KNOWLEDGE ON NON-PHARMACOLOGICAL METHODS OF PAIN MANAGEMENT AMONG NURSES AT BINDURA HOSPITAL

BY

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Approval Form

The undersigned certifies that they have supervised, read and recommended to Bindura University of Science Education for acceptance a research project entitled: Knowledge on non-pharmacological methods of pain management among registered general nurses at Bindura Provincial Hospital, Zimbabwe, submitted in partial fulfilment of the requirements of the Bachelor of Science (Honours) Degree in Nursing Education.

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Dedication

I dedicate this study to my dear husband Abram and our beautiful kids Divine Kuzivakwashe and Victory Zuvarashe. The time and patience you allowed me, the love and care I deprived you, and the support and courage you gave me. I am forever thankful.
Declaration form

I declare that the study “Knowledge on non-pharmacological methods of pain management among registered general nurses at Bindura Hospital, Zimbabwe” is my own presentation and it has not been submitted before for any Degree programme or examination in any University. The source the research has quoted have been indicated and verified as complete reference.

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Abstract
This study is a quantitative descriptive study, which was conducted with an aim to assess the knowledge on non-pharmacological methods of pain management among registered general nurses at Bindura Hospital. This is because most nurses focus more on pharmacological pain management than non-pharmacological therapies which are given less attention or accord. This study used a descriptive study design, which is a non-experimental research design so as to obtain information about registered nurses knowledge on non-pharmacological pain management. A convenience sampling technique was utilised to select a sample of seventy-five participants. Data were collected by the researcher who distributed self-administered questionnaires to available registered nurses after obtaining informed consent at Bindura Provincial Hospital. The mean knowledge score for this study was 48.6% and was below a pass mark of 50%, and far below 80% recommended by McCaffery and Ferrell, (2011) as the minimal acceptable level of knowledge on the Nurses Knowledge and Attitude Scale. A minimum knowledge score of 16% was obtained from participants showing lack of knowledge on indications of non-pharmacological pain therapies and a maximum knowledge score of 97.3% was shown on knowledge on non-pharmacological techniques. The following conclusion was drawn from the research findings; the study showed that the nurses have poor knowledge regarding non-pharmacological pain management as indicated by mean knowledge score of 48.6%. The researcher therefore recommends that the nursing administration should take an initiative in ensuring that all practicing nurses practice the highest possible pain management nursing care, and that opportunities should be made available for nurses to be educated in effective pain management utilising non-pharmacological therapies.

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Chapter one

Introduction

This chapter gave brief background on the problem under study and a statement of the problem. The chapter also highlighted the purpose of the study, its significance to health and definition of terms. It also described the conceptual framework backing the study.

Background information

The concept of pain have been defined and explained from many dimensions. The International Association for the Study of Pain (IASP: 2010) defines pain as an unpleasant sensory and emotional experience associated with actual or potential tissue damage. On a similar note, Merske and Bogduk 2009, cited by Hanan et.al, (2013) proposed that, pain is an unpleasant feeling and emotional experience that is related to real or potential tissue damage or a damage that is defined similarly. Psychological point of view, suggest pain is a common symptom intended for seeking aid but it however, have detrimental effects to individual to coping with the stressor, (Helmrich et.al, 2010). However, McCaffery and Pasero, (2011), says pain is, whatever the patient says it is, and it exists whenever the patient says it does. In practise, pain is the response of the patient to unpleasant stimuli aid physical or emotional, this is duly supported by Vickers et.al, (2013), who postulates that, pain has both physical and emotional components.

Loeser, (2011), in Theodosopoulou, et.al, (2013), states that pain is known as the fifth vital sign, and health professionals should monitor and manage it when caring for patients, (Theodosopoulou, et.al, 2013). The anatomic and physiological origin for the perception of painful stimuli exists even in extremely preterm neonates. According to the USA, National Institute of Health, (2013), the physical part of pain results from nerve stimulation. Pain may be contained to a discrete area, as in an injury, or it can be more diffuse, as in disorders like fibromyalgia. Pain is mediated by specific nerve fibres that carry the pain impulses to the brain where their conscious appreciation may be modified by many factors.

Pain is the body's way of alerting a person to potential or actual damage. According to Barret, et.al, (2013), pain is the way the peripheral nervous system warns the central nervous system of injury or potential injury to the body. The message is transmitted through nerve cells called nociceptors, by neurotransmitters. The body also releases prostaglandins that may
enhance the pain message. Rakel and Barr, (2010), describe pain as being nociceptive, neuropathic, or mixed in nature. Nociceptive pain is somatic pain that arises from an injury or visceral pain that arises from inflammation, obstruction, or ischemia. Neuropathic pain results when there is damage to the peripheral or central nervous system that alters sensation. Barret, et.al, (2013), states that nociceptive pain is typically called acute pain, which usually resolves when the condition that caused the pain is removed. However, if pain remains after the disorder is resolved, it may be considered chronic pain. Chronic pain usually lasts from three to six months and negatively impacts patient's daily lives and activities such as increased stress and inability to sleep, (Rakel and Barr, 2010).

There are three types of pain, based on where in the body the pain is felt, somatic (caused by the activation of pain receptors in either the body surface or musculoskeletal tissues), visceral (the pain we feel when our internal organs are damaged or injured and is by far the most common form of pain), and neuropathic (caused by injury or malfunction to the spinal cord and peripheral nerves). Pain of all three types can be either acute or chronic. Acute pain is short lasting and usually manifests in ways that can be easily described and observed. Chronic pain is defined as pain lasting more than three months, (Hanan, et.al, 2013)

According to the National Pain Foundation, (2010), identified classification criteria whereby pain is classified as nociceptive pain which represents the normal response to noxious insult or injury of tissues such as skin, muscles, visceral organs, joints, tendons, or bones. Included in nociceptive pain is somatic pain that is musculoskeletal (joint pain, myofascial pain), cutaneous; often well localized and visceral pain felt on hollow organs and smooth muscles and is usually Syrjala, (2010), postulate that neuropathic pain is initiated or caused by a primary lesion or disease in the somatosensory nervous system. Sensory abnormalities range from deficits perceived as numbness to hypersensitivity (hyperalgesia or allodynia), and to paraesthesia such as tingling. This is normally seen, but not limited to, diabetic neuropathy, post herpetic neuralgia, spinal cord injury pain, phantom limb (post-amputation) pain, and post-stroke central pain.

Inflammatory pain, a result of activation and sensitization of the nociceptive pain pathway by a variety of mediators released at a site of tissue inflammation. The mediators that have been implicated as key players are pro-inflammatory cytokines such IL-1-alpha, IL-1-beta, IL-6 and TNF-alpha, chemokine’s, reactive oxygen species, vasoactive amines, lipids, ATP, acid, and
other factors released by infiltrating leukocytes, vascular endothelial cells, or tissue resident mast cells. Commonly seen in appendicitis, rheumatoid arthritis, inflammatory bowel disease, and herpes zoster, (Li, et.al, 2012)

As stated by Wells, et.al, (2012), what is often overlooked is that pain has physically harmful effects and it is often actually physiologically unsafe to have pain. Smeltzer, et.al, (2010), also elaborate that regardless of its nature, pattern, or cause, pain that is inadequately treated has harmful effects beyond the suffering it causes, for example, unrelieved pain is associated with sleep alterations. Of particular importance to nursing care, unrelieved pain reduces patient mobility, resulting in complications such as deep vein thrombosis, pulmonary embolus, and pneumonia, as indicated by Wells, et.al, (2012). Bernhofer, (2011), also states that undertreated pain can lead to respiratory, cardiac and endocrine complications as well as delay healing and potentiate the onset of chronic pain. Despite the growing awareness on pain management, patients still suffer from unnecessary pain in many hospitals with the resultant negative effect on physical, emotional and spiritual health and quality of life (Luiet.al, 2010; Kankkunen et.al, 2011).

Pain management is an important aspect of patient care and nurses play a significant role in the acute care setting in providing pain assessment and treatment (Coulling and Kaslow, 2011). In this regard, nurses' role includes patient and health care professionals ‘education, attending courses and research activities on pain management (Courtenay and Carey, 2010).Nurses who possess a strong foundation in pain management poise a great deal in quality care.

The use of non-pharmacological pain relief techniques has been viewed as effective and volatile with less side effects and complications associated to them, (Rakel and Barr, 2010). There are over 20 commonly and scientifically used non-pharmacological ways of reliving pain and only 25% of these have been effectively utilized in the management of pain. According to Rakel and Barr, (2010) of the 25% it was also noted that the majority use was among chronic pain patients. On global perspective, the most challenge in the use of non-pharmacological pain techniques has been expressed in many studies as care provider attitude and lack of knowledge, International Association for the Study of Pain (IASP :2010). Data have revealed that non-drug methods of pain management do the following, diminish pain perception by reducing intensity and increasing pain tolerance, reduce pain-related distress, strengthen coping abilities; and give the patient and family a sense of control over pain (Adams and Arminio, 2010).
Traditionally, pain management tended to emphasize the use of pharmacological agents. However, pain is influenced by an array of physical and psychosocial factors, and patients differ in their response to pain and to analgesics. Therefore, it is important to have a range of options, including non-pharmacological therapies available, in order to manage patients’ pain most effectively. Guidelines produced by the World Health Organization (WHO) and the Agency for Health Care Policy and Research (AHCPR), (2010), recommend the inclusion of non-pharmacological therapies for pain, where appropriate, to ensure optimal pain control is achieved. Despite the persistence of unrelieved pain and the potential benefit of using non-pharmacological therapies to help relieve pain, an under-utilization of non-pharmacological pain interventions.

In the African context pain has been assessed using different tools in different studies. Most of the studies have revealed that pain is being under managed, with about 80% of the pain relieving method were pharmacological and 20% of the methods were non-pharmacological (American Pain Society Quality of Care Committee, 2012). Eyob, Malutu, Arnh, (2013), conducted a study that revealed that despite the knowledge on pain, the utilization of non-pharmacological pain relief was 1:4 of health personnel and this is 25% utilization. According to South African university of medical schools, (2011) the efficacy of non-pharmacological pain interventions has shown prevalence over pharmacological strategies. It however indicated that disparities in the utilization of the two techniques as shown by most of researches. South African medical schools, (2011) views the use of non-pharmacological pain interventions as more convenient and suffering alleviating. In their definition of suffering they postulated that suffering can be defined in terms of psychological elements perceived to be threat to the body or psyche, helplessness and loss of control, distress and insufficient resources. Simkin and O’Hara, (2014) also backed the idea saying non-pharmacological pain management is directed at prevention of suffering. She further concluded that unlike drug therapies, non-pharmacological pain interventions promote gain of control over pain and illness in 69% of clients with chronic pain.

The Zimbabwean literature has not shown much of the discrepancies in the use of the non-pharmacological pain control methods, generally the use of the methods is limited; knowledge on the methods can also be a factor and attitude. In a study by Kipkoririri, (2011) on the effectiveness of non-pharmacological pain management among Zimbabwean women in labor, showed that 57% percent of the women that used the techniques verbalized control of pain
while 47% verbalized no change in pain. Though there were several limitations to the study the results were significant in Zimbabwean literature. However uptake of these complementary methods of pain management is still low by both clients and health workers in Zimbabwe, (Kipkoriri, 2011)

Statement of problem

From the above gathered information, there have been little utilisation of non-pharmacological pain management modalities. The studies have revealed that nurses either lack knowledge on non-pharmacological pain management. Consequently patients have proved to be victims of either virtue. Patients still suffer from unnecessary pain in many hospitals with the resultant negative effect on physical, emotional and spiritual health and quality of life (Lui, et.al, 2010; Kankkunen et.al, 2011).

Purpose of study

The purpose of this study is to assess the knowledge levels regarding non-pharmacological pain management among nurses at Bindura Hospital

Objective of the study

1. To assess knowledge levels of registered nurses regarding non-pharmacological pain management.

Research question

The aim of the study is the answer of following question:

1. What are the knowledge levels of registered nurses regarding non-pharmacological therapies

Significance of study

Results of the study are aimed to improve the quality of patient care, provide the nursing fraternity with bases of research areas, and it will benefit clients where pharmacological remedies are contraindicated and when not readily accessible. It is also hoped to widen the scope of nursing practise. It is also hoped that non-pharmacological remedies be added to the registered nurse curriculum, more like pharmacology.
Non-pharmacological pain management, has been considered as list considered as option, such that even the nursing curriculum does not enucleate it as a subject on its own,(King, 2011). This research can assist improving inclusion of non-pharmacological therapies in nursing basic programmes as a topic or subject area to be visited extensively. The finding will expose gaps that may need further research. The findings will increase knowledge to nurses on the subject matter.

Conceptual framework

Research has been defined as a process of discovering knew knowledge, testing existing knowledge through utilisation of existing nursing theories,(Clarke et.al, 2010). These theories form the base or conceptual framework to the study. This study utilises the theory by Sister Calista Roy, (1989). The theory was further reviewed by Roy and Andrews, (1991). The theory has explicit and implicit assumptions. The explicit assumptions state that the person is a bio-psycho-social being is in constant interaction with a changing environment and to cope with a changing world, the person uses both innate and acquired mechanisms which are biological, psychological and social in origin. This is to adapt with the environment which is the stimuli and in this study pain is the stimuli.

The major concepts in this model includes adaptation which is viewed as the goal of nursing, person who is the adaptive system, environment which is the stimuli(pain), health being the outcome of adaptation and nursing which is promoting adaptation and health. According to conceptual definitions in this model, adaptation has been defined as responding positively to environmental changes. Lui, et.al, (2010), who utilised the model in his study on adaptation in children with cancer, describes the relationship between the patient and the nurse as interdependency. As the model suggests in its implicit assumptions, patient’s values and opinions are to be considered and respected.

Stated in the model is the existence of the human subsystems, the cognator and the regulator systems suggests respond to stimuli at different perception levels,(Klain, 2009). Roy’s model also state that person have adaptive mode processes which help them to conquer stimuli. Nursing process is then therefore supposed to identify the possible adaptive ways the client is displaying and assist them in the adaptation process, (Li, et.al, 2010). According to Lui, et.al, (2011), the theory offers guidelines for the nursing process with its elements being first level assessment, second level assessment, diagnosis, goal setting, intervention and evaluation.
Figure 1.1: Below is the diagrammatic presentation of Calista Roy’s Adaptation Model

Pain (stimuli), can be physical, biological, cognitive, psychological and or social in origin.

Adapted from King, (2014).

Definition of key terms

Pain: An unpleasant sensory and emotional experience associated with actual or potential tissue damage (International Association for the Study of Pain, 2010)

Non-pharmacological pain management;

Refers to management of pain without use of drugs or chemicals,(Mosby's Medical Dictionary, 2009)

Knowledge;
Refers to the framed experience, values, contextual information and expert insight that provide a framework for evaluating and incorporating new experiences and new information (Smeltzer, et.al, 2014)

Registered Nurse (RN)
This refers to a nurse who has graduated from an accredited nursing program, has passed the state examination for licensure and has been registered and licensed to practice by a state authority, (Mosby's Medical Dictionary, 2009).
Chapter 2

LITERATURE REVIEW

Introduction

Literature review is an evaluative report of information found in the literature related to the selected area of study, (Ratchet and Hedger, 2013). They further stated that it should give a theoretical base for the research and help the author determine the nature of your research. Kumar, (2011), elaborates that literature review is conducted to generate a picture of what is known about a situation and the knowledge gaps that exist in the situation. This chapter will focus on the review of literature related nurses knowledge on non-pharmacological pain management and the theoretical framework.

Knowledge on non-pharmacological pain management

According to a study by Clarke, et.al, (2010), documentation of non-pharmacological treatments for pain is minimal to non-existent, 90% of all charts audited showed no use of non-pharmacological pain methods to relieve pain documented. The respondents identified that non-pharmacological pain management techniques was one of the areas that they received the least amount of information on, a factor that may have prevented them from using those therapies. Another survey done by Salantera, et.al, (2011), showed that nurses have little knowledge on the types of non-pharmacological pain management therapies. The results showed little knowledge on the types of non-pharmacological pain therapies indicated by 27 % average score on correct listing of the types of non-pharmacological pain therapies known to the respondents. In a similar study conducted by Asadi-Noghabi, et.al, (2014), nurses in a paediatric unit showed minimal knowledge in the types of non-pharmacological pain management suitable in paediatric nursing and there was a 53% correct response to the identified techniques such as non-nutritive sucking, heat, music and imagery.

A study by Bicek, (2011), established that many non-pharmacological pain therapies are not known to nurses as evidenced by 54% of participants were not able to state more than five types of non-pharmacological pain therapies. In a study by So, et.al, (2014), indicated that nurses have however utilised one or more non-pharmacological pain therapies. In this same study the results showed that 89% of their participants identified imagery, heat and cold therapies as types of non-pharmacological pain therapies. McCracken, et.al, (2011), listed the types of non-pharmacological pain management such as meditation, progressive relaxation,
dreaming, rhythmic respiration, biofeedback, therapeutic touching, transcutaneous electrical nerve stimulation (TENS), hypnosis, musical therapy, acupressure and cold-hot treatments. Such these are non-invasive methods. Reuters (2013), described acupuncture as an invasive method to the list. However a study done by Shaw, et.al,(2010), indicated that the techniques with highest frequency included massage, music therapy, hydrotherapy, exercise and therapeutic touch.

Turan et.al, (2010), examined the three groups of non-pharmacological methods used in pain management such as peripheral therapies also known as physical agents or skin stimulation methods, cognitive-behavioural therapies and other therapies. Some of these methods require special training. Peripheral therapies have been described as skin stimulation that provides analgesia and is defined as stimulating the patient’s skin in a harmless manner to treat the pain (Yildirim, et.al, 2013). Skin stimulation attempts (physical therapies) can be classified as hot-cold treatments, exercise, positioning, movement restriction-resting, acupuncture, hydrotherapy, transcutaneous electrical nerve stimulation, massage and therapeutic touch (Yildirim, et.al, 2013). There are cognitive or behavioural strategies, which include distraction, relaxation, imagery, and breathing techniques (Polkki, et.al,2011).

A study by Al-Shaer, et.al, (2011), revealed that nurses do not have adequate knowledge on how non-pharmacological pain therapies work and most them were misclassified. As pointed out by Dalton (2011), pain relief is achieved when a remarkable analgesic effect is met. From a discussion of findings by Patirika, et.al,(2012), on nurses’ knowledge and practises on pain management, nurses cited that they lacked knowledge on how non-pharmacological pain therapies work but they recommended use of the therapies.

The cognitive behavioural strategies are thought to interfere with the neural perceptions of pain in the brain. They alter the subjective experiences of pain intensity (Titler and Rakel, 2011). According to Titler and Rakel (2011), distraction is directing attention away from pain by focusing attention and concentration on something else. There are many different kinds of distraction including music, humour and movement. These techniques require more active participation by the person experiencing pain and are more effective in relieving pain. Neimi-Murola, et.al, (2010), described a study that showed humour to be one of the most effective distraction methods to relieve pain and the effects continued for at least ten minutes after the laughter stopped. Relaxation is the second cognitive behavioural strategy.
Gordon, et.al, (2010), stated that relaxation may work to relieve pain because of the reduced muscle tension. Relaxation techniques included relaxation and imagery which involves a person imaging a pleasant or peaceful experience. Others also included music, massage and slow breathing. When a person is relaxed, their heart rate, blood pressure, and respirations decrease (Titler and Rakel, 2011). Cole and Brunk,(2013), compiled a literature review about the effectiveness of relaxation in relieving pain. They found six research articles and all of them told about the positive effects of relaxation techniques regardless of what technique were used and the patients reported having a feeling of control over their pain when using relaxation techniques.

Interestingly the results that were found in a study by Thomas and Weiss(2011), which showed that nurses in an orthopaedic department reported using non-pharmacological pain therapies once weakly to a month in management of their patients. Lewthwaite, et.al, (2011), from their study on nurses’ knowledge on non-pharmacological management, found out that 49% of respondents achieved a passing score of 80% or more and questions on non-pharmacological pain therapies were wrongly answered. In a similar study by Crawford, et.al, (2011), participants were required to state commonly used non-pharmacological therapy to patient and how it is administered. Among the frequently listed was and therapeutic touch, exercises and distraction but the application was in most cases wrong.

If used in an appropriate manner skin stimulation non-pharmacological pain management methods are effective on secondary pathologies such as inflammation, oedema, progressive tissue damage, muscle spasm and function loss which takes part in acute pain, (Yildirim, et.al, 2013). On the other hand cognitive-behavioural therapies are a part of multimodal approach in pain management. These attempts affect not only the pain level but also helps the patient to establish a management feeling of self while dealing with pain and develop management behaviours and improved self-esteem. Cognitive-behavioural therapies can generally be applied by all members of the pain team. According to Macceaet.al, (2010), these cognitive behavioural therapies have been effectively used in chronic lumbago, musculoskeletal pain, cancer pain, pains in head and neck region and phantom pain. Other non-pharmacological pain management therapies such as chiropracticits, aromatherapy, musical therapy and reflexology are also usefully in effective management of pain, (Yildirim, et.al, 2013).

In a survey study to ascertain nurse’s knowledge on effectiveness of non-pharmacological pain therapies, participants were asked to choose the most effective therapy for the given conditions
and the correct response to questions was 53% which indicated limited knowledge on the area. The findings from a study carried out by George and Robinson, (2011), also indicated that nurses could not correctly match the correct non-pharmacological pain management to the type of pain. Browne, et.al, (2011), concluded that the mean score of 61% correct response on nurses in a burns unit on knowledge on effectiveness of non-pharmacological pain therapies indicates minimal knowledge.

In a study conducted by Theodosopoulou, et.al, (2013), to investigate experienced nurses on the knowledge of non-pharmacological pain management, showed that there was knowledge gap between experienced nurses and new nurses in the profession. In this same study, 51% acknowledged transcutaneous electrical nerve stimulation as a non-pharmacological pain management therapy while the majority 96.7% stated that relaxation is a non-pharmacological pain therapy. The results also showed that 38.2% had lack of knowledge on timing of commencement of non-pharmacological pain therapies. In most cases inexperienced nurses could not tell when non-pharmacological pain therapies should be instituted, (Stevendesen and Turrun, 2014). Thomas and Weiss, (2014), suggest that non-pharmacological pain therapies should start when pain is initially diagnosed and scale up and down as necessary. This was not supported by Chou and Shekelle, (2010), who reported that 73.8% of participants stated that non-pharmacological pain therapies can replace pharmacological methods. Results from a quantitative study done in Patirika, et.al, (2010), present results that showed that of the 87% nurse participants who managed to pass 85% which was a pass mark on the appropriate use of a non-pharmacological pain therapy. The majority 67.3% also agreed that non-pharmacological pain therapies can be commenced when one has gained control of the pain. When asked who should prescribe the therapy, most respondents showed lack of knowledge as indicated by 67% of the participants indicating that it is the physician.

However the Agency for Health Care Policy and Research (AHCPR), (2010), and guidelines suggest that non-pharmacological pain management should not wait longer than initial diagnosis, however adjustments are always made. Most of the special techniques can be learned and applied by nurses, (Yıldırım, et.al, 2013). Furthermore, these therapies should be thought and applied as early as possible before the patient experiences pain (Delaune and Ladner, 2012).

Most studies done in America suggest that nurse knowledge is low pertaining non-pharmacological pain management (Fourie, 2010; Green and Hart-Johnson, 2013; Broome,
et.al, 2012). Rakel and Barr, (2010), conducted a study in Port-Said city of America, the study was to investigate the impact of an educational intervention program in pain management on nurses' self-reported use of non-pharmacological methods for preschool and school age children's pain relief. The results demonstrated very low nurses' knowledge of non-pharmacological methods for pain management before the intervention, with statistically significant improvements after the intervention. His results were in congruence with Shugarman, et.al, (2012), whose results showed that of a sample of two hundred and twenty-five paediatric nurses only 23% passed the 70% score which was a pass mark for the study to determine nurses’ knowledge on non-pharmacological pain management.

Another study done in the United States by Broome et.al (2012), found that 50% of nurses surveyed used non-pharmacological techniques like relaxation, distraction, imagery, positioning and massage often or sometimes with the paediatric population. However in his discussion, Broome noted that most nurses had problems in classifying the pain therapies. A study on Jordanian nurses by Turk and Fielderman, (2010), pain management showed that the average of correct answers was 48.25% on non-pharmacological pain management. It was found that there were no significant differences between nurses’ gender and educational level and the total knowledge score, except for exposure to previous pain education. Nurses with previous pain education got higher mean scores on the questionnaire. As stated by Turk and Fielderman, (2010), Jordanian nurses expressed a lower level of pain knowledge than that reported worldwide and proposed that continuous education and reforming undergraduate curricula to address pain management are recommended.

However the tools for evaluating this knowledge have always included non-pharmacological pain management. In a study conducted by Turk and Fielderman (2010), indicated that nurses had limited knowledge related to non-pharmacological pain management. This was suggested by the correct respondents’ score of 47% on knowledge of non-pharmacological pain management questions. Ina study to determine the use of non-pharmacological among surgical nurse in Britain, Christopher (2011), found out that lack of knowledge was the major barrier to use of these therapies. A score of 65% was the averages score mark for nurses working in medical wards in Sidney as they were administered with a question to assess their knowledge level on non-pharmacological pain management techniques.

A number of studies were done in Australia on nurses’ knowledge on pain management. Most of the studies revealed knowledge gaps on the aspect of non-pharmacological pain
management,(Helgadotti, 2014);Abusheikha,2010;He, et.al, 2011). In a study that looked at
direct on the nurses knowledge on non-pharmacological pain management, the results showed
that most nurses could identify a few techniques such as massage distraction, music, position
and meditation were popular among respondents, (Barret, 2010). Similarly, Barret, (2010),
conducted a study on the medical and surgical nurses in the city of Berloers, the purpose of the
study was to examine nurses practice of non-pharmacological pain interventions. However the
results indicated 67% knowledge gaps in the three hundred and twenty five participants.

In Turkey, Yavaet.al, (2013), carried out a study on knowledge of non-pharmacological pain
management among oncology nurses. The conclusion was that nurses do not have adequate
knowledge of non-pharmacological pain management though 89% of the participant indicated
that non pharmacological pain management is very important in the management of cancer
pain. Also in a study done by, Rutten, et.al, (2011),to determine what nurses really know about
pain management, the results suggested that non-pharmacological pain therapies are rarely
utilised documented and in most cases nurses demonstrated lack of knowledge in this area.
Another Turkish study on paediatric nurses knowledge on non-pharmacological pain
management showed that 50.5% possessed adequate knowledge, (Syrjala, 2012).

According to Demir, (2012), in a study to investigate the nurses’ attitudes on patient pain relief,
the questionnaire consisted of a section that looked at choice and barriers to non-
pharmacological pain management therapies. The results of this study showed that knowledge
deficits were the major barrier to use of these therapies. Also in a research conducted by
Carlison and Meier, ( 2011), respondents were require to state the commonly used non-
pharmacological pain relief techniques shockingly on this section of the questionnaire only
34% of the respondents stated use of two or more types of techniques used. Basak, (2010),
investigated nurses’ practices on pain management and one frequent answer was use of
alternative therapies.

A study done by Polkki, et.al, (2011), in Finland looked at nurse's attitudes and knowledge of
non-pharmacological methods in relieving children's postoperative pain. Only about 57% of
the respondents used non-pharmacological methods to relieve pain routinely, however, most
of the nurses told the children about pain medications. Ninety eight per cent of nurses used
position changes 'nearly always' or 'always' to relieve pain, and 72% used massage 'sometimes.'
Thermal regulation was used 63% of the time 'sometimes.' The nurses used emotional support,
helping with daily activities, and creating a comfortable environment routinely. However, the
cognitive behavioural and physical methods like relaxation, distraction, and massage were used less often and were less well known.

A study carried out in Nigeria Abuja on nurses knowledge on pain management on patients on palliative care indicated that 88% opted for pharmacological interventions against non-pharmacological interventions. This was regarded as knowledge deficit by the researcher who posits that non-pharmacological pain therapies are not a replacement for medications but a complement rather. In Tanzania, McBeth, et.al, (2012), made a conclusion of his study that 47% of registered nurses had minimal knowledge of non-pharmacological pain therapies. In his discussion he noted that 7.8% of the participants could define and classify non-pharmacological pain therapies. In South Africa the most recent study was done by Thomas and Weiss, (2014), who investigated the nurses’ knowledge on pain relief methods among women in labour. When asked the effectiveness of some pain relief methods, the respondents showed lack of knowledge.

Kipkoriri, (2011), on the effectiveness of non-pharmacological pain management among Zimbabwean women in labour, showed that 57% of the women that used the techniques verbalized control of pain while 47% verbalized no change in pain. In the same study the uptake of these complementary methods of pain management is still low by both clients and health workers in Zimbabwe.

Application of theoretical framework

Sister Calista Roy’s Adaption Model which forms the framework for this study has been used in many studies in the past decades. Sinha, et.al, (2012), states that the concepts of humans as defined by Roy, being a bio-psycho-social being in constant interaction with a changing environment, are vital as basis to patient care. In her description of concepts, Roy (1966) explains man as an adaptive system described as a whole comprised of parts. Also states that the person uses innate and acquired mechanisms to adapt, (McBeth, et.al, 2011).

Fig 1 Diagrammatic application of Roy’s adaptation model
Pain source can be physical, biological, cognitive, psychological and or social in nature. Adapted from King,(2014).

As highlighted by the model concepts, the environment being contextually all stimuli that impede on the basic adaption state of individuals, could be internal or external in origin. From the example above, labour pain can be affected by physical, biological, cognitive, psychological or social aspects of individual clients. In the same manner pain from a fractured lower limb may also be affected. However the environment of the stimuli to the pain determines the individual coping mode. Concentrating on the contractions as the source of pain, the woman together with the nurse identifies the coping mechanisms through cognator and regulator process. Examining pain from a fractured lower limb, the pain is surrounded by basically physical and psychological strings. Break in the continuity of bone results in a focal point of
pain. The patient utilises cognator processes to understand the bone healing process. The nurse intervenes with non-pharmacological pain management such as maintaining traction.

The role of the nurse is therefore to promote adaptation through identification of proper coping process. This is achieved by implementing appropriate non-pharmacological pain therapies and making appropriate pain assessment and determining the correct intervention. The human coping process comes into play in the context of pain stimuli. The level of pain perception and respond to therapy determined by the ability of the two coping processes the cognator and the regulator subsystems. The two human subsystems which are the cognator responsible for major coping process involving four cognitive-emotive channels, perceptual and information processing, learning, judgment and emotion. The regulator is a basic type of adaptive process that responds automatically through neural, chemical, and endocrine coping channels. This is therefore effected by implementing a non-pharmacological pain intervention which uses both innate and acquired mechanisms which are biological, psychological and social in origin.

The knowledge of a nurse in deciding on a non-pharmacological pain therapy is important, therefore in every context of pain. The interaction of the cognator and regulator process defines the relationship between the nurse and the patient in management of pain. Acknowledging that the person uses innate and acquired mechanisms to adapt helps that nurse to discuss with patient the activities of pain relief and to promote participation in non-pharmacological pain therapies such as massage therapy on the lower back to the woman in labour assist in the opening of the hypothetical gates hence reduces pain. Cultural beliefs such as confession about wrong doings or endurance of pain help the woman in labour cope with the labour pain.

Similarly the client with a fractured lower limb need to get an understanding of healing process of a fracture to aid the cognator coping system as well as non-pharmacological pain techniques like maintenance of traction that accelerates pain hence thus activating the regulator coping system

Roy describes the nursing process and suggested guidelines for the nurses to develop nursing process using the elements such as first level assessment, second level assessment, diagnosis, goal setting intervention and evaluation. The nurse is therefore supposed to incorporate the knowledge of the person as a sum of his parts and respect his autonomy to choose the pain therapy desired.

Summary
There are many non-pharmacological pain management strategies identified as helpful to patients for use with pharmacological methods to relieve pain. Least to none side effects have been documented on use of non-pharmacological pain therapies. Interestingly the uptake and use of these therapies by nurses has been of great concern over the years. According to most research findings sited above, lack of knowledge together with other barriers to implementation of these therapies have let patients suffer inadequate pain relief. According to Roy’s Adaptation model a person poses the physical, biological, psychological and social aspect. This was seconded by Ernst, Lee, and Choi (2011), who states pain management has to address all the components of a patient and these include biological, physical, psychological and social. However a vast ground remains arable for study. This descriptive study will explore and determine the knowledge of nurses on non-pharmacological pain therapies at Bindura hospital. Like many researchers have made recommendations in accordance to their research findings this research will also contribute a great deal.

Chapter 3

RESEARCH METHODOLOGY

Introduction

In this chapter, the researcher looked at the research design, setting, sampling procedure, data collection procedure, human rights issues and data analysis which comprise the methodology.
Furthermore, the research instrument used is examined as well as the data collection procedures. Reliability, validity and ethical procedures were highlighted. Finally focuses on data analysis procedures and protocols.

Research design

As defined by Kumar, (2011) research design is a procedural plan that is adopted by the researcher to answer questions validly, objectively, accurately and economically. He further explains that it is a plan, structure and strategy of investigation done so as to obtain answers to research questions or problems. Kumar, (2011), also states that quantitative study designs areas specific, well structured, have been tested for their validity and reliability, and can be explicitly defined and recognized. Polit and Beck, (2010), explain that a research design is the overall plan for obtaining answers to the questions being studied and for handling various challenges to the worth of study evidence. This study employed a descriptive study design, which is a non-experimental research design so as to obtain information about registered nurses knowledge on non-pharmacological pain management.

The setting

Bindura Provincial Hospital is a government hospital in Bindura town which is the provincial capital of Mashonaland Central Province of Zimbabwe. It is about ninety kilometres away from Harare the capital city of Zimbabwe. It serves as a secondary level health delivery system. It has a total of one hundred and twenty five registered nurses (information obtained from the human resources department Bindura provincial hospital 2015). Bindura provincial hospital has the following departments; casualty, outpatient department, male ward, female ward, intensive care unit, maternity department, operating theatre department, family and child health department, dental department, eye unit and a children’s ward. The hospital offers preventive, curative and rehabilitation clinical services for outpatients and in patients. The site was also chosen because it is the largest hospital in the area which admits patients within Bindura as well as surrounding towns thus nurses at the hospital will have had an experience in nursing medical admitted adult patients. The hospital was also chosen due to the possibilities of getting a larger sample population for the study.

Population of the study

Polit and Beck (2010), state that a population is the entire aggregation of cases in which a researcher is interested in. In this research the population of the study included the registered
general nurses at Bindura provincial hospital. According to Kumar (2010), the target population is the entire set of units for which the survey data are to be used to make inferences. In this research the study population were the registered nurses in the outpatient department, male ward, female ward, maternity department, and eye unit and family and child health department. Kumar (2011), defines a sample as a subgroup of the population which is the focus of the research enquiry. A sample is a subset of the population elements, (Polit and Beck, 2010). This research utilized a sample that was drawn from the nurses in the outpatient department, male ward, female ward, maternity department, eye unit and Family and Child Health department who were on duty at Bindura Provincial Hospital at the time of data collection.

Sampling procedure

Polit and Beck, (2010), define sampling as the process of selecting a portion of the population to represent the entire population. Kumar, (2011) supports Polit and Beck, (2010), saying that sampling is a process of selecting a few participants from a bigger group to become the basis for estimating the prevalence of information of interest. The study utilised a convenience sampling to select seventy-five participants who were available on the period of data collection.

Sampling criteria

Only registered nurses who work in the outpatient department, male ward, female ward, maternity department, eye unit and Family and Child Health department were eligible to participate in this research. Only those nurses who were on duty in the selected wards or departments, who fell within the selected sample drawn on the day of data collection and who consented to participation were eligible for participation.

Data collection procedure

The data relevant to the study were collected from a sample of seventy-five registered nurses through the use of self-administered questionnaires which were written in English. The researcher promoted the participant’s anonymity by issuing all the participants with self-administered questionnaires in the six selected wards and departments. The researcher explained to the participants how the information on the questionnaire was to be utilised in order to maintain anonymity. Verbal explanation clarifying the purpose of the study was given
to participants and an informed consent was obtained before participating. Each self-administered questionnaire had a written explanation of the study purpose so that all participants gave an informed consent to participation in the study. Soon after participants for the day have finished completing the questionnaire, the researcher collected the questionnaires in preparation for data analysis.

Data collection instruments

Kumar, (2011), states that a questionnaire is a written list of questions, the answers to which are recorded by participants, in a questionnaire, participants read the questions, interpret what is expected and then write down the answers. Polit and Beck, (2010), also define a questionnaire as a document used to gather self-report data via self-administration of questions. Self-administered questionnaires were used to gather data because of their ability to enhance data collection from a big sample in a short space of time. The questionnaire was divided into two sections. Section A focused on demographic data and section B had questions on knowledge on non-pharmacological pain therapy.

Validity and reliability of the instrument

Polit and Beck, (2010), state that validity is the quality criterion referring to the degree to which inferences made in a study are accurate and well founded, in measurement, the degree to which an instrument measures what it is intended to measure. Kumar, (2011), states that reliability is the ability of a research instrument to provide similar results when used repeatedly under similar conditions. The questionnaire as the data collection instrument was reviewed by expert lecturers from the Department of Health Sciences, Bindura University of Science Education to ensure that the questions asked were adequate to answer the study questions.

Pilot study

Defined by Polit and Beck, (2010), a pilot study is a small scale version, or trial run, done in preparation for a major study. This was backed by Kumar, (2011), who states that a pilot study is a research project that is conducted on a limited scale that allows the researcher to get a clearer idea of what they want to know and how they can best find it out without the expense and effort of a full-fledged study. The researcher administered ten questionnaires to registered
nurses at Gokwe District hospital in the Midlands province to test the viability of the instrument.

Human Rights considerations

Permission to carry out the study was obtained from the department of Health Sciences and a letter to request permission the Medical Superintended and Senior Nursing Officer of Bindura Provincial hospital has been designed. The study participants were given a written informed consent forms to sign and verbal information on the purpose of the study. The participants’ voluntary freedom to participate or withdraw from participating was clarified. All participants were treated with respect, fairness and dignity. Anonymity, confidentiality and privacy of study participants was afforded by explaining to the participants that their personal data was not going to be used to link results to them, and names were not to appear anywhere on the questionnaire so that completed questionnaires cannot be linked to the participants. The questionnaire was designed to exclude personal identification data. Participants consented to participation by signing informed consent. Self-administered questionnaires were filled in privacy and placed in an insert only box provided by the researcher. They were then collected and kept in secret and utilised only for the research purpose.

Data analysis

Polit and Beck, (2010), define data analysis as a systematic organization and synthesis of research data. Statistical analysis is necessary in the analysis of quantitative data as it helps in describing the data, exploring relationships, testing hypothesis, predicting outcomes and generally answering the research questions (Polit and Beck, 2010). The Statistical Package for Social Sciences version 20 was used for data analysis.

Chapter 4

DATA ANALYSIS, PRESENTATION AND INTERPRETATION

Introduction

This chapter focuses on presentation of data obtained through a questionnaire that was designed specifically for this project and to answer the question, what knowledge do registered general
nurses at Bindura Hospital have on non-pharmacological pain management. The purpose of this research was to assess knowledge on non-pharmacological pain therapies among registered general nurses at Bindura Provincial Hospital. Findings obtained from the field of study are presented, analyzed and interpreted. The presentation is guided by the research question and objective of the research study. Data is presented in tables, pie charts and graphs.

Table 4.1: Demographic profile
(n=75)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Category</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>18 to 27</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>28 to 37</td>
<td>47</td>
<td>62.7</td>
</tr>
<tr>
<td></td>
<td>38 to 47</td>
<td>19</td>
<td>25.3</td>
</tr>
<tr>
<td></td>
<td>48 +</td>
<td>6</td>
<td>8</td>
</tr>
<tr>
<td>Sex</td>
<td>Female</td>
<td>56</td>
<td>74.7</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>19</td>
<td>25.3</td>
</tr>
<tr>
<td>Academic qualification</td>
<td>General Nurse Diploma</td>
<td>44</td>
<td>58.7</td>
</tr>
<tr>
<td></td>
<td>BSc.Nursing Degree</td>
<td>5</td>
<td>6.6</td>
</tr>
<tr>
<td></td>
<td>Any other</td>
<td>26</td>
<td>34.7</td>
</tr>
<tr>
<td>Experience in years</td>
<td>Below 5 years</td>
<td>16</td>
<td>21.3</td>
</tr>
<tr>
<td></td>
<td>6 to 10 years</td>
<td>43</td>
<td>57.3</td>
</tr>
<tr>
<td></td>
<td>11 to 15 years</td>
<td>14</td>
<td>18.6</td>
</tr>
<tr>
<td></td>
<td>16 to 20 years</td>
<td>2</td>
<td>2.7</td>
</tr>
<tr>
<td></td>
<td>Above 21 years</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Religion</td>
<td>Christianity</td>
<td>74</td>
<td>98.7</td>
</tr>
<tr>
<td></td>
<td>Muslim</td>
<td>1</td>
<td>1.3</td>
</tr>
<tr>
<td></td>
<td>Traditionalism</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Any other</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

The table above shows the highest frequency of age being 47 (62.7%) and the age group is between 28 to 37 followed by age group 36 to 47 which has a frequency of 19 (25.3%) then over 48 years with a frequency 6 (8%) and lastly 18 to 27 age group with a frequency of 3 (4%) of the total sample population 65 (100%). Identifying participants by sex, the table indicates female frequency of 56 (74.7%) and male frequency of 19 (35.3%). Under the academic qualifications variable, the table shows general nurse diploma with a frequency of 44 (58.7%) followed by other qualifications (post-basic diploma) with 26 (34.7%) and BSc nursing degree with frequency of 5 (6.6%). Experience in years is represented with 16 (21.3%) which is a frequency for those 5 years and below, 43 (57.3%) a frequency for those within 6 to 10 years,
14 (18.6%) for those between 11 to 15 years, 2 (2.7%) for those 16 to 20 years and 0 (0%) for those above 21 years. The most frequency religion was Christianity with 74 (98.7%) followed by Muslim 1 (1.3%) living traditionalism and other religion with 0 (0%).

(n=75)

Figure 4.1 Distribution of respondents by departments in which they were currently working

Fig 4.1 above shows the distributions of participants in the various departments were they were currently working as the sample was selected. Sixty-five per cent registered nurses participated, 23(31%) were from the medical and surgical department, 24(32%) were from Maternity and family and Child Health department. 13(17%) represented the outpatient department while 10(13%) was the participation for paediatric ward and 5(7%) represent Eye Unit participants.

Knowledge on non-pharmacological pain management

Table 4.2 Knowledge on non-pharmacological pain management techniques

(n=75)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Yes</th>
<th>No</th>
<th>Do not know</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>%</td>
<td>Frequency</td>
</tr>
<tr>
<td>The following are non-pharmacological therapies</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Imagery</td>
<td>70</td>
<td>93.3</td>
<td>4</td>
</tr>
<tr>
<td>Heat and cold therapies</td>
<td>70</td>
<td>93.3</td>
<td>5</td>
</tr>
<tr>
<td>-------------------------</td>
<td>----</td>
<td>------</td>
<td>---</td>
</tr>
<tr>
<td>Transcutaneous electrical nerve stimulation</td>
<td>57</td>
<td>76</td>
<td>12</td>
</tr>
<tr>
<td>Acupuncture</td>
<td>52</td>
<td>69.3</td>
<td>14</td>
</tr>
<tr>
<td>Relaxation</td>
<td>73</td>
<td>97.3</td>
<td>0</td>
</tr>
</tbody>
</table>

**Pain therapies**

<table>
<thead>
<tr>
<th>Contain no side effects</th>
<th>42</th>
<th>56</th>
<th>20</th>
<th>26.7</th>
<th>13</th>
<th>17.3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do not replace pharmacological therapy</td>
<td>42</td>
<td>56</td>
<td>25</td>
<td>33.3</td>
<td>8</td>
<td>10.7</td>
</tr>
<tr>
<td>Can be used as palliation</td>
<td>19</td>
<td>25.3</td>
<td>35</td>
<td>46.7</td>
<td>21</td>
<td>28</td>
</tr>
<tr>
<td>Have different modes of action</td>
<td>47</td>
<td>62.6</td>
<td>8</td>
<td>10.7</td>
<td>20</td>
<td>26.7</td>
</tr>
<tr>
<td>Relieves pain by altering pain perception</td>
<td>55</td>
<td>73.3</td>
<td>8</td>
<td>10.7</td>
<td>12</td>
<td>16</td>
</tr>
</tbody>
</table>

**With relaxation techniques**

<table>
<thead>
<tr>
<th>Heart rate increases</th>
<th>32</th>
<th>42.7</th>
<th>33</th>
<th>44</th>
<th>10</th>
<th>13.3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respiration decreases</td>
<td>38</td>
<td>50.7</td>
<td>23</td>
<td>30.7</td>
<td>14</td>
<td>18.6</td>
</tr>
<tr>
<td>Blood pressure increases</td>
<td>19</td>
<td>25.3</td>
<td>45</td>
<td>60</td>
<td>11</td>
<td>14.7</td>
</tr>
<tr>
<td>Muscle spasms decreases</td>
<td>54</td>
<td>72</td>
<td>10</td>
<td>13.3</td>
<td>11</td>
<td>14.7</td>
</tr>
</tbody>
</table>

From the above table, participants responded to knowledge questions indicates that 70(93.3%) agreed to imagery as a non-pharmacological pain therapy while those who did not agreed had a frequency of 4(5.4%) and those who did not know constituted 1(1.3%) frequency. Seventy (93.3%) answered yes to heat and cold therapies while 5 (6.7%) answered no and 0 (0%) for do not know. Transcutaneous Nerve Stimulation shows a frequency of 57 (76%) for yes response, 12 (16%) for no and 6(8%) for do not know response. Acupuncture got 52(69.3%) yes frequency, 14(18.7%) no frequency and 9(12%) frequency for do not know. Relaxation got 73(97.3%) yes frequency with 0 (0%) for no and 2(2.7%) frequency for do not know response.

Responding to yes, no, and do not know to statements concerning non pharmacological therapies. The statement, they contain no side effect had 42 (56%) saying yes, 20 (26.7%) frequency saying no and 13 (17.3%) who did not know. The statement do not replace pharmacological therapy, was responded to with 42 (56%) frequency agreeing 25 (33.3%) disagreeing and 8 (10.7%). There was 19 (25.3%) frequency to yes, 35 (46.7%) to no and 21
(28%) do not know to the statement, can be used as palliation. Forty-seven (62.6%) responded yes with 8 (10.7%) responded no and 20 (26.7%) said do not know to the statement they have different mode of action. The statement relieves pain by altering pain perception showed the following frequency 55 (73.3%) to yes response, 8 (10.7%) to no response and 12 (16%) to do not know response. Responding to yes no, do not know to statements concerning non pharmacological therapies. Participants to the questions they contain no side effect with 42 (56%) frequency to yes, 20 (26.7%) frequency to no response and 13 (17.3%) to do not know.

In the same table, participants were asked to respond yes, no do not know to statements patterning relaxation techniques and the as indicated by the table. The following frequencies were obtained against each statement; heart rate increase 32 (42.7%) yes, 33 (44%) No, 10 (13.3%) Do not know. Respirations decrease 38 (50.7%) said yes, 13 (30.7%) said No, 14 (18.6%) said do not know. Blood pressure increase 19 (25.3%) said yes, 45 (60%) said No 4 (14.7%) said do not know. Muscle spasm decreases 54 (72%) answered yes, 10 (13.3%) answered no, 11 (14.7%)

(n=75)
Figure 4.2: Knowledge on type of pain where non-pharmacological pain therapies are applicable

Figure above shows the yes, no and do not know responses to whether non-pharmacological therapies can be used for the treatment of the following conditions Lumbago pain, musculoskeletal pain, cancer and phantom pain. The following frequencies where obtained accordingly Lumbago pain 33(44%) agreed 25 (33.3%) disagreed 17(22.7%) where not knowledgeable. Musculoskeletal pain 38 (50.7%) acknowledged 33(44%) and 4(3%) did not know. For cancer pain 22(29.3%) agreed whilst the highest frequency fell for not agreeable and was 47 (62.7%) only 6(8%) had no idea.

(n=75)
Figure 4.3: Knowledge on non-pharmacological techniques

The figure above indicates how participants identify non-pharmacological techniques. 67 (89.3%) identified distraction as a technique of reducing pain while 8 (11%) did not agree they were no response for lack of knowledge. 60 (80%) confirmed relaxation as a technique of reducing pain while 11 (14.7%) disagreed and 4 (5.4%) were not sure. 68 (90.7%) said breathing is another technique while 8 (10.7%) disagreed. 2 (2.6%) were uncertain. 65 (86.7%) acknowledged imagery as a pain reduction technique and 8 (10.7%) disagreed only 2 (2.6%) were not sure.

Table 4.3 Knowledge of non-pharmacological pain management
Results obtained and displayed in the above table show most participants 45 (60%) not agreeing with statement that nurses need to undergo special training on non-pharmacological management, however 28 (37.4%) agreed to the statement only 2 (2.6%) acknowledge lack of knowledge on the matter. On the other question 42(56%) participants agreed that non-pharmacological management can be used as alternative to pharmacological pain management while 33 (44%) Do not agree 0 (0%) confessed lack of knowledge. Responding to when best to start non-pharmacological management 48 (68%) were positive to start non-pharmacological therapy when patient gained control of pain, 23 (30.7%) for a negative about it only 4 (5.3%) Do not know. 51(68%) agreed to starting non-pharmacological management as soon as pain has reported while 24 (32%) disagreed 0 (0%) lacked knowledge. In another situation 33 (44%) acknowledged starting non-pharmacological management after completion of drugs however 41(54.7%) Do not agree only 1 (1.3%) had no idea. Responding to starting non-pharmacological pain management between doses of pain medication 45 (60%) agreed while 23 (30.7%) were not of the idea and 7 (9.3%) lacked knowledge. 44 (58.7%) said non

<table>
<thead>
<tr>
<th>Variable</th>
<th>Yes Frequency</th>
<th>Yes %</th>
<th>No Frequency</th>
<th>No %</th>
<th>Do not know Frequency</th>
<th>Do not know %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non pharmacological pain management require nurses to undergo special training</td>
<td>28</td>
<td>37.4</td>
<td>45</td>
<td>60</td>
<td>2</td>
<td>2.6</td>
</tr>
<tr>
<td>Non pharmacological pain management can be used as an alternative to pharmacological therapy</td>
<td>42</td>
<td>56</td>
<td>33</td>
<td>44</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>When the patient has gained control of the pain</td>
<td>48</td>
<td>64</td>
<td>23</td>
<td>30.7</td>
<td>4</td>
<td>5.3</td>
</tr>
<tr>
<td>As soon as pain is reported</td>
<td>51</td>
<td>68</td>
<td>24</td>
<td>32</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>After completion of pain medication</td>
<td>33</td>
<td>44</td>
<td>41</td>
<td>54.7</td>
<td>1</td>
<td>1.3</td>
</tr>
<tr>
<td>Between doses of pain medication</td>
<td>45</td>
<td>60</td>
<td>23</td>
<td>30.7</td>
<td>7</td>
<td>9.3</td>
</tr>
<tr>
<td>Simultaneously with pain medication</td>
<td>44</td>
<td>58.7</td>
<td>31</td>
<td>41.3</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
pharmacological pain management can be commenced simultaneously with pain medication, 31 (41.3%) disagreed and no response was recorded for lack of knowledge.

(n=75)

Figure 4.4: Knowledge of diversion techniques

The figure above shows participants knowledge of forms diversion techniques. Magazines were rated as diversion by 70 (93.3%) participants while only 5 (6.7%) disagreed. They was no score for no idea. Responding to music 65 (86.7%) acknowledged to diversion. However 8 (10.7%) were in disagreeing and 2 (2.6%) indicated lack of knowledge 30 (40%) agreed that humour form of diversion, while 24 (32%) did not agree and 21 (28%) had no idea. 57 (76.1%) accepted playing games as diversion however 16 (21.3%) disagreed. Only 2 (2.6%) were not sure. A higher frequency of 67 (89.3%) was scored for watching television/videos only 7 (9.3%) refuted the idea and 1 (1.3%) was not sure.
Table 4.4 Knowledge on non-pharmacological therapies; (n=75)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Yes</th>
<th>No</th>
<th>Do not know</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>%</td>
<td>Frequency</td>
</tr>
<tr>
<td>Non pharmacological pain therapies can generally be applied by all members of pain team</td>
<td>48</td>
<td>64</td>
<td>22</td>
</tr>
<tr>
<td>Non pharmacological pain techniques can be learnt and supplied by nurses</td>
<td>63</td>
<td>84</td>
<td>9</td>
</tr>
</tbody>
</table>

Would you recommend non pharmacological pain therapies

| In the acute phase of injury | 22 | 29.3 | 53 | 70.7 | 0 | 0 |
| In post-operative pain management | 19 | 25.3 | 54 | 70.1 | 2 | 2.6 |
| On a paediatric patient in pain | 25 | 33.3 | 50 | 66.7 | 0 | 0 |
| Neuralgic pain | 12 | 16 | 55 | 73.3 | 8 | 10.7 |
| Cancer pain | 14 | 18.7 | 59 | 78.7 | 2 | 2.6 |

The table above shows the yes, no and do not know frequency from participants patterning various questions based on who should apply non-pharmacological therapies 48 (64%) agreed all members pain team can, while 22 (93%) did not second the idea only 5 (6.7%) consented lake of knowledge. However 27 (38%) were not knowledgeable. In another aspect 63 (84%) believed that non-pharmacological therapies can be learnt and applied by nurses only 9 (12%) disagreed and 3 (4%) were completely eluded by the idea. Another variable on the table shows the pattern on how participants would recommend non-pharmacological therapies 22 (29.3%) would recommend it in acute phase of injury while 53 (70.7%) would not recommend none did not know what to do. 19 (25.3%) said they would recommend it in post-operative pain while 54 (72%) disagreed and 2 (2.6%) were not sure. 25 (33.3%) recommended it in paediatric pain while 50 (66.7%) were not agreeable. However no one responded to lack of knowledge. 12 (16%) went for non-pharmacological in neuralgic pain while 55 (73%) disagreed and 8 (10.7%)
were not certain. 14 (18.7%) would recommend non-pharmacological management for cancer pain while 59 (78.7%) would not recommend only 2 (2.6%) were not sure.

Summary

The overall analysis of results shows that the majority of the participants lack knowledge on non-pharmacological pain therapies as suggested by the mean correct score of 48.6%. However, a range of 54% suggestive of low knowledge levels was also derived. Knowledge scores were ranging from a minimum of 16% to a maximum of 97.3% indicating the extreme in outliers in knowledge variations.
Chapter 5

DISCUSSION OF RESULTS, IMPLICATIONS AND RECOMMENDATIONS.

Introduction

This chapter discusses the findings of the study; the implications with respect to nursing practice, nursing research, nursing education and nursing research are highlighted. The study further proposes recommendations for consideration, as well as states some of the limitations of this study.

Summary

This study is quantitative descriptive study, which was conducted with an aim to assess the knowledge on non-pharmacological methods of pain management among nurses at Bindura Provincial Hospital. This is because most nurses focus more on pharmacological pain management than non-pharmacological therapies which are given less attention or accord. The mean knowledge score for this study was 48.6% and was below a pass mark of 50%, and far below 80% recommended by McCaffery and Ferrell, (2011), as the minimal acceptable level of knowledge on the Nurses Knowledge Scale. A minimum knowledge score of 16% and a maximum knowledge score of 97.3% shows that indications of non-pharmacological pain management were poorly understood while nurses have adequate knowledge on types of non-pharmacological pain therapies.

Discussion of results

Knowledge on non-pharmacological therapies

A central finding in this study was that the nurses were knowledgeable about non-pharmacological approaches in pain management. This was evidenced by 93.3% majority of study participants who managed to identify imagery, heat and cold therapies as types of non-pharmacological therapies. This was comparable with So, et.al, (2014), who noted that 89% study participants identified imagery as a non-pharmacological pain therapy. Seventy-six per cent agreed that transcutaneous nerve stimulation is a non-pharmacological pain therapy; this was much higher than what was observed by Theodosopoulou, et.al, (2013), where 51% of participants acknowledged transcutaneous nerve stimulation as a non-pharmacological pain therapies. In this study results show that 69.3% of study participants acknowledged acupuncture as a non-pharmacological therapy, this was in contrast with findings from a study
by Courtenay and Carey, (2010), which showed that only 31% of the participants correctly identified acupuncture as a non-pharmacological pain therapy. An overwhelming 97.3% of participants agreed that relaxation is a non-pharmacological pain therapy however this was consistent with (Theodosopoulou, et.al, 2013). They got 96.7% of their participants agreeing that relaxation is a non-pharmacological pain therapy.

Only 44% of the participants did point out that non-pharmacological pain management can be used in the management of Lumbago while 50.7% agree for musculoskeletal pain, 29.3% agree for cancer pain and 42.7% agree for phantom pain. The results were however in comparable with findings from a study by Maccea, et.al, (2010), who concluded that generally there is lack of knowledge with the following results, 35.6% for lumbago pain, 51% for musculoskeletal pain, 33.9% for cancer pain and 40% for phantom pain.

The majority 56% showed knowledge by stating that non-pharmacological therapies do not replace pharmacological therapy whereas Bicek, (2011), found contrasting results where participants accounting to 11% acknowledged that non-pharmacological pain therapies can replace pharmacological pain therapies. Only 25.3% agreed that non pharmacological pain therapies can be used as palliation while 74.7% showed lack of knowledge on this fact. This is almost similar result to that reported by Yildirim, et.al, (2013) where only 27.4% of participants acknowledged that non-pharmacological pain therapies can be used for palliation.

In this study 62.6% reported that non pharmacological pain therapies have different modes of action. This is in contrast with what was reported by Morsy, (2013), where only 18.7% showed knowledge on this as the majority had inadequate knowledge on how non pharmacological pain therapies work. The majority 73.3% of study participants affirm that non pharmacological pain therapies relieves pain by altering pain perception a result lower than that reported by Titler and Rakel, (2011),where only 46.3% acknowledge thereby showing lack of knowledge on this aspect of non-pharmacological pain therapy.

In this study, a significant figure of 42.7% stated that relaxation techniques increases heart rate which is not supported by Titler and Rakel, (2011), who indicated that with relaxation techniques, heart rate decreases. This shows that the majority among study participants lack knowledge on this important aspect of non-pharmacological pain therapy. Concerning that relaxation techniques decrease respiration rate, 50.7% agree but a significant number accounting to 30.7% did not agree while a further 19.6% stated that they were not sure. The majority 60% for blood pressure and 72% for muscle spasm, managed to identify that they
decreases with relaxation techniques agreeing with Turk and Fielderman, (2011), who indicated that relaxation techniques decrease, blood pressure and muscle spasms. This also concur with was reported by Gordon, et.al, (2010), who indicated that relaxation techniques relieves muscle tension

In this study 89.3% identified distraction as a technique of reducing pain a figure almost similar to that reported by Yildirim, et.al, (2013), where 86.8% of their study participants agreed that distraction is a technique that reduces pain. Eighty percent confirmed relaxation as a technique of reducing pain which is consistent with that reported by Polkki, et.al, (2011), where 79.5% of participants acknowledged relaxation as a non-pharmacological pain therapy. This study results show that 90.7% identified breathing and 86.7% did so for imagery as pain reduction techniques. This is almost similar to results obtained by Lewthwaite, et.al, (2011), where participants accounting to 85.1% and 79.2% for breathing and imagery respectively, were identified as non-pharmacological pain methods. Barrett, (2010), acknowledged that nurses managed to identify distraction, relaxation and imagery as non-pharmacological pain therapy. Results obtained from this study show that only 37.4% agree that special training is required for nurses to administer non-pharmacological. This contrasts with Turan, et.al, (2010), who indicated that most non pharmacological pain therapies require special training. Fifty-six percent among study participants showed lack of knowledge by stating that non-pharmacological management can be used as an alternative to pharmacological pain management. This was comparable to results that were reported by Chou and Shekelle, (2010), who indicated that 73.8% of participants showed lack of knowledge by specifying that non pharmacological pain therapy can be used alternative to pharmacological which is not true to the fact.

In this study 68% are positive that the best to start non-pharmacological management was when patient gained control of pain whereas Thomas and Weiss, (2014), found contrasting results of only 34.2% among their study participants agreeing to this. Another 68% agreed to starting non-pharmacological management as soon as pain has reported which is consistent with Patirika, et.al, (2012), where 67.3% of participants agreed that non pharmacological techniques should be started as soon as the client gains control. A significant figure 54.7% showed knowledge by disagreeing that non pharmacological management is started after completion of drugs. Sixty percent pointed out that non-pharmacological pain management should be started between doses of pain medication, a figure higher than that reported by
Theodosopoulou, et.al, (2013) where 38.2% showed lack of knowledge. The majority 58.7% in this study said that non pharmacological pain management can be commenced simultaneously with pain medication, which shows they are fairly knowledgeable on this aspect. The result is comparable with that obtained by Theodosopoulou, et.al, (2013) who reported 76.4% being knowledgeable on this area.

On diversion techniques, magazines were rated as diversion by 93.3%, while 86.7% rated music and only 40% of participants rated humour as a diversional therapy. These results are almost similar with those reported by Neimi-Murola, et.al, (2010), where magazines were positively identified by 88.3%, while 71.1% identified music and 45% identified humour as diversional therapy techniques. The majority 76.1% among participants accepted playing games as diversion, whereas Neimi-Murola, et.al, (2010) found a lower figure of 59.3%. A higher score of 89.3% in this study was obtained on watching television/videos as a diversion therapy, a result consistent with Titler and Rakel, (2011), where 59.8% of participants agree to music as a diversion therapy.

Concerning who should apply non-pharmacological therapies 64% agreed that all members pain team can. This is in agreement with what was reported by Yildirim, et.al, (2013), where 67% who acknowledged that non-pharmacological pain therapies can be applied by all members of the pain team. In another aspect 84% believed that non-pharmacological therapies can be learnt and applied by nurses, a similar finding to that by Yildirim, et.al., (2013) found among the study participants. On recommending non-pharmacological therapies only 29.3% accepted that they would recommend it in acute phase of injury while the majority 70.7% would not recommend it acute phase. This is however in contrast with what was reported by Patirika, et.al, (2012), where only 7% knew the timing of non-pharmacological pain therapy.

Conclusion

The following conclusion was drawn from the results of the study topic: to assess the knowledge on non-pharmacological methods of pain management among registered general nurses at Bindura Hospital. The study showed that the nurses have poor knowledge regarding non-pharmacological pain management as indicated by mean knowledge score of 48.6% against a pass mark of 50% and recommended knowledge score of 80% by McCaffery and Ferrell (2011).

Limitations
This study was limited only to one institution, in one province and only to nurses on duty at Bindura Provincial hospital at the time of study which may have introduced bias as it cannot be generalised to other sample populations of nurses who were not on duty. This was because of a small sample size of 75 registered nurses who were just 67% of the total population of the nurses at the institution. Despite the high response from most of the wards/departments, nothing is known about those who decided not to participate. Nurses with minimal knowledge or interest in non-pharmacological pain management may have chosen not to partake in this research this limits the generalizability of the findings. Some nurses could have failed to participate due to the work demands within their departments as the research was done during working hours on the nurses on duty, and the researcher did not aim to disrupt the nursing activities. The time to carry out the research was also limited as the researcher was also engaged in educational activities at Bindura University of Science Education. The financial constraints made it impossible for the researcher to generate a lot of questionnaires so as to have a sample size which could have been at least about 80% of the total population so as to easily infer the results.

Implications for nursing

The most important role of the nurse is to alleviate the suffering of the patient and preventing any complications that may arise due to the condition or hospitalization. Good assessment of pain leads to effective management of pain. Several implications can be drawn from the present study for nursing practice. Nurses have the responsibility of ensuring that all patients’ pain is effectively managed. All practicing nurses should take an initiative in continued education by reading and discussing current researches on non-pharmacological pain management so as to improve their knowledge as well as their practice in this issue.

The nursing curriculum should emphasize on pain management as one of the vital signs, just as there is emphasis on monitoring of temperature, respirations, blood pressure and pulse. More emphasis should be put on educating nursing students on how to effectively offer the various non-pharmacological pain relieving interventions, so as to collaborate these with pharmacologic interventions. Every student should be encouraged to provide health education to patients regarding cause of pain, possible aggravating factors and how to avoid them; effective pain assessment; both pharmacological and non-pharmacological pain relieving options that are available including the desired and unwanted effects of each method.
Nursing administrators should take an initiative in creating policies which ensure that pain is adequately managed, since freedom from pain is a right for all patients. Nursing administrators should also provide in-service education on non-pharmacological pain management to all nurses at various levels to ensure that all nurses are aware of the current trends in pain management. Quality assurance survey can be carried out using patient interviews on non-pharmacological pain management so as to assess the effectiveness of care provided by nurses towards management of pain. Policies, procedures and guidelines relating to pain management to ensure they are in line with current international best practice standards.

Since pain is a global problem which can be adequately managed, there is need to allocate more resources towards research on pain management. There is need for more research relating to the misconceptions that nurses have regarding the application of non-pharmacological pain therapies. Research on use of non-pharmacologic pain relieving therapies in the clinical setting is also required.

**Recommendations**

From the results of the study, the researcher recommends that nurses should engage in continued education, by reading recent research on pain management and putting the evidence based practice learnt into practical use so as to improve their pain management nursing care.

The nursing education curriculum should incorporate also put more emphasis on non-pharmacological pain therapies as much to equate pharmacological therapy.

The researcher also recommends that the nursing administration should take an initiative in ensuring that all practicing nurses practice the highest possible pain management nursing care, and that opportunities should be made available for nurses to be educated in effective pain management utilising non-pharmacological therapies.

A research using a bigger sample is recommended for Zimbabwe to enhance the generalizability of the findings, and to improve the nursing knowledge base.

**References**


International Association for the study of pain (IASP). (2010). Curriculum outline on pain for physical therapy. 
http://www.iasppain.org/content/NavigationMenu/GeneralResourcesLinks/curriculum. Accessed 30/03/2015


Appendix 1:
Research Instrument (Questionnaire)

I am Chiratidzo Munemo, a student at Bindura University of Science Education. I am carrying out a study on Nurses Knowledge on non-pharmacological pain management as partial fulfilment of the Honours degree in Nursing Education. I hereby ask for your participation in the completion of this questionnaire. The information you shall provide shall be held as private and confidential, to be used strictly for academic purposes only.

Research Topic: To assess the knowledge on non-pharmacological pain management among registered general nurses.

Section A: Demographic Data *(please tick the most appropriate answer)*

1. Age
18 to 27
28 to 37
38 to 47
48 and above

2. Sex
Female
Male

3. Highest academic qualification
Registered General Nurse Diploma
Bachelor of Science in Nursing Degree
Any other (specify) .................................................................

4. Years in nursing
less than 5
11 to 15
6 to 10
16 to 20
More than 21

5. Department worked
Pediatric ward
Maternity ward
Medical/surgical ward
Outpatients
Eye unit

6. Religion
Christianity
Muslim
Traditionalism
Other (state) ...................................................................................

Section B: Knowledge of non-pharmacological pain management

1. Which of the following are non-pharmacological pain management therapies?

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
<th>Do not know</th>
</tr>
</thead>
<tbody>
<tr>
<td>a   Imagery</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b   Heat and cold therapies</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c   Transcutaneous electrical nerve stimulation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d   Acupuncture</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>e   Relaxation</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2. Which statement is true concerning non-pharmacological pain therapies
<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
<th>Do not know</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. They contain no side effects</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. Do not replace pharmacological therapy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. Can be used as palliation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. They have different modes of action</td>
<td></td>
<td></td>
</tr>
<tr>
<td>e. Relieves pain by altering pain perception.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3. With relaxation techniques:

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
<th>Do not know</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Heart rate increases</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. Respirations decreases</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. Blood pressure increases</td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. Muscle spasms decreases</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4. The following conditions can be managed using non pharmacological therapies:

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
<th>Do not know</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Chronic lumbago pain</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. Musculoskeletal pain</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. Cancer pain</td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. Phantom pain</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

5. The following techniques are used to reduce pain:

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
<th>Do not know</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Distraction</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. Relaxation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. Breathing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. Imagery</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

6. Indicate true, false or do not know to the following statements:

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
<th>Do not know</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Non pharmacological pain management require nurses to undergo special training</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. Non pharmacological pain management can be used as an alternative to pharmacological therapy.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

7. The following examples are used as diversion of pain therapy:

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
<th>Do not know</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Books/magazines</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. Listening to music</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. Humour</td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. Playing games</td>
<td></td>
<td></td>
</tr>
<tr>
<td>e. Watching television/videos</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

8. It is appropriate to start non pharmacological pain therapies:

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
<th>Do not know</th>
</tr>
</thead>
</table>
9. Answer yes , no do not know ;

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
<th>Do not know</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>b</td>
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<td>c</td>
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<td>d</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>e</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

9. When the patient has gained control of the pain
   As soon as pain is reported
   After completion of pain medication
   Between doses of pain medication
   Simultaneously with pain medication

10. Would you recommend non pharmacological pain therapies

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
<th>Do not know</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>b</td>
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<td>e</td>
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</tr>
</tbody>
</table>

10. In the acute phase of injury
    In post-operative pain management
    On a paediatric patient in pain
    Neuralgic pain
    Cancer pain

Thank you for your valid participation.

Appendix 2:

Informed Consent form

Ref: Knowledge of non-pharmacological pain management among Registered General Nurses at Bindura Hospital.

I, Chiratidzo Munemo doing BSc Nursing Education, I am doing a study on the above mentioned topic.

I am kindly requesting you to participate in this study. The information obtained from this study will be handled in confidentiality and will be utilised for study purposes only. No names will be used for confidentiality purposes.

Participation in the study may help you gain knowledge in non-pharmacological pain management. You will also contribute in the future generation of nursing knowledge on non-pharmacological pain management. However you are free to withdraw from the study any time.
For any queries related to the study, you can contact me during week days through Bindura University of Science Education, Department of Health Science, P.O Box 1020 Bindura. Landline 02717581-5

I have read and understood the consent form and I voluntarily consent to participate in the study.

Respondent’s signature  
Date…………./………/…………………..

Interviewer’s signature  
Date…………./………/…………………..

Appendix 3:  
Letter requesting permission to carry out Research  

Gokwe District Hospital  
Box 55  
Gokwe  

16 May 2015  

The Provincial Medical Director  
Mash Central Province  
Bindura
RE: REQUEST FOR PERMISSION TO CARRY OUT A STUDY TO ASSESS OF NON PHARMACOLOGICAL PAIN MANAGEMENT AMONG REGISTERED GENERAL NURSES AT Bindura Provincial Hospital.

I am a third year student at Bindura University of Science Education, doing Bachelor of Science Degree in Nursing Education (Honours). I hereby request for permission to carry out a study on the above mentioned topic.

The information collected from the hospital will be strictly for academic purposes.

Thank you.

........................................

Munemo Chiratidzo (B1232596)

Bindura University of Science Education

Appendix 4

Permission from Provincial Medical Director Mashonaland Central Province
Letter requesting permission to carry out the research
Gokwe District Hospital
Box 55
Gokwe

16 May 2015

The Provincial Medical Director
Masvingo
Bindura

RE: REQUEST FOR PERMISSION TO CARRY OUT A STUDY TO ASSESS
NON-PHARMACOLOGICAL PAIN MANAGEMENT AMONG REGISTERED
GENERAL NURSES AT BINDURA PROVINCIAL HOSPITAL.

I am a third-year student at Bindura University of Science Education, doing Bachelor of
Science Degree in Nursing Education (Honours). I hereby request for permission to carry out
a study on the above-mentioned topic.
The information collected from the hospital will be strictly for academic purposes.
Thank you.

Munukutwa Chimadevo (B1272596)

Permission granted.

Appendix 5
Approval letter from Medical Superintendent—Bindura Provincial Hospital
13 May 2015

The Medical Superintendent
Bindura Provincial Hospital
P Bag 940
Bindura

RE: REQUEST FOR PERMISSION TO CARRY OUT A STUDY TO ASSESS KNOWLEDGE OF NONPHARMACOLOGICAL PAIN MANAGEMENT AMONG REGISTERED GENERAL NURSES AT BINDURA PROVINCIAL HOSPITAL.

I am a third year student at Bindura University of Science Education, doing Bachelor of Science Degree in Nursing Education (Honours). I hereby request for permission to carry out a study on the above mentioned topic.

The information collected from the hospital will be strictly used for academic purposes.

Thank you.

-----------------------------------
Chiratidzo Munemo (B1232596)
20 April, 2015

Bindura Provincial Hospital
P. Bag 940
BINDURA

Dear Sir/Madam,

RE: PERMISSION TO CARRYOUT RESEARCH: MUNEMO CHIRATIDZO BI232596

This is to confirm that, MS. MUNEMO CHIRATIDZO, Registration no. BI232596, is a Part 3 Bachelor of Science (Hons) Nursing Education Student at Bindura University of Science Education. She is required to carryout research as a partial fulfilment of Bachelor of Science (Hons) Nursing Education programme.

Her Research topic is as follows: To assess knowledge of non-pharmacological methods of pain management among Registered General Nurses at Bindura Provincial Hospital.

Your assistance in this regard will be greatly appreciated.

Yours faithfully,

M.E. MWANZA
Chairperson: Department of Health Science