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Nurses' assessment and management of pain among surgical patients in secondary health facility in Calabar Metropolis, Cross River State, Nigeria

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ABSTRACT

Pain is a universal experience, and it is the most frequent reason for people seeking health care. The study focused on the assessment and management of pain among surgical patients by nurses in Secondary Health Facility in Calabar Metropolis, Nigeria. Three research objectives and one hypothesis were formulated to guide the study. The study adopted a descriptive design and 68 nurses caring for patients in surgical wards were enrolled for the study. Data were obtained through structured questionnaire (pain assessment and management schedule) reports (nurses-end-of-shift) cards and patients case note. Descriptive statistics was used to analyze the data and Pearson product moment correlation was used to test the hypothesis. The results obtained on methods of pain assessment recorded thus: information about patient 95.8%, pain history 89.7%, patient self report of pain 72%, observation of behaviour 78.9% and assessment of pain site and location 73.5%. The results on pain management revealed use of cold and heat compress 92.6%, diversional therapy 92.6%, health education 92.6%, use of opioids 77.9% and injection paracetamol 95.8%. Further, the result showed a significant relationship between knowledge of pain assessment and management, $r\text{-cal} = 0.43$, $r\text{-crit} = .02$, $df\ 66$ $P < 0.05$. Records of pain assessment and management were deficient in the wards and no pain management was identified. Based on this result, it was recommended that the hospital should set up a pain control team and organize workshop programmes to equip nurses with knowledge and skills in pain assessment, management and documentation.

Keywords: Nurses, pain assessment and pain management

INTRODUCTION

Because perception and tolerance of pain vary widely from individual to individual, pain is difficult to define and describe. Essentially, pain is the way the brain interprets information about a particular sensation that the body is experiencing. Information (or "signals") about this painful sensation are sent via nerve pathways to the brain. The way in which the brain interprets these signals as "pain" can be affected by many external factors, some of which can be controlled by special techniques. Acute pain is of short duration, usually the result of an injury, surgery or illness. This type of pain includes pain caused by acute injuries, surgery pain and trauma pain, chronic pain is an ongoing condition such as back and neck pain, headache, complex regional pain syndrome Type 1 (reflex sympathetic dystrophy), neuropathic pain (nerve injury pain), musculoskeletal pain and pain related to illness⁽¹⁾. Pain is a growing problem for doctors, nurses and patients themselves because of its adverse effects on the quality of life⁽²⁾, sleep, appetite, mood, sex drive, recovery and adaptations⁽³⁾. When inadequately treated, pain leads to loss of function, increased time to heal and loss of work⁽⁴⁾. Pain management is therefore an important aspect of client care

but often, clients do not get adequate relief for their pain, this is because pain is basically subjective and therefore difficult to understand, assessed and match appropriate management strategy to the degree and intensity of pain⁽⁵⁾. Pain related information should be obtained from patients even though some patients are rather unable or unwilling to report pain. Such information should be properly documented to guide the prescription of treatment regime. Sometimes, such records are not properly kept⁽⁶⁾. According to⁽⁷⁾, in addition to assessing and documenting pain locations, intensity, quality and pattern, the psychosocial effects of pain should also be assessed in order to ensure a comprehensive management of patients' pain. Under treated pain may increase morbidity and mortality, while persistent and severe pain may change the nervous system in a way that intensifies spread and prolongs the pain, thus making the development of incurable chronic pain syndrome.

Effective pain management is an important aspect of nursing care to promote healing, prevent complication, reduce suffering and prevent the development of incurable pain state⁽⁸⁾. Pain assessment knowledge is a priority for choosing pain relief measures appropriate for the client. This further highlights the importance of nursing competence in the assessment and management of surgical pain⁽⁹⁾.

The feasibility of performing and recording pain assessment has been demonstrated in a Dutch study of pain monitoring programme for practising nurses. The study was conducted in five hospitals and the result showed that both nurses and physician had good knowledge towards daily pain assessment. The majority of nurses (83.6%) felt that daily pain assessment fitted in with their work routine and 78.1% like the idea of recording the pain scores on vital signs chart⁽¹⁰⁾.

Accurate pain assessment is essential for effective pain management. The highly subjective nature of pain means that pain assessment is one of the most common and yet difficult activities a nurse perform⁽¹¹⁾.

⁽⁵⁾, Conducted a study on assessment and management of pain in hospitalized patients in Calabar, of the fifty nurses interviewed, 84% assessed pain before managing it, while 16% did not. Of those who assessed pain, 100% assessed location, duration, and pattern of pain and aggravating/alleviating factors, 54% assessed pain quality, 46% assessed effect of pain, 40% assessed associated symptoms and only 18% assessed intensity of pain. The techniques used for pain assessment were observation of pain-related behaviours and vital signs. No nurses used any graphic or numerical tool to assess pain quality or intensity, the reasons being unavailability of such tools in hospitals.

According to⁽¹²⁾, patient's self report of pain is one of the assessment methods used by nurses to assess pain. The most common self report system in use is the pain intensity scale. The patient is asked to identify where the pain falls on a scale of zero "no pain at all to ten "worst pain"⁽⁸⁾, posits that to establish an understanding of an individual pain assessment, the nurse should establish certain characteristics of pain like quality, intensity, location, frequency duration, onset and offset. The surgical pain range from slight to agonizing and can appear as constant or intermittent.

Pain management is the alleviation of pain or a reduction in pain to a level of comfort, that is acceptable to the client⁽⁸⁾. ⁽¹²⁾, posits that pain management methods include non-pharmacological and pharmacological approaches. In⁽⁵⁾, study on pain management, when asked what nurses do when a doctor prescribes for hourly medications, only 34% nurses said they administer the drugs at the exact time whether the patient complains of pain or not, while, 66% said they give the medication only if the patient complains of pain. Patients reported that the relief measures they usually found most effective when in pain were medications (64.2%), heat application (18.9%), change of position (11.3%) and distraction (5.7%). However, nurses mainly used medication and occasionally cold compresses. Only 46.2% patients (especially those with severe pain), reported satisfaction with the pain management instituted by nurses in both hospitals. The non pharmacological measures identified by patients as the most effective in all levels of pain was heat application which the nurses did not practice at all. In another study by⁽¹³⁾ on pain management in selected hospitals in Ilorin, the result showed that as regards the administration of narcotics, 11.6% respondents agreed that it is the best pharmacological method of pain management while 88.4% disagreed. Also 80.2% agreed that nurses administer injection paracetamol as prescribed for relief of pain, while 19.8% disagreed with the assertion.

The researchers discovered that nurses were found to be deficient in pain assessment and management. Reports showed only time of patients complaint of pains, time of giving medication and sometimes outcome of interventions. Assessments of the pain were not reported. There was no definite pain management policy identified in the hospital studied. Both nurses and doctors followed their own philosophy and managed the patients pain as deem fit. Optimum pain management is a multidisciplinary responsibility requiring a pain management team made up of all members of the health care team including the patient and his family⁽¹⁰⁾.

In spite of successful and clinical approaches that surgical pain can better be managed, much pain goes unrelieved. The clients are dissatisfied and misconceptions heighten. That is why research on nurses assessment and management of pain among surgical patients will provide a suitable level for assessment of surgical patients with pains to promote healing, prevent complications, reduce suffering and prevent the development of incurable pain state.

Conceptual framework

The conceptual framework for this study is the gate control theory of pain as described by⁽¹¹⁾.

According to⁽⁴⁾, this theory described pain in terms of its three (3) dimensions or components Viz:

-Sensory – discriminative: This component of pain allows injury to be identified in time and space, and its exact extent to be determined. In addition to transmission of nociceptive stimuli, this transmission of touch and other sensory stimuli to enable source, site stimuli to enable the source, site and severity of the pain to be identified.

-Motivational – affective: This component produces somatic (bodily) and autonomic activity result in various protective processes such as moving away from pain, immobilization of damaged tissue or preparation from fight.

-Cognitive – evaluation: This is a complex component in which response to the painful stimulus is influenced by anxiety, attention and many other factors. Arousal in situations of extreme danger block the sensory – discriminative and motivational – affective components.

The application of the theory to the study: The theory is applicable to this study because according to the gate control theory of pain both psychological (beliefs, thoughts and emotion) as well as physical factors guide the brain's interpretation of painful sensations and the subsequent response.

The implication of the theory is that, clinically nurses can use this model to manipulate the "gating mechanism" by treating the underlying cause of pain. For instance, cognitive activities may affect both sensory and affective experience or they may modify primarily the motivational affective dimension. Thus the use of psychotherapy, diversional therapy such as music/television may help to block both dimensions of pain. Also warm application to the pain site can promote psychological relaxation and a feeling of comfort while cold application decreases pain by slowing nerve conduction rate and blocking nerve impulses. Application of pharmacological (drugs) measures such as analgesics (pethidine, pentazocine and paracetamol) block the production of prostaglandin thereby relieving pain⁽¹¹⁾.

Findings from the study will provide a suitable level for assessment and management of surgical patients with pains and also promote healing, prevent complications, reduce suffering and prevent the development of increase pain state. The study will also provide a baseline data for future researchers who may wish to improve on this study.

The purpose of the study was to examine nurses assessment and management of pain among surgical patients in, secondary health faculty in Calabar Metropolis, Cross River State – Nigeria.

Specific objectives of the study were:

- (1) To assess nurses' knowledge of surgical pain assessment in secondary health facility in Calabar Metropolis.
- (2) To identify methods used by nurses to assess pain in surgical patients.
- (3) To identify non pharmacological and pharmacological method used by nurses for pain management in surgical patients in secondary health facility in Cross River State.

The hypothesis stated that, there is no significant relationship between nurses' knowledge of surgical pain assessment and management of pain.

MATERIALS AND METHODS

Design – the study was a non experimental descriptive survey.

Setting – the researchers based the study in surgical wards of Secondary Health Facility, Calabar. The hospital is situated in the Calabar Municipality. It is a secondary health institution established on the 7th of November 1991 with one hundred and eighty beds. The hospital renders surgical, medical, maternal and child health services, laboratory and radiography services.

Population

The target population comprised of all nurses working in the hospital within the period, totaling 168. The accessible population consisted of 68 nurses, 40.5% of target population. The nurses were in male surgical 12, female surgical 16, postnatal ward 16, children ward 15 and eye wards 9. These are the unit, that managed surgical patients. A purposive sampling technique was used for the study.

Data collection tools

Nurses' data were obtained through a structured questionnaire (pain assessment and management schedule) with 24 items to identify the strategies employed by nurses to assess and manage patient pains. Records (nurses' end-of-shift reports and patient's case notes) were also reviewed to identify pain documentation by nurses. A test retest reliability of the instrument showed a correlation coefficient (r) of .72 after two weeks interval.

Statistical design

Data were analyzed using descriptive statistics, while hypothesis was tested using Pearson product moment correlation.

Human right and ethical consideration

A written permission to carry out the study was sought from the medical director and the chief nursing officer in charge of the institution. A verbal consent was also obtained from participants. Anonymity was ensured by not writing names on the copies of the questionnaire.

RESULTS

Nurses level of knowledge of pain assessment among surgical patients.

Table 1: Nurses level of knowledge of pain assessment among surgical patients in secondary health facility in Calabar n = 68

Level of knowledge of pain assessment	Nurse of respondents	Percentages (%)
Good	41	60%
Poor	27	40%
Total	68	100

The result in table 1 indicates the nurses level of knowledge of pain assessment among surgical patients. Forty one (60%) respondents had good knowledge of pain assessment among surgical patients, while 27(40%) respondents had poor knowledge of pain assessment among surgical patients.

Table 2: Nurses methods of pain assessment in secondary health facility in Calabar n = 68

S/N	Statement	Agreed	Disagreed	Total
1.	Nurse collects information about pain characteristics from the patients (dull, burning aching etc.)	65 (95.8%)	3 (4.2%)	68 100
2.	A pain history is essential in pain assessment of surgical patients.	61 (89.7%)	7 (10.3%)	68 100
3.	Patient self report of pain is one of the assessment methods used by nurses to assess pain.	49 (72%)	19 (28%)	68 100
4.	Rating scale ranging from (0) "no pain at all to (10) the worst pain" is essential to adopt in pain assessment.	46 (67.6%)	22 (32.4%)	68 100
5.	Observation of behaviour is part of the methods use in surgical pain assessment.	53 (78.9%)	15 (21.1%)	68 100
6.	In assessing pain, site or location of pain is also taken into consideration.	50 (73.5%)	18 (26.5%)	68 100

The result in table 2 showed that 65(95.8%) of respondents collect information about pain from patients while 3(4.2%) did not. Sixty one (89.7%) of respondents agreed that pain history is essential in pain assessment, while 7(10.3%) respondents disagree. In self report of pain used by nurses to assess pains, 49(72%) of respondents agreed, while 19(28%) of respondents disagreed with this methods. Forty six (67.6%) agreed that rating scale ranging from 0 "no pain at all 1(10)" the worst pain" is essential to adopt in pain assessment, 22(32.4%) disagreed with this fact also 53% (78.9%) of the respondents agreed that observation is part of the method used in surgical pain assessment, 15(21.1%) disagreed. Lastly, the result also showed that 50(73.5%) of the respondents agreed that in assessing pain, site or location of pain is taken into consideration, while 18(26.5%) disagree with the statement.

Table 3: Non pharmacological and pharmacological methods used by nurses for pain management in surgical patients n = 68

S/N	Statement	Agreed	Disagreed	Total
1.	Cold and heat such as warm bath, heat bath, sitz bath, ice bags compress are used in management of surgical pain.	63 (92.6%)	5 (7.4%)	68
2.	The use of diversional therapies such as listening to music and watching TV reduces pain.	63 (92.6%)	5 (7.4%)	68
3.	Health education about surgical procedure is an important part of surgical pain management.	63 (92.6%)	5 (7.4%)	68
4.	Pharmacological methods: Opiods analgesic such as pethidine and Pentazocine injection are used for surgical pain relief.	53 (77.9%)	3 (22.1%)	68
5.	Analgesic such as paracetamol injection is used in managing surgical pain.	65 (95.8%)	3 (4.2%)	68
6.	Pre-surgical injection analgesics is given to reduce surgical pain.	48 (70.6%)	20 (29.4%)	68

The result in table 3 revealed that 63(92.6%) of the respondents agreed that cold and heat such as warm bath, site bath, ice bags compress are used in the management of surgical pain 5(7.4%) disagreed with the statement. Sixty three (92.6%) of the respondents agreed that the use of diversional therapy such as listening to music, watching T.V. reduces patients pain perception, while 5(7.4%) respondents disagreed. Also 63(92.6%) respondents agreed that health education about surgical procedure is an important part of surgical pain management, 5(7.4%) respondents disagreed. Fifty three (77.9%) respondents agreed that pharmacological methods: Opiods analgesic such as pethidine and Pentazocine are used to relief pain in surgical patients 15(22.1%) disagreed with this statement. Sixty five (95.8%) of the respondents agreed that analgesic such as paracetamol injection is use in managing surgical pain, while 3(4.2%) respondents disagreed. Lastly the result showed that 48 (70.6%) respondents agreed that pre-surgery injection such as anaesthesia is given for pain management, while 20(29.4%) disagreed with the statement.

Table 4: Pearson product moment correlation coefficient analysis of the relationship between nurse's knowledge of surgical pain assessment and management n = 68

Variable	Mean	SD	n	r _{cal}	r _{crit}
Nurses knowledge of pain assessment	13.43	2.95	68	0.43	0.2
Nurses knowledge of pain management	16.84	2.81	68		

*Significant at 0.05; *df* = 66.

Result in Table 4 showed the relationship between nurses' knowledge of surgical pain assessment and management of pain. There was a significant ($r_{cal} = 0.43$, $r_{crit} = 0.2$, $df = 66$ $P < 0.05$) with this result the null hypothesis was rejected. It therefore implied that there exist a significant relationship between nurses' knowledge of surgical pain assessment and pain management.

DISCUSSION

The overall findings of the study revealed that majority of the nurses in Secondary Health Facility in Calabar Metropolis, about 60% had high level of pain management of surgical patients. This result is supported by⁽¹⁰⁾, who discovered high level of pain management among practising nurses in Dutch. In nurses method of pain assessment, majority of respondents agreed that nurses should collect information on pain from patients. History taking is an essential component in pain assessment, and also observation of behaviour should be part of the methods used in pain assessment. In the study, another significant observation was the inappropriate assessment of pain under patient self report of pain and rating scale adopted by nurses in pain assessment. The above result is supported by⁽⁵⁾, who discovered that 84% of respondents interviewed could assess pain before managing and 100% assessed location, duration and pattern of pain and aggravating/alleviating factors. In management of pains using pharmacological and non pharmacological methods, majority of the nurses agreed that cold and heat compress, use of diversional methods, health education and injection paracetamol are the best non pharmacological and pharmacological methods of surgical pain management. Few nurses also agreed on the use of opioids and pre-surgical anaesthesia in relieving surgical pains. The above result is at variance with⁽⁵⁾, who discovered that about 66% of nurses administer pain relief when the patient is in pains, while 34% administer pain relief at the exact time of prescription.

The findings of the hypothesis revealed a significant relationship between nurses knowledge of surgical pain assessment and management. This means that the management of surgical pain by nurses is significantly influenced by the ability of the nurses to assess the pain. This finding is in agreement with the finding by⁽⁸⁾, who maintained that effective pain assessment and management is an important aspect in nursing care to promote healing, prevent complications, reduce suffering and prevent pain. This findings is also in line with the findings of⁽⁹⁾, who found out

that pain assessment knowledge is a priority for choosing pain relief measures for the clients. Also⁽¹⁰⁾, is in support of the above when they found that documented pain assessment is essential for effective pain management.

CONCLUSION

Based on the study findings, it could be observed that the nurses had good knowledge of pain assessment and management and there is uniformity in practice. However, there are still some short comings in nurses practice of pain assessment and management. There was no pain management policy and no pain management team found in hospital studied. Also documentations of pain characteristic and the outcome of interventions were also inappropriate.

It was recommended that the hospital should develop a pain control policy, and should also organize pain-related continuing education for nurses to equip them with knowledge and skills in pain assessment, management and documentations.

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