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Pain management: The knowledge and attitude among nurses in surgical wards in Hospital Miri

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ABSTRACT

Pain is a predictable effect post-surgery and currently remains a challenge to healthcare personnel, especially those in surgical wards. Uncontrolled pain delays recovery, prolongs hospital stay, impairs the quality of life of patient and causes increased risk of post-operative complications. This study aims to assess the knowledge and attitude among nurses in surgical wards in Hospital Miri. “Knowledge and Attitude Survey Regarding Pain” (KASRP) questionnaire developed by Ferrell and McCaffery (revised version 2014) administered to nurses in surgical wards with a return rate of 75%. The mean score achieved by the sample group was 51.7%, which is below the pass score of 80%. This study reflects the need to enforce continuing pain education among our nurses to effectively relieve patient’s suffering.

Keywords: *pain knowledge, pain attitude, nurses, surgical ward*

INTRODUCTION

Pain is highly prevalent and remains a challenge to healthcare professionals in general and specifically in surgical wards. It is a predictable adverse outcome from surgeries (1). Alarming, it has been repeatedly confirmed by studies in the past few decades that pain continued to be inadequately treated in patients undergoing surgery (2). Good pain management makes a tremendous positive impact on a patient's hospital experience. Poorly controlled pain leads to detrimental effects on the quality of life and functional recovery as well as increased risk of post-surgical complications (3). In view of this, Malaysia highlighted the concern by initiating a project to introduce pain as fifth vital sign since 2008 which leads to launching of Pain Free Hospital concept in several hospitals. This initiative aims to heighten awareness and to equip healthcare personnel with technical and practical knowledge on how to improve the care of patients in pain.

Given the high prevalence of pain, it is imperative for healthcare professionals to possess appropriate knowledge and attitude in managing pain. Pain management has been an integral part of nursing practice. To date, nurses have received great focus for research in this field. This could be due to nurses are spending more time with patients and they are at a unique position to monitor, perform interventions and assess the adequacy of pain relief (4). It is proven that knowledge deficit and negative attitude towards pain among nurses lead to undertreated pain (5). This leads to the design of our study which aims to determine the knowledge and attitude towards post-operative pain management at Hospital Miri.

METHODS

Sample and setting

A descriptive, cross-sectional design employed to assess the knowledge and attitude among nurses to pain management. The data collected from staff nurses and nursing sisters in both male and female surgical wards in Hospital Miri, Sarawak using a universal sampling technique.

Research instrument

Nurses' knowledge and attitude to pain management measured using the "Knowledge and Attitudes Survey Regarding Pain" (KASRP) developed by Ferrell and McCaffery (revised version July 2014). KASRP pain tool developed in 1987 and has been used extensively since then until present. It has been revised over the years to accommodate to the changes in the practice of pain management. The original KASRP pain tool consists of 39 close-ended questions which includes aspects of pain assessment, pharmacological and non-pharmacological interventions and attitudes towards pain management. The content of questionnaire constructed in line with the American Pain Society, the World Health Organization and the National Comprehensive Cancer Network Pain Guidelines current standards. Content validity of KASRP tool has been established by pain experts' review.

The choice of the items in the questionnaire used in this study based on revised KASRP tool (questions number 16, 25, 27, 30 and 32). Revisions made on the aforementioned questions to match the drugs and instruments used in Hospital Miri. Questions divided into 3 sections:

Q1-22 (true-and-false questions), Q23-36 (multiple choice questions) and Q37 and 38 (case scenarios, each question divided into two parts). A correct response given a value of one and an incorrect response, an unanswered question or multiple answers given a value of zero. Total scores summed and ranged 0-40. Data collection started on 13 November until 17 December 2017. Out of 53 sets of questionnaires distributed, 40 respondents successfully responded to this study.

As suggested by Ferrell and McCaffery, the data collected analysed by the percentage of the complete scores as well as in analysing individual items rather than differentiating the questions into knowledge and attitude domains (6). Items with the least and highest frequency of correct and incorrect answers identified and explored further.

RESULTS

The response rate yielded for this study is 75% (40 respondents) in which questionnaires completed and returned out of 53 questionnaires distributed.

In this study, the scores achieved ranged from 35%-90%, with an average score of 51.7%, indicating insufficient knowledge of pain management. If a score of 80% represents adequate knowledge of pain management (7, 8), only 5% of the participants achieved that. Table 1 group the questions from section 1 and 2 that have been identified as having less than 20 correct responses (50%) from the respondents, from the least to the highest correct answer rate.

Questions answered correctly by more than 90% of the respondents are questions 14, 21 and 25. Questions 14 (97.5%) and 21 (92.5%) are some of the general questions about doses of pain medication and its escalation. As for question 25, 90% of the respondents recognised that morphine is the drug of choice for treating prolonged moderate to severe pain for cancer patients. On the other hand, only 20% of the respondents able to correctly identify useful medications for treatment of cancer pain (both opioids and non-opioids).

Questions 27, 29 and 31 further analysed individually based on the frequency of each answer selected by the respondents to have an insight into what the nurses believe about pain and its management. Majority of the respondents (85%) agreed that analgesics should be given on a fixed schedule post-operative. Five of the nurses had misconception that analgesics should be given only when patient asks for it and a nurse gave wrong answer the request for pain medication should be determined by nurses. When asked about the most likely reason a patient with pain would request increased doses of analgesics, 32 nurses identified that patient was experiencing increasing pain. Surprisingly, a few respondents associated increased pain to addiction and attention seeking behaviours. Majority of the respondents believed that patient is the most accurate judge of his or her pain experience (82.5%). Other respondents falsely believed the treating physical, the patient's primary nurse, patient's spouse or family and the pharmacist are reliable source of the patient's pain intensity.

Although majority of the participants' showed good attitudes based on the above items, discrepancy between their attitudes and actual practice in pain management reflected in the case scenarios used in KASRP questionnaire. Items 37 and 38 are two scenarios used to assess the clinical application of pain management. Less than half of the total respondents, 15% and 30% gave correct answers to items 37 and 38 respectively. In the first case scenario,

respondents presented with a patient who described as cheerful, does not show any facial or physical signs of distress but reported his pain score as 8/10 on the first day following an abdominal surgery. Only six nurses rated the pain as what the patient said. In the second case scenario where patient portrayed as “lying quietly in bed and grimaces as he turns in bed” and rated his pain as 8/10, 70% of the nurses, however, underrated the pain score. Despite this, most of the respondents believed the one conveying discomfort to be suffering a higher level of pain than the one with a relaxed manner. The above-mentioned pain score was the score given after two hours patients given 2mg of morphine intravenously. Nurses then required to determine the subsequent dose of morphine to be administered to reduce the pain score to comfortable level (pain score of 2/10). Unfortunately, majority of the nurses (>80%) showed tendency to administer no or lower doses of morphine for both scenarios, even though being given with the instruction “morphine IV 1-3mg q1h PRN pain relief” by the physician.

Table 1: Items with less than 50% correct answer rate for sections 1 and 2 ($n = 40$)

Item content	Correct answer rate
1. Vital signs are always reliable indicators of the intensity of a patient's pain.	F : 15%
30. Which of the following is useful for treatment of cancer pain?	All of the above : 20%
8. The usual duration of analgesia of 1-2mg morphine IV is 4-5 hours.	F : 22.5%
36. Following abrupt discontinuation of an opioid, physical dependence is manifested by the following:	Sweating, yawning, diarrhoea and agitation with patients when the opioid is abruptly discontinued : 22.5%
4. Patients may sleep in spite of severe pain.	T : 25%
15. Giving patients sterile water for injection (placebo) is a useful test to determine if the pain is real.	F : 30%
17. If the source of the patient's pain is unknown; opioids should not be used during the pain evaluation period, as this could mask the ability to correctly diagnose the cause of pain.	F : 30%
28. A patient with persistent cancer pain has been receiving daily opioid analgesics for 2 months. Yesterday the patient was receiving morphine 200mg/hour intravenously. Today he has been receiving 250mg/hour intravenously. The likelihood of the patient developing clinically significant respiratory depression in the absence of new co-morbidity is ____.	Less than 1% : 30%

5. Aspirin and other non-steroidal anti-inflammatory agents are NOT effective analgesics for painful bone metastases. F : 35%

9. Opioids should not be used in patients with a history of substance abuse. F : 35%

18. Anticonvulsant drugs such as gabapentin (Neurontin) produce optimal pain relief after a single dose. F : 35%

11. Patients should be encouraged to endure as much pain as possible before using an opioid. F : 37.5%

33. How likely is it that patient who develops pain already have an alcohol and/or drug abuse problem? 5-15% : 40%

23. The recommended route of administration of opioid analgesics for patients with persistent cancer-related pain is ___. Oral : 42.5%

26. A 30mg dose of morphine is approximately equivalent to ___. Morphine 10mg IV : 42.5%

16. Oxycodone 15mg PO is approximately equal to 5-10mg of morphine PO. F : 45%

3. Patients who can be distracted from pain usually do not have severe pain. F : 47.5%

DISCUSSION

In a recent study conducted to assess pain experience and satisfaction with pain control among surgical patients in an urban hospital in Malaysia, more than 80 percent patients experience moderate to severe pain in the first 24 hours post-operative and the satisfaction level with the pain management offered was encouraging. This study also looked into the reasons that affect the level of satisfactions and has identified nursing care to be the most important factor (1).

Our study, which aims to assess the knowledge and attitude towards post-operative pain management among nurses at Hospital Miri, revealed that knowledge deficit does exist and the attitude towards pain was not satisfactory. The findings of the study also revealed that the participants had inconsistent knowledge of and misconceptions about effective pain interventions. Without discriminating education level, years of experience and working department, a mean total score of 51.7% in this study is comparatively better than a few nurses' surveys such as in Nepal (49.14%) (9), Hong Kong (47.72%)(10) and Turkey (35.41%)(11). An Italian nurses' study gave slightly better results in terms of mean score (55%) whereas a few other studies conducted in Ireland and Great Britain using the same KASRP pain tool demonstrated scores above 70%(12, 13). When this pain tool first developed in 1987, Ferrell and McCaffery did not indicate the acceptable pass score. However, in a later study conducted by McCaffery and Robinson in 2002, a pass score of 80% was set whereby nurses who score less than this asserted to have compromised ability to care for patients in pain (12).

Responses from the adapted questionnaire will be further discussed in terms of:

1) pain assessment, 2) pharmacology and pharmacological interventions, and 3) fears related to opioids' adverse effects and addiction.

Pain assessment

Pain defined by the International Association of the Study of Pain (IASP) as an unpleasant sensory or emotional experience associated with actual or potential tissue damage or described in terms of such damage(14). This definition highlights that pain may not always sourced as physical and the pain experience itself is of a multidimensional nature. Pain assessment is the cornerstone to optimal pain management. A literature review on the

congruence between health professionals' and patients' pain ratings reveals that healthcare personnel tends to underestimate pain during clinical assessment (15). One should not rely on vital signs to verify a patient's report of pain. As suggested by experts, vital signs can be used as a reference only in patients who are unable to give verbal or behavioural cues about pain, i.e. unconscious or mechanically ventilated patients (16). However, only 15% of the respondents knew about this as the rest believed that vital signs are always reliable indicators of pain intensity. Twenty-five percent of the sample agrees that patient may sleep despite of severe pain. This is further supported when almost half of the sample believed that patients who can be distracted from pain usually do not have severe pain, which is an incorrect judgment. Consistent with the findings above, when presented as clinical case scenarios, nurses have the tendency to underrate the pain scores reported by patients; hence resulting in pain being undertreated. Interestingly, 97.5% of the respondents have the correct concept that subsequent doses of opioid analgesics should be adjusted based on individual patient's response after an initial dose but the clinical application of this concept was not evident, as proven by the findings from the case scenarios in the questionnaire.

Pharmacology and pharmacological interventions

As presented in Table 1, majority of the questions that has the lowest correct response rate are those related to pharmacological interventions and their pharmacology properties. This may reflect a potential that nurses in Hospital Miri are concern or anxious about over-treating patients as they believed that patients may over-reported for pain they had. Ninety percent of the respondents agreed that morphine is the drug of choice for treating moderate to severe cancer pain. Conversely, about two-third of the sample were not aware that non-steroidal anti-inflammatory drugs (NSAIDs) are also useful in treating cancer pain. This is further supported with 80% of the respondents could not identify use of opioids and non-opioids for cancer pain.

Effective pain management may require combination of drugs from different classes. The benefits of combining analgesics have long been acknowledged and supported by multiple studies. Drugs from different classes act via different mechanisms and may have a synergistic effect in achieving the desired therapeutic endpoints. Besides that, it potentially reduces the incidence of adverse effects by allowing reduced dosage of each drug, thereby improving the overall tolerability (17, 18). Adjuvant analgesics should be considered in pain management whenever indicated and patients should be made aware that optimal pain relief takes time up to weeks, in order to ensure good compliance to pain-relief medications.

As recommended by World Health Organization (WHO), oral route should be used whenever feasible because it is convenient, least invasive and cost effective (12). Giving the analgesics at regular intervals has also been proven to effectively provide continuous pain relief post-operative. Since pain relief does not obscure the diagnosis, one should not be withheld from pain treatment during the process of identifying the underlying cause of pain. Unfortunately, only 30% of the respondents knew that placebos should not be used and considered inappropriate from an ethical viewpoint to verify patient's report of pain. Such belief would result in unnecessary sufferings to patient, which is against the advocacy that "access to pain management is a fundamental human right".

Factual knowledge about equianalgesic dosing and pharmacology properties of the medications has also been shown to be lacking in this study. A few studies assessing nurses' knowledge in pharmacology also gave similar findings (19, 20). Since medication administration is a daily basic activity for nurses, adequacy and competency in the knowledge of pharmacology and therapeutics is of paramount importance, especially for drugs they commonly encounter.

Fears related to opioids' adverse effects and addiction

Report from the International Narcotics Control Bureau (INCB) indicated that the consumption of morphine in Malaysia has increased steadily over years from 0.4837mg/capita in 1993 to 1.0774mg/capita in 2015 but it is still below than the global mean of 5.42mg/capita (21). Misconceptions about medications, especially opioids, have been identified as the principal attitudinal barrier to good pain management (22, 23). Fear of the adverse effects of opioids and the addictive nature of opioids are common anecdotes frequently seen in the management of pain, not only amongst nurses but also doctors and patients themselves(23).

Even though 82.5% of the respondents knew that respiratory depression is rare in patients who have been receiving stable doses of opioids over months, 70% of them were not aware that the chance of developing significant respiratory depression was less than 1%. False impressions about opioid addiction were also noted where 65% of the respondents incorrectly believed that opioids should not be given in patients with a previous history of substance abuse, probably due to the perception that there will be risk of recidivism. Opiate phobia attitude has also led to only 37.5% of the sample gave correct response that patients should not be encouraged to tolerate with pain as much as possible before an opioid is used. This fear is further reflected in the nurses' lack of awareness in symptoms of opioid withdrawal following abrupt discontinuation of an opioid in addicted patient and patient who has opioid dependence. When an opioid is stopped or sudden reduction of dose, both types of patients will experience withdrawal symptoms such as sweating, chills, muscle and joint pain, nausea, vomiting, diarrhoea, restlessness and insomnia. This lack of insight is further translated in practice with the fear of overdosing opioid according to pain score reported by patient.

Pain is a complex process and multidimensional in nature. A positive attitude plays a crucial role in pain management to close the gap between knowledge and the application of knowledge to real clinical setting. Even though the findings of this study revealed the necessity for immediate intensive continuing education and development among the nurses, we should not neglect other factors that may potentially affect their pain management decisions. Nurses receive great attention in pain survey because of the nature of their work where they are spending more time with patients, enabling them to evaluate, coordinate and assist patients. Nevertheless, the impact of time constraint and shortage of staff should not be overlooked. Ward crowding is one of the identified barriers that negatively affects the quality time nurses can spend with patients and lengthen the time they could respond to patients in pain. Besides that, the varying prescribing pattern of the prescribers is among the contributing factors to effective pain management. Nurses are reliant on doctors to prescribe the most appropriate analgesic regimen; hence doctors' knowledge related to pain and analgesics, to certain extent, poses a barrier (24).

LIMITATIONS

This study has several limitations. The nurses recruited in this pain survey were all nurses in surgical wards without differentiating their academic qualifications and years of experience. In view of the wide disparities in the individual score achieved (35%-90%), there is possibility that those who did not respond to this study (13 nurses) might have a significant influence on the results of this study. It was impossible to clearly categorise the instruments in the questionnaire into knowledge and attitude domains as some questions harbour both knowledge and attitude components. Therefore we could not study the relationship between knowledge and attitude in the management of pain in our survey.

CONCLUSION

With growing emphasis laid on patient's right to pain relief and the evidence of the substantive adverse consequences of undermanaged pain, it is incumbent upon nurses to deliver pain relief to patients effectively. Collectively findings from this study showed deficits in knowledge and appropriate attitude among nurses in surgical wards, Hospital Miri. Continuous education and training are therefore necessary to enhance the quality of patient care. Study like ours sets a framework for the implementation of training programs for nursing staff in the future. As a result, projects such as introduction of Pain Free Hospital concept, which aim to bridge the gap between the needs of the patients and responsibilities of healthcare professionals, are probably crucial to accomplish the goal of an improved assessment and treatment of pain.

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