions effectively relieved postoperative pain; and likewise improved patients' satisfaction and shortened the hospital stay. This present finding is parallel to the study of Gutsell et.al. (2019), where they found these non-pharmacological interventions significantly decreased pain levels assessed by the numeric pain scale, FLACC pain scale, and functional pain scale. They also concluded based on their research that even a single music therapy session incorporating therapist-guided autogenic relaxation and live music could be considered an effective non-pharmacologic tool for lowering pain in patients, especially patients undergoing palliative care.

Moreover, the non-pharmacological interventions perceived as moderately effective by the respondents were: Guided Imagery (3.23); Aromatherapy (3.15), and; Transcutaneous electrical nerve stimulation (TENS) (3.08). Understandably, these can also help reduce the pain built not to a greater extent. A more rigorous design was needed to confirm the benefits of these non-pharmacological interventions. The perceived effectiveness of the non-pharmacological interventions in reducing chronic pain was much more effective with a weighted mean of 3.69.

In conclusion, pain is a common reason client seek medical attention and is encountered by every healthcare provider. It requires a multidisciplinary approach (physician, nurse, pharmacist, physiotherapist, anesthesiologist). These healthcare professionals must be knowledgeable about effective and compassionate pain relief, while clients and their families should be assured such relief will be provided. Communication and collaboration between members of the healthcare team, the client, and the family are essential in achieving adequate pain management. Ideally, the client directs the plan of care and the pain level to be achieved.

The Extent Nurses Perform Pharmacological Interventions for Patients with Chronic Pain

Pain in surgical patients is one of the most serious complaints in the postoperative period, and if not controlled, it increases the healing process by causing respiratory, excretion, circulatory, and other systemic complications. As a result, some patients die, life

quality and patient satisfaction decrease, the length of hospital stay increases, and the care cost increases. It may not be possible to reduce the pain completely and control it. However, the important thing is to reduce the pain to the extent that the patient feels comfortable. For this reason, nurses have a great responsibility in this regard. Table 3 reflects the results.

In fact, according to Buyukyılmaz and Astı (2019),¹⁶ the nurses should be involved actively in the treatment of pain, diagnose the patient in the direction of a nursing model/theory use the pharmacological and non-pharmacologic methods specially designed for the patient, evaluate the results and prevent the problems that may arise by keeping the pain within the livable limits. Thus, the present study

Table 3: Extent Nurses Perform Non-Pharmacological Interventions for Patients with Chronic Pain

Indicators	WM	Interpretation	Rank
Explain the procedure to the patient and ensure that he or she agrees to treatment.	4.83	Very Much Employed	1
Assess the patient's respirations, body position, facial expression, tone of voice, mood, mannerisms, and expressions of discomfort.	4.45	Very Much Employed	2
Observe the patient performing the pain control measures.	4.07	Much Employed	5
Assess, treat, and reassess pain.	4.36	Very Much Employed	3
Provide the patient with time to practice the exercise without interruption.	4.19	Much Employed	4
Direct the patient to practice deep, slow, rhythmic breathing.	3.99	Much Employed	6
Apply muscle tension to a specific part of the body. Involve quickly relaxing the tensed muscles and let all the tightness flow out of the tensed muscles.	3.40	Much Employed	10
Concentrate on the physical sensations of different parts of the patients' body by focusing on the sensations of warmth, heaviness, and relaxation.	3.74	Much Employed	8
Use electronic devices to measure different bodily functions, such as temperature of the skin, pulse rate, or tension in the muscles.	3.47	Much Employed	9
Let the patient stay in a relaxed state for a moment, breathing deeply and slowly, and ask the patient to breathe in to the count of two whilst visualizing a side of square.	3.86	Much Employed	7
Average Weighted Mean	4.04	Much Employed	

determined the extent the which nurses perform pharmacological interventions to patients with chronic pain. (2020) showed that nurses had inadequate knowledge and negative attitude towards non-pharmacological pain management and a majority of nurses did not use non-pharmacological pain management methods.

Nurses have a significant role in pain management because patient advocates who spend more time with patients than any other provider, nurses have an opportunity to enhance patient care and abolish the status of pain as an undertreated symptom. That is, because of the nature of their practice, nurses are in an excellent position to contribute to optimal pain management. It was noted by McCaffery and Pasero (2019) that a nurse's core values include the ethical obligation to relieve a patient's pain. Nursing education teaches that the patient's pain report must be respected and that the patient himself or herself is the best judge of the quality and intensity of their pain.

In continuation, the indicators with a verbal description of much employed were: Provide the patient with time to practice the exercise without interruption (4.19); Observe the patient performing the pain control measures (4.07), Direct the patient to practice deep, slow, rhythmic breathing (3.99); Let the patient stay in a relaxed state for a moment, breathing deeply and slowly, and ask the patient to breathe into the count of two whilst visualizing a side of the square (3.86); Concentrate on the physical sensations of different parts of the patient's body by focusing on the sensations of warmth, heaviness, and relaxation (3.74); Use electronic devices

to measure different bodily functions, such as the temperature of the skin, pulse rate, or tension in the muscles (3.47), and; Apply muscle tension to a specific part of the body. Involve quickly relaxing the tensed muscles and let all the tightness flow out of the tensed muscles (3.40). Although, the results showed commendable performance from the respondents, enhancement of their performance would lead to excellent pain management among their patients.

Non-pharmacological interventions for patients with chronic pain were much employed by the nurses at Sta. Maria Josefa Hospital Foundation Inc. with an average weighted mean of 4.04. Nursing professionals are constantly submitted to a heavy workload and have to perform their routine activities without planning, which produces distress and fatigue because of long working hours. Nonetheless, adequate pain management cannot be compromised by labor issues: it is necessary to develop knowledge, abilities, and attitudes to improve the practice of pain management even in the face of professional challenges. Tercan (2018) suggested that adequate pain management can be reached through professional development at training courses, emergency or specific classes and continuous ad structured programs. This was likewise proven by the study of Faydali et al. (2019), who found out that the nurses' conduct to intervene with patients with pain complaints was significantly improved after their participation in continuing education or training programs.

Training such as courses and seminars specific to pain, pain control and non-drug pain management methods in cooperation with hospitals and universities are required to ensure that nurses have adequate knowledge on these issues. More nurses should be given the opportunity to apply these practices by benefitting from the knowledge and experience of established nurses in this subject. The hope is that the continuing education event helped nurses realize what they can do to help their patients, without having to get an order from an advanced care provider. This will hopefully allow patients to have their comfort needs met and for nurses to feel a sense of fulfillment and satisfaction.

After all, nurses are indispensable part and a member of the health care team who faced the patient with pain and who often suffer from being unable to fully relieve their pain. Nursing is a profession that provides services directly to people based on resolving patient's problems and relaxing them besides protecting and improving the health of the healthy individual. For this reason, in basic nursing education, the teaching of non-pharmacological methods which can be applied in the control of pain should be given more place, and proper repetition should be done.

Training Program Guide for Non-Pharmacological Chronic Pain Management

Since most nurses frequently receive insufficient pre- and post-training about pain and its treatment, the training program placed a strong emphasis on the necessity of changing healthcare practice to incorporate nonpharmacological management of pain. This has important implications for implementation and dissemination that need to be taken into consideration. Physicians who oppose working together with other practitioners are one of the major obstacles to interprofessional education and healthcare. Implementing collaborative practice necessitates practitioners to take into account many facets of a patient's pain experience. Moreover, this training program for non-pharmacological chronic pain management serves as a manual for all Healthcare professionals to concentrate on patients' requirements, the pain they face every day, and the functional restrictions imposed by the pain that commonly led to depression and increased their risk of developing other mental health issues. With this more complete understanding of the patient's pain experience, a treatment plan can be devised.

Furthermore, It is the output of the study for the nurses to provide quality nursing care service since nurses have the responsibility to relieve patients' pain. Training on NPPM methods for nurses is quite essential for them to treat pain holistically, increase patient satisfaction, and are cost-effective.

Summary, Findings, Conclusions, And Recommendations

Summary

The study determined the effectiveness of non-pharmacological interventions for patients with chronic pain at Sta. Maria Josefa Hospital Foundation Inc., Iriga City. Specifically, it sought answers to the following questions: 1. What are the non-pharmacological interventions for patients with chronic pain? 2. What is the perceived effectiveness of non-pharmacological interventions in reducing chronic pain? 3. To what extent do nurses perform non-pharmacological interventions for patients with chronic pain? 4. What Training Program can be proposed based on the results of the study?

The study was premised on the assumptions that: 1. The non-pharmacological interventions for patients with chronic pain vary; 2. The non-pharmacological interventions in reducing chronic pain is perceived by the respondents as effective; 3. The extent the nurses perform non-pharmacological interventions to patients with chronic pain is effective; 4. The Training Program was proposed based on the results of the study.

The respondents of the study comprised sixty (60) nurses in the different nursing units at Sta. Maria Josefa Hospital Foundation Inc. The researcher employed the descriptive survey method with a validated questionnaire as the primary data-gathering instrument. The statistical tools used the frequency distribution and weighted mean.

Findings

From the statistical treatment of the data with the corresponding analysis and interpretation thereto, the following findings have

surfaced:

1. On the non-pharmacological interventions for patients with chronic pain, the nurses at Sta. Maria Josefa Hospital Foundation Inc. always utilizes the following: Positioning (4.25); Deep breathing exercises (4.23); Hot & Cold application (4.21), and; Massage (4.20); while often used: Progressive muscle relaxation (PMR) (3.98); Acupuncture (3.95), and; Music Therapy (3.92), sometimes used were: Aromatherapy (3.28), and; Guided Imagery (3.26) and Transcutaneous electrical nerve stimulation (TENS) (2.58) was rarely used. Non-pharmacological interventions for patients with chronic pain were often utilized by the nurses at Sta. Maria Josefa Hospital Foundation Inc. with an average weighted mean of 3.79.
2. On the perceived effectiveness of the non-pharmacological interventions in reducing chronic pain, perceived as very much effective were: Positioning (4.28), and Massage (4.20); while treated as much effective were: Hot & Cold application (4.18); Deep breathing exercises (4.10); Progressive muscle relaxation (PMR) (3.87), and; Music Therapy (3.42). Guided Imagery (3.23); Aromatherapy (3.15), and Transcutaneous electrical nerve stimulation (TENS) (3.08) were perceived as moderately effective. The perceived effectiveness of the non-pharmacological interventions in reducing chronic pain was much more effective with a weighted mean of 3.69.
3. On the extent the nurses perform non-pharmacological interventions for patients with chronic pain, the indicators with a qualitative rating of much employed were: Explain the procedure to the patient and ensure that he or she agrees to treatment (4.83); Assess the patient's respirations, body position, facial expression, tone of voice, mood, mannerisms, and expressions of discomfort (4.45); and Assess, treat, and reassess pain (4.36). Much employed non-pharmacological interventions were: Provide the patient with time to practice the exercise without interruption (4.19); Observe the patient performing the pain control measures (4.07), and; Direct the patient to practice deep, slow, rhythmic breathing (3.99). Let the patient stay in a relaxed state for a moment, breathing deeply and slowly, and ask the patient to breathe into the count of two whilst visualizing a side of the square (3.86); Concentrate on the physical sensations of different parts of the patient's body by focusing on the sensations of warmth, heaviness, and relaxation (3.74); Use electronic devices to measure different bodily functions, such as the temperature of the skin, pulse rate, or tension in the muscles (3.47), and; Apply muscle tension to a specific part of the body. Involve quickly relaxing the tensed muscles and letting all the tightness flow out of the tensed muscles (3.40). Non-pharmacological interventions for patients with chronic pain were much employed by the nurses at Sta. Maria Josefa Hospital Foundation Inc., with an average weighted mean of 4.04.
4. The Training Program for non-pharmacological chronic pain management serves as a guide for all healthcare professionals to focus on patients' needs the pain, they experience every day, and the functional limitations imposed by the pain that frequently led to depression and increases their sense of pain and hopelessness.

Conclusions

In the light of the findings, the following conclusions were drawn:

1. The non-pharmacological interventions for patients with chronic pain vary and are often applied.
2. The non-pharmacological intervention in reducing chronic pain is perceived by the respondents as much effective.
3. The extent to which nurses perform non-pharmacological interventions for patients with chronic pain is perceived by the respondents as much employed.
4. The Training Program can help the nurses become highly proficient in the application of non-pharmacological interventions.

Recommendations

In the light of the findings and conclusions, the following recommendations were formulated:

1. To address what non-pharmacological interventions to patients with chronic pain be applied, take into consideration the patient's age, developmental level, medical history, prior experiences, current degree of pain, and/or anticipated pain.
2. For the non-pharmacological interventions to become very much effective, nurses should implement individualized pain management programs considering non-pharmacological interventions appropriate for the individual based on the patient's needs, type of pain, condition, and stage of the disease.
3. Training such as courses and seminars specific to pain, pain control, and non-drug pain management methods in cooperation with hospitals and universities are required to ensure that nurses have adequate knowledge of non-pharmacological interventions.
4. The Training Program for non-pharmacological Chronic Pain Management can be adopted.

Bibliography

1. Abimbola, O.E. (2021). "A survey of nurses knowledge and utilization of non-pharmacological methods of pain control at two selected hospitals in Ibadan, OYO State," *International Journal of Medicine, Nursing & Health Sciences*, Volume 42, No. 15.
2. Adriano, M. S. (2018). "Pediatric pain practices: A national survey of health professionals," *Journal of Pain and Symptom Management*, Volume 31, No. 9
3. Agambire, R. (2020). "Therapies in the management of postoperative pain: A study in a tertiary hospital, Ghana," *Tanzania Journal of Health Research*, Volume 14, No. 5.

4. Almanzlawi, Hanan Ali Ibrahim (2019). "Effect of Progressive Muscle Relaxation on Pain and Fatigue among Post Cardiac Surgery Patients," Unpublished Master's Thesis, Beni-Suef University.
5. Altares, P. S. et.al. (2010). *Elementary Statistics: A Modern Approach*. Quezon City: Rex Bookstore Inc.
6. Antwi, F.B. et.al. (2019). "Nurses' attitude and pain assessment practices on non-pharmacologic pain management among patients with cephalalgia," Unpublihed Doctraol Dissertatio, Adventist University of the Philippines, Silang, Cavite.
7. Arslan, S. and Elebioglu, A. (2021). "Postoperative pain management and alternative practices," *International Journal of Human Sciences*, Volume 21, No. 6.
8. Aslan, F.E. (2018). "The effectiveness of skin stimulation and relaxation in postoperative pain management," *Applied Nursing Research*, Volume 13, No. 2
9. Babadag, B. (2019). "The Relationship between Pain Reliefs and Coping with Pain of Algology Patients," Unpublished Master's Thesis, Eskisehir Osmangazi University, Eskisehir.
10. Balbuena, A.D. (2019). "The prevalence and perception of pain amongst hospital in-patients," *Journal of Clinical Nursing*, Volume 17, No. 3.
11. Bas, N.G. et al. (2019). "Postoperative pain management: nursing practices," *Journal of Hacettepe University Faculty of Nursing*, Volume 33, No. 8.
12. Bolat, H.N. (2018). "Determination of the knowledge and practices of nurses for surgical pain management," *Anadolu Journal of Nursing and Health Sciences*, Volume 19, No. 4.
13. Borromeo, Daryl M. (2021). "What do nurses know and believe about patients with pain? Results of a hospital survey," *Journal of Pain and Symptom Management*, Volumes 11, No. 1.
14. Brewer, N.J. ad Turrise, S.L. (2019). "Nurses' knowledge and treatment beliefs: Use of complementary and alternative medicine for pain management," *The Journal of Education And Research in Nursing*, Volume 13, No. 2.
15. Buyukyilmaz, F.E. (2019). "The effect of relaxation techniques and back massage on pain and anxiety in Turkish total hip or knee arthroplasty patients," Unpublished Doctraol Dissertation, Istanbul University, Istanbul.
16. Calisanie, Nyayu Nina Putri and Ratnasari, Anisa Nur (2020). "The Effectiveness of the Finger Grip Relaxation Technique to Reduce Pain Intensity in Post-Appendectomy Patients," Unpublished Master's Thesis, Case Western Reserve University.
17. Carr, E., Layzell, M. and Christensen, M. (2020). *Advancing Nursing Practice in Pain Management*. New Jersey: John Wiley & Sons, Inc.
18. Ceccio, C. M. (2019). "Postoperative pain relief through relaxation in elderly patients with fractured hips," *Journal of Advanced Nursing*, Volume 39, No. 10.
19. Cevik, K. and Ozpinar, S. (2018). "Pain, non-pharmacologic ways to manage pain and the role and health profosyonel," *International Journal of Psychiatry and Psychological Researches*, Volume 41, No. 10.
20. Chandler, A., Preece, J. and Lister, S. (2018). "Using heat therapy for pain management," Retrieved from: <http://link.galegroup.com.ezproxy.lib.ucalgary.ca/>
21. Cherkin, D. et al. (2021). "A comparison of the effects of 2 types of massage and usual care on chronic low back pain," *Journal of Pain Official Journal of the American Pain Society*, Volume 66, No. 14.
22. Churchill, L. and Peter, D. (2012). *Research Methods: Determinants of Educational Outcomes*. New York: Appleton Crafts.
23. Commission en Banc Resolution No. 179, Article 1, Section 1, <http://www.emembers.tripad.com>.
24. Davies, P., Francis, P. and Jupp, V. (2011). *Doing Criminological Research*. London: Sage Publishing House.
25. Dawn, D.S. and David, R.C. (2019). "Cognitive dimensions of chronic pain," *Social Science Medicine*, Volume 19, No. 4.
26. De Paula, Adriana Aparecida Delloiagone et al. (2018). "The use of the Progressive Muscle Relaxation technique for pain relief in gynecology and obstetrics," *Research in Nursing and Health* (Volume 28, No. 4), 78-86.
27. De Vera, F. (2022). "The Efficacy of Relaxation Techniques for Pain Relief in Patients Undergoing Abdominal Surgery," Unpublished Master's Thesis, University of the East, Manila.
28. Demetria, Adel V. (2018). "Nurses' perceptions of complementary and alternative medical therapies," *Journal of Community Health*, Volume 26, No. 5.
29. Demir, B. and Saritas, S. (2020). "Effect of hand massage on pain and anxiety in patients after liver transplantation: A randomized controlled trial. Complementary therapies in clinical practice," Retrieved from <https://doi.org/10.1016/j.ctcp.2020.101152>
30. Devmurari, Divya and Nagrale, Sanket (2018). "Effectiveness of Jacobson's Progressive Muscle Relaxation Technique for Pain Management in Post-Cesarean Women," Unpublished Master's Thesis, Sancheti Institute College of Physiotherapy, Pune, Maharashtra, India.
31. Dulay, Heidi, Burt, Marina and Krashen, Stephen (2012). *Meaning and Perspective in the Research Process*. Boston: Houghton Mifflin.
32. Ebneshahidi, Amin and Mohseni, Masood (2019). "The effect of patient-selected music on early postoperative pain, anxiety, and hemodynamic profile in cesarean section surgery," *Applied Nursing Research*, Volume 52, No. 13.

33. Edelfonso, V.R. (2019). "Factors influencing nurses' decisions to use non-pharmacological therapies to manage patients' pain," *Philippine Journal of Advanced Nursing*, Volume 19, No. 4.
34. Faydali, S. et.al. (2019). "The knowledge and practices of nurses about pain management with non-pharmacological methods," *Clinical Laboratory*, Volume 17, No. 4.
35. Flaherty, G. G. and Fitzpatrick, Joyce J. (2018). "Relaxation Technique to Increase Comfort Level of Postoperative patients: A Preliminary Study," *Contemporary Nursing Research*, Volume 52, No. 14.
36. Fox, Nick (2014). *How to Design a Questionnaire*. London: Sage Publications.
37. Fraenkel, J.R., Wallen, N.E. and Hyun, H.H. (2012). *How to Design and Evaluate Research in Education*. New York: McGraw Hill Publishing House.
38. Friesner, S.A., Curry, D.M. and Moddeman, G.R. (2018). "Comparison of two pain-management strategies during chest tube removal: Relaxation exercise with opioids and opioids alone," *The Journal of Critical Care*, Volume 35, No. 10.
39. Geziry, E. et al. (2020). "Non-Pharmacological Pain Management," *Journal of Pain and Symptom Management*, Volume 45, No. 12.
40. Good, Carter V. (2013). *Dictionary of Education*. New York: McGraw Hill Book Company, Inc.
41. Good, M. et al. (2019). "Pain outcomes after intestinal surgery," *Outcomes Management for Nursing Practice* (Volume 45, No. 17), 41-46.
42. Graffam, Shirley and Johnson, Arthur (2017). "A Comparison of Two Relaxation Strategies for the Relief of Pain and Its Distress," Unpublished Master's Thesis, University of Texas, San Antonio, Texas.
43. Gutsell, K.J. et.al. (2019). "Music therapy reduces pain in palliative care patients: A randomized controlled trial," *Journal of Pain and Symptom Management*, Volume 49, No. 13.
44. Hagan, J. (2015). "Defining Hospitality- Readers Respond with their Insight," Available at: <http://www.hotel-online.com/News/DefiningHospitality.html>
45. Hassett, A. and Williams, D. (2018). "Non-pharmacological treatment of chronic widespread musculoskeletal pain," *Research in Clinical Rheumatology*, Volume 25, No. 6.
46. Hastalard, Ameliyati Olan (2019). "The Effect of Progressive Muscle Relaxation Exercises After Endotracheal Extubation on Vital Signs and Anxiety Level in Open Heart Surgery Patients," Unpublished Doctoral Dissertation, University of Benin.
47. Ibitoye, Bukola Mary (2019). "The Use of Distraction as a Pain Management Technique among Nurses in a North-central city in Nigeria," Unpublished Master's Thesis, Obafemi Awolowo University, Nigeria.
48. Jarrah, M. I. (2022). "The effect of slow deep breathing relaxation exercise on pain levels during and post chest tube removal after coronary artery bypass graft surgery," *International Journal of Nursing Sciences*, Volume 48, No. 11.
49. Jilmy, Jose A. (2021). "Effectiveness of Quick Relaxation Technique on Pain Associated with Chest Tube Removal among Postoperative Coronary Artery Bypass Grafting Patients in a Tertiary Care Hospital, Delhi," Unpublished Doctoral Dissertation, University of Delhi, New Delhi.
50. Jira, L. (2022). "Knowledge and attitude towards non-pharmacological pain management and associated factors among nurses working in Benishangul Gumuz Regional State Hospitals in Western Ethiopia," *Journal of Clinical Psychology*, Volume 56, No. 15.
51. Kheshti, R. et al. (2020). "Health care workers' knowledge, attitude, and practice about chronic pain management, Shiraz, Iran," *Clinical Journal of Chronic Pain*, Volume 19, No. 4.
52. Kirou-Mauro, J. et al. (2019). "Pain treatment and quality of life," *Gerontology Nursing*, Volume 20, No. 7.
53. Kuhn, S. et.al. (2018). "Perceptions of pain relief after surgery," *British Medical Journal*, Volume 47, No. 16.
54. Kukimoto, Y. et.al. (2019). "The Effects of Massage Therapy on Pain and Anxiety after Surgery: A Systematic Review and Meta-Analysis," *Pain Management Nursing*, Volume 18, No. 6.
55. Laurente, C.M. (2021). "Nursing caring science," *Philippine Journal of Nursing*, Volume 80, No. 33.
56. Mahama, Faisal and Ninnoni, Jerry P.K. (2020). "Assessment and management of postoperative pain among nurses at a resource-constraint teaching hospital in Ghana," *Journal of Nursing Management*, Volume 25, No. 8.
57. Maninang, Rosemarie L. (2020). "Pediatric Nurses' Knowledge and Attitudes Survey Regarding Pain," Unpublished Master's Thesis, Manila Central University.
58. Marczyk, G., DeMatteo, D. and Festinger, D. (2014). *Essentials of Research Design and Methodology*. New York, NY John Wiley & Sons, Inc.
59. Martorella, G. et al. (2021). "Feasibility and acceptability of hand massage therapy for pain management of postoperative cardiac surgery patients in the intensive care unit," *Journal of Pain Official Journal of the American Pain Society*, Volume 36, No. 10.
60. McCaffery, M. and Wong, A. (2018). *Pain: Clinical Manual for Nursing Practice*. St. Louis, MO: CV Mosby Publishing.
61. Melzack, R. and Dennis, S.G. (2018). *Neurophysiological Foundation of Pain*. New York: Raven Press.
62. Myers, Ann (2019). "Understanding chronic pain," *Pain Management Nursing*, Volume 13, No. 2.
63. Nightingale, F. (2012). *Theoretical Basis for Nursing*. USA: Lippincott Williams & Wilkins.

64. Orem, D. (2014). *Nursing Theories: The Base for Professional Nursing Practice*. Norwalk, Connecticut: Appleton & Lange.
65. Pagoso, Cristobal (2010). *Introduction to Statistics*. Quezon City: Sinagtala Press.
66. Pak, S.C., Micalos, P.S., Maria, S.J. and Lord, B. (2020). "Nonpharmacological Interventions for Pain Management in Paramedicine and the Emergency Setting," *Journal of Pain Research*, Volume 22, No. 7.
67. Patton, M.Q. (2012). *Qualitative Research and Evaluation Methods*. Thousand Oaks, CA: Sage.
68. Pujiarto, P. (2019). "Penurunan Skala Nyeri Pada Pasien Post Open Reductional Internal Fixation Menggunakan Relaksasi Nafas Dalam Dan Terapi Musik," *Kesehat Panca Bhakti Lampung*, Volume 22, No. 5.
69. Puspitaningdyah, Furry (2021). "Effectiveness of Deep Breathing Relaxation and Music Therapy as a Pain-Reducing Intervention in Post Caesarean Section Patients," (Unpublished Master's Thesis, Universitas Pelita Harapan Tangerang Indonesia).
70. Rafati, F., Soltaninejad, M., Aflatoonian, M. and Mashayekhi, F. (2016). "Postoperative Pain: Management and Documentation by Iranian Nurses," *Journal of the Academy of Medical Sciences of Bosnia and Herzegovina*, Volume 33, No. 8.
71. Rejeh, Nahid (2019). "Effect of Systematic Relaxation Techniques on Anxiety and Pain in Older Patients Undergoing Abdominal Surgery," Unpublished Doctoral Dissertation, Shahed University, Tehran, Iran.
72. Rini, Rizky Asta Pramesti (2019). "The Effectiveness of Deep Breathing Relaxation Technique and Guided Imagery to Decrease Pain Intensity on Postoperative Fracture Patients in Bougenville Ward of Dr Soegiri Hospital," Unpublished Master's Thesis, Lamongan Universitas Airlangga, Surabaya, Indonesia.
73. Rodrigo, Farrida B. (2018). "Complementary, alternative, integrative: Have nurses kept pace with their clients?" *Urologic Nursing*, Volume 20, No. 7.
74. Roykulcharoen, Varunyupa and Good, Marion (2019). "Systematic relaxation to relieve postoperative pain," *Journal of Advanced Nursing*, Volume 47, No. 14.
75. Saputra, Septio, Djojo, Achmad and Ndeta, Egidius Umbu (2018). "The effectiveness of active-passive motion therapy and deep breath relaxation technique toward pain intensity of patients with post-section caesarean surgery in Santa Anna Room Santo Vincentius Hospital," *Scientific Journal of Nursing Research*, Volume 45, No. 12.
76. Savedra, Gina M. (2020). "Nurses' Knowledge about Pharmacological and Non-Pharmacological Pain Management in Children," Unpublished Master's Thesis, Lyceum of the Philippines University.
77. Schechter, L. et al. (2018). "Existential pain—an entity, a provocation, or a challenge?," *Pain Symptom Management*, Volume 27, No. 6.
78. Seers, K. and Carroll, D. (2018). "Relaxation techniques for acute pain management: A systematic review," *Journal of Advanced Nursing*, Volume 27, No. 6.
79. Sindhu, Sabitha Daniel J.V. (2021). "Effectiveness of Progressive Muscle Relaxation Technique on Post-Operative Pain and Anxiety Among patients Who Have Undergone Abdominal Surgery," Unpublished Doctoral Dissertation, Panjab University, India.
80. Solehati, Tetti and Rustina, Yeni (2018). "Benson Relaxation Technique in reducing pain intensity in women after cesaerean section," *Anesthesiology and Pain Medicine Journal*, Volume 71, No. 15.
81. Soriano, Rizza D. (2019). "Effect of Progressive Muscle Relaxation on Post-Operative Analgesia," Unpublished Master's Thesis, University of Sto. Tomas, Manila.
82. Sta. Maria, Antonina C., Salamat, Lorina G. and Nocon, Ferdinand P. (2010). *General Statistics*. Quezon City: National Bookstore, Inc.
83. Tercan, B. (2018). "Knowledge and practice situations of nurses on nonpharmacological methods and in pain management," *New Trends and Issues Proceedings on Advances in Pure and Applied Sciences*, Volume 38, No. 9.
84. Tick, H., Nielsen, A., Pelletier, K.R., Bonakdar, R., Simmons, S., et.al. (2019). "Evidence-Based non-pharmacologic strategies for comprehensive pain care," *Pain Management Nursing*, Volume 16, No. 7.
85. Topcu, Sacide Yildizeli and Findik, Ummu Yildiz (2019). "Effect of relaxation exercises on controlling postoperative pain," *Pain Management Nursing Journal*, Volume 23, No. 4.
86. Turiano, James L. (2018). "Nurses' Perceptions of their Pain Assessment Skills, Pain Management Practices and Attitudes toward Pain," Unpublished Doctoral Dissertation, Far Eastern University Institute of Nursing.
87. Venzon L., (2020). *Nursing Management toward Quality Care*. Philippines: C&E Publishing Inc.
88. Victorino, Susan F. et.al. (2020). "Pain management knowledge, attitudes and clinical practice: The impact of nurses' characteristics and education," *Journal of Pain and Symptom Management*, Volume 51, 18.
89. Wang, Zhiwei (2022). "Non-Pharmacological Pain Management in Adults after Surgery," Unpublished Master's Thesis, Laurea University of Applied Sciences, Finland.
90. Weiss, H. (2011). *Evaluation: Methods for Studying Programs and Policies*. Upper Saddle River, NJ: Prentice Hall.
91. Yates, P. et.al. (2020). "The prevalence and perception of pain amongst hospital in patients," *Journal of Clinical Nursing*, Volume 17, No. 4.

92. Yin, P. et.al. (2020). “Adverse events of massage therapy in painrelated conditions: a systematic review,” Pain Management Nursing Journal, Volume 14, No. 5.
93. Zeleke S., Kassaw, A. and Eshetie, Y. (2021). “Non-pharmacological pain management practice and barriers among nurses working in Debre Tabor Comprehensive Specialized Hospital, Ethiopia,” International Journal of Africa Nursing Sciences, Volume 54, No. 16.



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