Incidence of Post-Operative Pain and Patient Satisfaction with its Management in University of Ilorin Teaching Hospital

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Abstract

Pain is the most common complaint of patients who have undergone surgery. Over the years, the research evidence on effective therapiesfor post-operative pain management have increased greatly. Studies have assessed patient satisfaction with their pain management in Nigeria and other countries. However, these studies focused on pharmacological interventions; while, excluding a major component of pain management, i.e. non-pharmacological pain interventions. This study seeks to determine the incidence of post-operative pain, patient satisfaction with itsmanagement and the type of interventions used (whether pharmacological, non-pharmacological or both)in a tertiary health institution in Nigeria.

A descriptive cross-sectional study was conducted at the University of Ilorin Teaching Hospital, Ilorin, Kwara State;123 surgical patients participated in this study. Majorityof the participants (70.7%, n=87/123) were in pain and 90.6% (n=111/123) were on pharmacological interventions. Only 18.7% (n=23/123) used both pharmacological and non-pharmacological interventions for their pain management. Majority of the participants (82.8%) indicated that they were satisfied with their post-operative pain management. There is still a need for more objective methods of assessing effectiveness of post-operative pain management. Holistic post-operative pain management cannot be achieved without using non-pharmacological interventions for pain. More so, these interventions are relatively cheap and readily available. This low usage implies that there is a need to educate nurses and other health professionals on the various types of non-pharmacological interventions.

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Introduction

Pain is the most common concern of adults who have undergone surgery[1,2]. Despite the wealth of research and availability of effective pain management strategies, many patients still experience unrelieved moderate to severe post-operative pain[3,4]. Though it has been documented that many post-operative patients receive some form of analgesic interventions, it has been estimated that 84% of these patients still do not attain optimal pain relief[1,2]. Severe unrelieved post-operative pain has been identified as a common reason for longer period of hospitalization and increased healthcare expenses[5,6]. Between 10% and 50% of patients develop chronic pain after various common operations[7].This is a crucial problem because pain management is a vital aspect of post-operative care. Effective pain management will promote recovery and enhance the patient's ability to perform post-operative activities such as coughing, walking, range-of-motion exercises and deep breathing. These activities are important in the prevention of post-operative complications such as pulmonary embolism, pneumonia and atelectasis[8].

Also, Vadivelu et al.[9] stated that effective post-operative pain control is necessary to prevent poor health outcomes such as hypertension, decrease in alveoli ventilation, myocardial ischemia and poor wound healing. Severe acute pain can lead to release of mediators and neural sensitization and both peripherally and centrally. Therefore, it is important to manage post-operative pain effectively to avert the afore-mentioned outcomes and promote patient satisfaction with healthcare services[10].

Patient satisfaction is the evaluation of healthcare services from the user's perspective.[11] In a society, like Nigeria, where orthodox medicine is in constant competition with traditional medicine, spiritual healers and anti-orthodox health beliefs, it is imperative that patients are satisfied with healthcare services in order to promote utilization and reduce morbidity and mortality rates. Over the years, patient satisfaction has become an important indicator to measure the quality of care in healthcare facilities. The data from patient satisfaction surveys helps in

identifying gaps in health care services which serves as a basis for quality improvement. Hence, numerous studies have evaluated the patient satisfaction with post-operative pain management.A study in Ethopia, reported that 50% of 272 patients were satisfied with their post-operative pain relief[12]. Another study by Ismail et al[13]revealed that 91.6% of 263 surgical patients surveyed expressed satisfaction with their post-operative pain management.

However, several research studies[2,14] have documented many barriers to optimal post-operative pain assessment and management. Examples include: poor nurse-patient ratio, heavy workload, paucity of nurses' knowledge on pain assessment and management, inadequate prescription of analgesic, misconceptions about post-operative pain, time, institutional and financial constraints. A study carried out in South-West Nigeria demonstrated that less than 1% of the 232 health workers knew about the use of topical anaesthetics for procedural pain relief; and none of them had applied it before.[15]

In low-income countries like Nigeria, postoperative pain management can be particularly challenging for numerous reasons. For instance: the unwillingness of the patients to express their pain due to their expectation of pain after surgery; and the poor nurse-to-patient ratio limits the pain assessment and adequate pain management.[16] A study conducted at the University College Hospital, Ibadan revealed that moderate to severe pain was reported in 68.7% of the 148 surgical patients at 24 hours; and 51.7% of the patients by 48 hours. Of these patients, 63.9% reported high levels of satisfaction with their pain relief.[17] In a study was conducted at Ahmadu Bello University Teaching Hospital, North-West Nigeria; it recorded a high incidence of pain but 78.2% of the patients indicated their post-operative management was satisfactory[18].

These studies[17,18] focussed only on the pharmacological aspects of post-operative pain management. However, current clinical guidelines have indicated that, to achieve optimal pain relief, post-operative pain should be managed by both pharmacological and non-pharmacological interventions[19,20]. Hence, this study seeks to determine the incidence of post-operative pain, patient satisfaction with its management and the type of interventions used (whether pharmacological, non-pharmacological or both) used at the University of Ilorin Teaching Hospital (UITH).

Methods and materials

A descriptive cross-sectional method was adopted. The study population of interest were any patient (child or adult) who has undergone any type of surgery and was on admission in any surgical ward during the study period. He/she should be in his/her 1st – 3rd post-operative day. The exclusion criterion was patients who are unconscious or semi-conscious. The hospital has six (6) surgical wards; namely: Male Surgical Ward 1 and 2, Female Surgical Ward, Post-Natal Surgical Ward, Obstetric and Gynaecological Emergency Ward, and Paediatric Surgical Ward. Study participants were selected using purposive sampling technique.

Data was collected using structured, self-administered questionnaires. The questionnaire is divided into three sections. The first section collated the socio-demographic information of the participants. The second section assessed the incidence of pain and the types of pain management interventions used. The third section determined the level of the patients' satisfaction with their post-operative pain management. To determine the face and content validity of the questionnaire, a team of nursing researchers checked the instrument for grammatical and typographical errors, irrelevant statements and the proper arrangement of items. The reliability of the questionnaire was established by conducting a pilot study in the surgical wards at General Hospital, Ilorin, Kwara State. Two questions were removed to get a Cronbach alpha's correlation coefficient of 0.701 which is within acceptable limits. The pain scale was also corrected from 1-10 to 0-10.

Data were collected in six surgical wards at UITH. The patients who met the inclusion criterion were identified with the help of the nurse-in-charge of each ward. The prospective patients were approached and the aim of study was explained to each of them. They were given the option to participate or decline. Each patient who agreed to participate was given a questionnaire. Upon patient's request, the questionnaire was translated to Yoruba Language. The questionnaires were distributed and collected by one of the authors from 9th – 22nd July, 2018. Depending on the patient's wishes, the researcher waited to collect the questionnaire or return on a later date for the collection. The names and contact information of the participants were not requested to ensure confidentiality. The statistical analysis was conducted using statistical product for service solutions (SPSS), 21.0. Descriptive statistics (such as: frequency count and percentage) were used to summarise demographic data. Inferential statistics (i.e.: Chi-square) was used to test the relationship between various variables.

Ethical approval was obtained from the University of Ilorin Teaching Hospital before conducting the study. Prior to administering the questionnaire, an informed consent is obtained. The participants were assured that all information supplied will be confidential, and anonymity will be ensured. The questionnaires were administered under free will without compulsion or bribery. The respondents were informed they could withdraw at any point and they

were all treated equally.

Results

Socio-demographic data

Of the 130 questionnaires distributed, 123 were retrieved from the surveyed participants. The response rate was 94.6%. The mean age of the participants was 31.04 with 51 out of 123 participants between 16 and 30 years old. Male to female ratio was 1:1 and majority of the participants (56.9%, n=70/123) were Muslims. Most of the participants were married (56.1, n=69/123); and 26% (32) had no basic education. Caesarean section is the highest recorded surgery (19.5%, n=24/123); while 10 participants (8.1%) had other types of abdominal surgery and 6 participants (4.9%) had hip replacement surgery. See Table 1 for the socio-demographic data and Table 2 for the list of surgery for all participants.

Pain incidence

Majority of the participants (70.7%, n=87/123) admitted that they were in pain; this was from the 1st post-operative day to the 3rd post-operative day. Of the 123 participants, 65 (52.8%) indicated that the pain was mainly due to the surgery they had undergone. See Figures 1 and 2.

Pharmacological versus non-pharmacological pain interventions

Majority of the participants (90.2%, n=111/123) stated that they were using pharmacological interventions for their post-operative pain management. Most of the participants (87.0%, n=107/123) indicated that the drugs were effective for their pain relief. Only 18.7% (n=23/123) used both pharmacological and non-pharmacological interventions for their pain management. Majority (70.7%, n=87/123) agreed that they preferred to use drugs alone for their post-operative pain management. Only 10 participants (8.1%) preferred non-pharmacological therapy alone. Less than half of the participants (47.1%, n=58/123) indicated that they preferred the use of both pharmacological and non-pharmacological interventions. Figure 3 shows a comparison of pharmacological and non-pharmacological interventions based on usage,

Table 1: The socio-demographic data of the participants

Variables		*Frequency (%)*
Age(years)	1 - 15	24 (19.5)
	16 - 30	51 (41.5)
	31 - 45	22(17.9)
	46 - 60	14(11.4)
	61 - 75	8(6.5)
	76 - 90	4(3.3)
Gender	Male	61(49.6)
	Female	62(50.4)
Religion	Islam	70(56.9)
	Christianity	53(43)
	Traditional	0(0.0)
	Others	0(0.0)
Marital status	Single	52(42.3)
	Married	69(56.1)
	Divorced	0(0.0)
	Widow	
Tribe	Yoruba	105(85.4)
	Hausa	8(6.5)
	Igbo	0(0.0)
	Others	10(8.1)
Level of	SSCE	33(26.8)

Table 2: The types of surgeries

Surgery	Frequency (%)
Abdominal surgeries	
• Caesarean section	24(19.5)
• Appendicectomy	8(6.5)
• Colostomy	2(1.6)
• Other abdomina surgeries	10(8.1)
Orthopaedic surgeries	
• Open Reduction and Internal Fixation	20(16.3)
• Hip replacement surgery	6(4.9)
• Knee surgery	4(3.3)
• Leg surgery	4(3.3)
• Jaw surgery	2(1.6)
• Arthroplasty	2(1.6)
• Other Orthopaedic surgeries	4(3.3)
Neurosurgery	
• Spinal surgery	3(2.4)
• Brain surgery	2(1.6)
Reproductive surgery	
• Penis surgery	2(1.6)
• Prostatectomy	2(1.6)
• Bilateral epididymectomy	2(1.6)
• Inguinal hernia correction	2(1.6)
Plastic surgery	4(3.3)
Ophthalmic surgery	4(3.3)

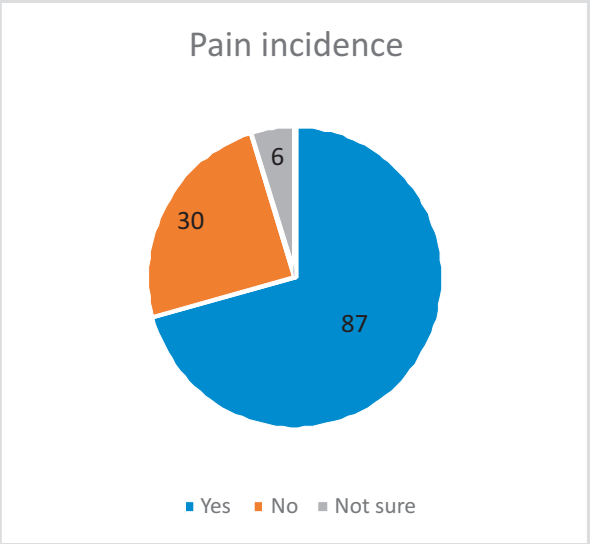


Figure 1: Pain incidence

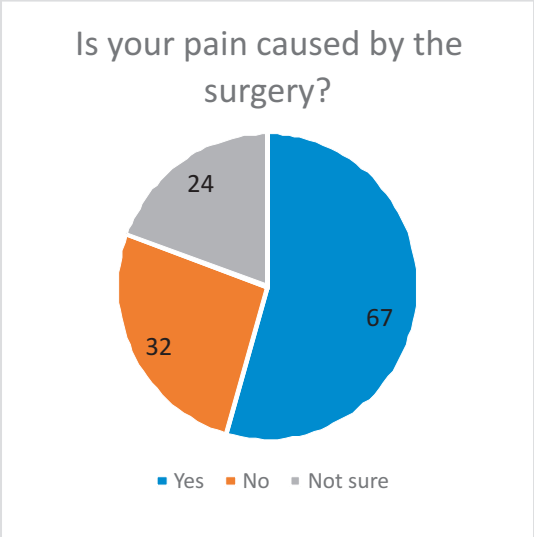


Figure 2: Cause of pain

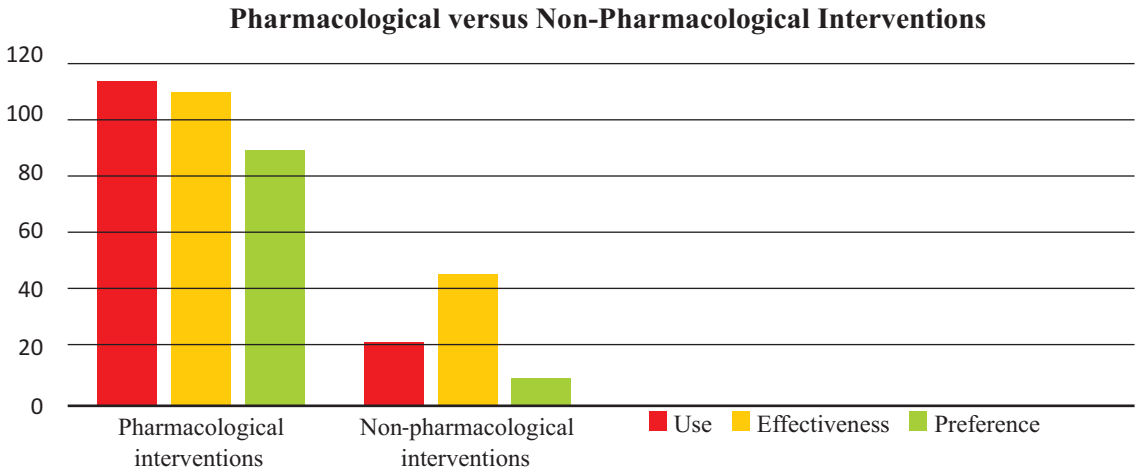


Figure 3: The use, effectiveness and preference for pharmacological and non-pharmacological interventions of post-operative pain.

effectiveness and preference.

Patient satisfaction with Post-operative Pain Management

Majority of the participants (n=101/123, 82.8%) indicated that they were satisfied with their post-operative pain management. Using Numerical Rating Scale (NRS), participants rated their post-operative pain. The mean pain score before pain intervention was 6.15; and after administration of pain intervention, it fell to 5. The participants were either in their 1st, 2nd or 3rd post-operative day. Using Chi-square, there was a significant association between the level of pain and patient satisfaction (p=0.001).Also, there was a significant association between patient's type of surgery and the effectiveness of pain management (p=0.001).

Discussion

This study seeks to determine the post-operative pain incidence, level of patient satisfaction with the post-operative management and the pain interventions used in a tertiary health institution in Nigeria. Majority admitted that they were in pain, though only 52% attributed it to their surgery. High pain incidence has also been recorded in other studies in Nigeria. Faponle et al.[17] reported that moderate to severe pain was reported in 68.7% of the 148 patients at 24 hours; and 51.7% of patients by 48 hours. Ogboli-Nwasor et al.[18] revealed that 34.5% had moderate pain and 65.2% had mild pain. In other countries such as the USA, Gan et al.[1] reported a pain incidence of 86%. These studies and this current one indicate that pain is prevalent among surgical patients. Despite this high pain incidence, 82.8% reported they were satisfied with their post-operative pain management. Similarly, other studies have reported high level of satisfaction despite high incidence of pain[1,17,18]. Also, the results of this study show that there is an association between the pain intensity and patient satisfaction. This paradox may be due to the slight reduction in the pain intensity after the

administration of analgesics. Gan et al[1] also suggested that the paradox may be arise because patients expect to experience pain post-operatively hence their level of satisfaction is not dependent on the pain, rather on factors such as general nursing and medical care and sanitation of the hospital facility.

Additionally, patient satisfaction may not be a sensitive method to assess the effectiveness of post-operative pain interventions because patients can indicate a high level of satisfaction despite undergoing mild-moderate pain[1]. Also, patients may view the assessment of their satisfaction as an evaluation of their nurse's/doctor's performance. Hence, they may be unwilling to express their true opinions about their level of satisfaction due to fear of facing negative repercussion from the healthcare providers[18]. Also, in the Yoruba culture, the ability to withstand pain is seen as a sign of strength hence, pain expression is low among this ethnic group. The largest ethnicity in the study area is Yoruba; hence this may contribute to the reason why most participants were satisfied. More so, in some cases, it has been observed that healthcare professionals appreciate patients with a low pain expression because they require less attention and care. Whereas, a patient who is very expressive about his/her pain may be scolded for their inability to withstand some level of pain.

It is worth mentioning that, despite the aforementioned factors, these findings may indicate the effectiveness of the post-operative interventions because there is a correlation between patient satisfaction and post-operative pain scores. It may be difficult to determine, using quantitative methods, that the only influencing factor for patient satisfaction is the effectiveness of post-operative management. Hence, it is crucial that more objective methods are developed to assess the effectiveness of post-operative pain management. Also, using qualitative methods may provide in-depth understanding of patient satisfaction with their post-operative pain management.

The findings from this study indicate that, from the patients' perspective, non-pharmacological pain interventions are not often used to manage post-operative pain. Hence, it is not surprising that majority opted for pharmacological interventions over non-pharmacological interventions such as massage and music. Only18.7% agreed that non-pharmacological methods are used for their pain management. This is contrary to the report by Gan et al. (2013), where it was stated the use of non-pharmacological drugs had increased from 46% to 60%. Probably, Gan et al. (2013) were stating the situation in the US. Several studies have proven the effectiveness of non-pharmacological interventions for post-operative pain such as music[21-25]. Non-pharmacological interventions have been shown to be effective, are cheap and have minimal risks to patients. It would be particularly useful if the patient is allowed to choose the type of non-pharmacological intervention, he/she wants. This will promote pleasure and facilitate the effectiveness of the non-pharmacological interventions. It is imperative that these interventions are utilized in Nigeria and other low-resource health facilities. Nurses and other health professionals should adequately explain and provide non-pharmacology interventions to the patients. Also, nurses and other healthcare professionals should be educated on the use of different non-pharmacological interventions for post-operative pain management. Despite its strengths, this study has the following limitation. The study was conducted in only one tertiary hospital. Hence, interpretation of this research should be used with caution in other hospital contexts.

Conclusion and recommendations

Patients are largely satisfied with their post-operative pain management. However, there is still a need for more objective methods of assessing effectiveness of post-operative pain management. Pharmacological interventions are the majorly used for pain management. There is a need for nurses and doctors to include non-pharmacological pain interventions in the post-operative pain management plan for patients.

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