Knowledge and Attitudes of Nurses and Their Practices Regarding Post-operative Pain Management in Bangladesh

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Abstract

Numerous studies revealed that the prevalence of pain remains high in post-operative patients. Little is known about the knowledge and attitudes of Bangladeshi nurses and their practices in post-operative pain management. This study aimed to examine the level of knowledge and attitudes of nurses and their practices regarding post-operative pain management. One hundred nurses were selected by using simple random sampling from two hospitals in Bangladesh. The instruments composed of three parts: (1) Nurses’ Demographic Data Form; (2) Knowledge and Attitudes of Nurses Regarding Post-operative Pain Management Questionnaire, and (3) Nurses’ Caring Behavior Regarding Post-operative Pain Management Questionnaire. The questionnaires were content validated by three experts, and back-translated to the Bengali language. The test-retest reliability coefficient was .72 for the knowledge and attitudes questionnaire and was .87 for the practice questionnaire. Eighty-seven questionnaires were returned and used in the data analysis.

The findings indicated that nurses had very low level of knowledge and negative attitudes regarding post-operative pain management whereas the level of practice was moderate. Therefore, it is necessary to improve the knowledge and attitudes of nurses and their practices regarding post-operative pain management in Bangladesh.

Key words: nurses’ knowledge and attitudes, pain management practice, post-operative pain.
Background and Significance of the Problem

Pain is a common problem encountered by hospitalized patients in general and surgical settings in particular. Numerous studies have revealed that the prevalence of pain remains high in post-operative patients (Apfelbaum, Chen, Mehta, & Gan, 2003; Moss, Taverner, Norton, Lesser, & Cole, 2005). Unrelieved pain from post surgery has devastating physiological, psychological, and socio-economic effects (Chung & Lui, 2003).

Nurses are the health professionals, who operate in close proximity with the patients in post-operative units and thus have a significant professional responsibility on alleviation of post-operative pain. In the past few decades, numerous studies have shown that nurses’ knowledge deficits and negative attitudes related to post-operative pain management can significantly contribute to an inaccurate pain assessment and ineffective pain management (McCaffery & Ferrell, 1997). Recently, the study provided that nurses still underestimated patients’ pain and did not use proper pain scale even though it is now available (Ene, Nordberg, Bergh, Johansson, & Sjorstrom, 2008). Nurses administered the analgesics as needed rather than fixed order and gave less analgesic than prescribed (Manias, Bucknall, & Botti, 2005).

Literature reviewed above was conducted in several countries. Little is known about the level of knowledge and attitudes of Bangladeshi nurses and their practices in post-operative pain management. Coyne et al. (1999) stated that different educational backgrounds of nurses might be the main factor influencing nurses’ pain management practice. In Bangladesh, the basic nursing education is diploma level. The Bangladeshi nurses do not receive formal education or training program to prepare them to help contribute to effective pain management. Therefore, it is worthwhile to investigate the knowledge and attitudes of Bangladeshi nurses and their practice about post-operative pain management. The finding from this study would provide baseline information for further improvement in pain area.

Objectives

This study aimed to
1. Examine the level of knowledge and attitudes of nurses regarding post-operative pain management
2. Examine the level of practices of nurses regarding post-operative pain management
Technical Terms

Knowledge and attitudes of nurses regarding post-operative pain management was defined as nurses’ understanding and valuing about post-operative pain, assessment, evaluation, and management of post-operative pain including both pharmacological and non-pharmacological management. The knowledge and attitudes of nurses regarding post-operative pain management was measured by using the Nurses’ Knowledge and Attitudes Regarding Post-operative Pain Management Questionnaire (Ferrell & McCaffery, 2008).

Practices of nurses regarding post-operative pain management was defined as nurses’ perception of their own nursing actions performed to reduce the post-operative pain. Practice of nurses regarding post-operative pain was measured by using the Nurses’ Caring Behavior Regarding Post-operative Pain Management Questionnaire (Erniyati, 2002).

Framework of the Study

The knowledge-attitude-practice (KAP) model and pain literature was used to guide the conceptual framework for this study. The KAP model was first used in the field of family planning and population studies in the 1950s (Launiala, 2009). This model suggests that the right information (knowledge) would influence attitudes, and thus change behavior (practice). In an area of pain and its management, the KAP model has been widely used to explore the knowledge, attitudes and practices of nurses (Brown, Bowman, & Eason, 1999; Matthews & Malcolm, 2007). Since knowledge and attitudes are concepts that have an intertwined correlation, it is more helpful to avoid distinguishing them (Ferrell & McCaffery, 2008). Thus, in this study, knowledge and attitudes of nurses was treated as a single variable, namely knowledge and attitudes of nurses regarding post-operative pain management. In addition, nurses’ practices regarding post-operative pain was investigated.

Research Methodology

This study was conducted at two hospitals in Khulna, Bangladesh. The target population was the nurses who were taking care of surgical patients. The sample size was estimated by using power analysis, using alpha .05, power .80, and effect size .40 as determined by the finding of the previous study (Glajchen & Bookbinder, 2001), yielding a sample size of 50 (Polit & Beck, 2008). In order to achieve the power of the test as the effect size estimated form the previous study conducted in the US might be lower when applied to Bangladeshi nurses; the researchers doubled the proposed sample size to be 100.
The instruments used consisted of three questionnaires: (1) the Nurses’ Demographic Data Form; (2) the Nurses’ Knowledge and Attitudes Regarding Post-operative Pain Management Questionnaire (NKAPQ), and (3) the Nurses’ Caring Behavior Regarding Post-operative Pain Management Questionnaire (NCBPQ). The NKAPQ was developed and recently revised by Ferrell and McCaffery (2008) and was modified by the researcher with the permission from the developers. The original tool is a recognized, reliable, and valid tool. The internal consistency reliability was established (alpha coefficient >.70) with items both knowledge and attitudes. The NKAPQ consists of 40 close-ended questions and has a total score of 40. A score of each subject was converted to percentage. Based on this percentage, the researchers categorized the percent scores into five levels, according to the well-accepted cutoff points using in education (McDonald, 2002) to make it more meaningful. The ranges of scores for the five levels were as follows: very high (90-100%), high (80.00-89.99%), moderate (70.00-79.99%), low (60.00-69.99%), very low (< 60%). The higher scores indicated the higher level of knowledge and positive attitudes of nurses toward post-operative pain.

The NCBPQ was developed by Erniyati (2002). There were 36 force-choice (yes/no) items. One last open-ended question asks whether the nurses would provide any alternative to alleviate patients’ post-operative pain. The total score ranged from 0 to 36. The scores were converted into percentage, and categorized similar to the NKAPQ scores. The higher scores indicated the more actions nurses performed to reduce post-operative pain.

In addition, the NKAPQ and the NCBPQ were translated using back-translation technique (Sperder & Devellis, 1994). Two Bangladeshi bilingual translators involved in the translation process. Then, the two English versions were examined for comparability of language and similarity of interpretability by the thesis advisory committee. After revision, following the committee suggestion, three experts reviewed a Bengali version to determine content validity of the tools. The test-retest reliability coefficient was .72 for the NKAPQ and .87 for the NCBPQ.

After obtaining approval from the Institutional Review Board, Prince of Songkla University, Thailand and granting permission from the target hospitals. Initially, 100 nurses were selected by using the simple random sampling from two hospitals. The questionnaires were administered to subjects and the primary researcher collected the questionnaires after two weeks. Finally, 88 questionnaires were returned (88% response rate). One subject behaved as an outlier (possessed very low knowledge score, 25%). Therefore, the data of this subject were excluded. Data were analyzed by using descriptive statistics and simple content analysis.
Results

The mean age of the samples was 38 years (SD = 4.03), ranging from 31 years to 52 years. All subjects were female, and more than half of them were Muslim (57.5%). Nearly all subjects (97.7%) had diploma degree. Three-fifths of the nurses had previous pain experience (62.1%). Among the nurses who had pain experience, the types of nurses’ pain experience were as follows: surgical pain (46.3%), back pain (37.0%), headache (11.11%), and stomach pain (5.6%). All the nurses had never attended a pain management course. The mean duration of nurses’ experience in caring for patients with surgery was approximately two years (M = 1.98, SD = 2.08).

Nurses’ Knowledge and Attitudes Regarding Post-operative Pain Management

Overall, the level of knowledge and attitudes of nurses was very low, presenting by the total mean score of 59.05% (SD = 5.62) with a minimum and maximum score of 40% and 70%, respectively (Table 1).

Table 1

Frequency and Percentage of Nurses According to the Level of Knowledge and Attitudes in Post-operative Pain Management (N = 87)

<table>
<thead>
<tr>
<th>Level of Knowledge and Attitudes</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very low (&lt;60%)</td>
<td>39</td>
<td>44.8</td>
</tr>
<tr>
<td>Low (60.00-69.99%)</td>
<td>47</td>
<td>54.1</td>
</tr>
<tr>
<td>Moderate (70.00-79.99%)</td>
<td>1</td>
<td>1.1</td>
</tr>
</tbody>
</table>

M = 59.05%, SD = 5.62, Min = 40%, Max = 70%

Additional item analysis was made to determine which items more nurses could answer correctly and fewer nurses could answer correctly. Five items that highest numbers of nurses answered the items on the NKAPQ correctly, in order, were: (1) Benzodiazepines are not effective pain relievers unless the pain is due to muscle spasm (78.2%); (2) Elderly patients can tolerate opioids for pain relief (73.6%); (3) Vital signs are not always reliable indicators of the intensity of patient’s pain (72.4%); (4) Respiratory depression rarely occurs in patients who have been receiving opioids over a period of months (71.3%); and (5) The recommended route of administration of opioid analgesics for patients with brief, severe pain of sudden onset such as post-operative pain is intravenous (71.3%). Five items that lowest numbers of nurses answered correctly were: (1) Patients may sleep in spite of severe pain (11.5%); (2) Non-drugs methods useful for combining with treatment of post-operative pain...
are relaxation, music, and massage (19.5%); (3) Even the source of the patient’s pain is unknown, opioids can be used during the pain evaluation period (24.1%); (4) Aspirin and other nonsteroidal anti-inflammatory agents are effective analgesics for acute post-operative pain (25.3%); and (5) The patients should be advised to use non-drug techniques concurrently with pain medications (33.3%).

Furthermore, two case studies of item No.37-40 regarding nurses’ knowledge in pain assessment and management were examined. There were two patients that they reported their pain level as 8 by using the Numeric Rating Scale. For the patient who was smiling, 69% of the nurses recorded his pain level as 8, whereas, for the grimacing patient, only 62.1% of the nurses recorded this patient pain level as 8. In addition, only 12 nurses (13.8%) would increase the dose for the grimacing patient, whereas, 7 of them (8.0%) would increase the dose for the smiling patient.

Nurses’ Practice Regarding Post-operative Pain Management

Overall, nurses reported that they had practiced in pain management for post-operative patients at a moderate level (M = 77.81%, SD = 10.94) by which three-fourths of them indicated that they had practiced in pain management at the moderate (37.9%), high (21.8%), and very high level (16.1%) (Table 2).

Table 2
Frequency and Percentage of Nurses According to the Level of Practice in Post-operative Pain Management (N = 87)

<table>
<thead>
<tr>
<th>Level of Nurses’ Practice</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very Low (&lt;60%)</td>
<td>4</td>
<td>4.6</td>
</tr>
<tr>
<td>Low (60.00-69.99%)</td>
<td>17</td>
<td>19.5</td>
</tr>
<tr>
<td>Moderate (70.00-79.99%)</td>
<td>33</td>
<td>37.9</td>
</tr>
<tr>
<td>High (80.00-89.99%)</td>
<td>19</td>
<td>21.8</td>
</tr>
<tr>
<td>Very High (&gt;90.00%)</td>
<td>14</td>
<td>16.2</td>
</tr>
</tbody>
</table>

M = 77.81%, SD = 10.94, Min = 50%, Max = 97.22%

In addition, item analysis was conducted. Five items that highest number of nurses reported that they performed, in order, were: (1) Use observation to determine pain (100%); (2) Help promote enough sleep (98.9%); (3) Help support pain area when they move or cough (97.7%); (4) Provide comfort after surgery (96.6%); and (5) Ask the intensity of pain before
giving pain killers (95.4%). Five items that lowest number of nurses indicated that they performed were: (1) Use pain scale to describe pain intensity(11.5%); (2) Ask non-pharmacological method to reduce pain (51.7%); (3) Ask the cause pain become worst (56.3%); (4) Ask factors reduce the intensity of pain (58.6%); (5) Provide alternative activities to alleviate pain when they still felt pain (63.2%).

Moreover, all nurses gave responses to the open-ended question in the practice questionnaire: “What other things/activities that you have done to alleviate patient’s pain after surgery?” When analyzed, these activities were divided into four categories. These were: (1) suggesting patients to read the religious books such as Quran, Gita etc. (45.5%), (2) suggesting patients to use Tasbih—a religious practice (22.7%), (3) positioning comfortably (22.7%) and (4) reassurance (9.1%).

Discussion

Knowledge and Attitudes of Nurses Regarding Post-operative Pain Management

The present study showed that nurses had very low level of knowledge and attitudes regarding post-operative pain management with the mean score percentage of 59.05%. These findings are supported by McCaffery and Ferrell’s study (1997), who found that nurses had inadequate knowledge and negative attitudes about post-operative pain management. Several factors might contribute to the low level of knowledge and negative attitudes of nurses regarding post-operative pain management. Firstly, the majority of subjects in this study had their nursing education at diploma level. The level of nursing education was found to have a positive relationship with the level of knowledge and attitudes as evident in Clarke et al.’s study (1996). Clarke et al. found that master-prepared nurses had a mean score 10% higher than nurses prepared at the diploma, associate, and baccalaureate level. Secondly, no subject in this study had received any training program related to pain management. Thirdly, it has been revealed that nurses in Bangladesh have been trained to perform task-oriented nursing actions rather than problem-oriented nursing actions (Hadley et al. 2007). This type of nursing care delivery may limit their ability to seek more knowledge. Fourthly, the overall attitudes of Bangladeshi nurses towards their patients are not in a positive direction as reported in the previous study and nurses in Bangladesh faced many stigmas and were criticized negatively by public in the society (Hadley et al.). This may contribute to the nurses’ negative attitudes towards their patients and may indirectly affect their pain management.
Additional item analysis of the NKAPQ revealed interesting findings. For items that highest percent of nurses answered correctly, they were in areas that were well-known by Bangladeshi nurses. For examples, the items read, “Benzodiazepines are not effective pain relievers unless the pain is due to muscle spasm” and “Vital signs are always reliable indicators of the intensity of a patient's pain”. Regarding the lowest numbers of nurses answered the items correctly in some areas, only 11.5% and 19.5% of nurses did it correctly on the questions that “Patients may sleep in spite of severe pain” and “Non-drugs methods useful for combining with treatment of post-operative pain are relaxation, music, massage” This may be because the nurses did not know that non-drugs methods could be beneficial in the treatment of severe pain, as well as mild to moderate pain. This is supported by Matthews and Malcolm’s study (2007). They found that non-drugs methods are very effective for combining the treatment of pain but only 6% of nurses used non-drugs methods. Moreover, one study has shown that lack of knowledge and attitudes of nurses about pain management in multiple areas, including addiction, opiate properties, properties of pethidine, patient’s self report, equianalgesia, and risk of respiratory depression (Textor & Porock, 2006).

The present study showed one unexpected result that more nurses rated pain score correctly for the smiling patient (69%) than for the grimacing patient (62.1%). Unlike the pervious study by McCaffery and Ferrell (1997) who found that for the smiling patient, 73.8% of the nurses recorded correctly and for the grimacing patient 87.1% of the nurses recorded correctly. In addition, in this present study only 2.29% nurses answered correctly for two case studies and also medication. They would increase the dose for the patient when the patient was experiencing severe pain. These indicated that Bangladeshi nurses may lack of knowledge related to pain medication. Similarly, Richards and Hubbert (2007) stated that on the first post-operative day nurses administered far less analgesia than the PRN schedule would have permitted; even many patients were in pain.

Nurses’ Practices Regarding Post-operative Pain Management

The study presented that nurses had moderate level of practices regarding post-operative pain management, presenting by the mean score of 77.81%. Some factors might contribute to the moderate level of practices on pain management among nurses in this present study. Firstly, there was no subject in the present study had achieved continuing education on pain topic that has proven helpful in increasing skill in the area of pain management. Secondly, it has been revealed that nurses in Bangladesh do not provide active hands on practice for the direct care of patients (Hadley & Roques, 2007). The nurses usually
manage patients’ post-operative pain according to the surgeons’ written order. Thirdly, nearly 60 percent of nurses in this present study were Muslim. Muslim nurses in Bangladesh, according to their culture, are less likely to touch their patients (Hadley et al., 2007). This kind of nursing care delivery may be a boundary of effective pain management.

Additional item analysis revealed that some areas that nurses had highly performed in practices because those items were the common actions that nurses could perform easily such as “Using observation to determine patient’s pain”, “Helping patients get enough sleep”, and “Helping patients to comfort pain area when they move or cough”. The result showed that less nurses used pain scale to assess pain intensity. A possible explanation was that Bangladeshi nurses had never used a pain scale for pain assessment and the Numeric Rating Scale was also unknown by nurses. Another pain assessment action less performed by the nurses was “Ask non-pharmacological method to reduce pain”. This indicated that nurses may not have adequate knowledge regarding non-pharmacological methods. Similarly, the previous study found that nurses seldom used non-pharmacological treatment for post-operative pain relief (Clarke et al., 1996).

Content analysis of the open-ended to determine other pain management strategies nurses performed provided interesting findings. Nearly half of them mentioned that they suggested patients to read the religious books. It may explain that culture may lead Bangladeshi nurses to believe that satisfying patient spiritual needs could help them to reduce their pain. Some nurses suggested them to use Tasbih (counting beads) and to keep the patient relax. Few nurses used reassurance about what they used to relieve the pain to help the patients feel more certain.

**Conclusion**

The finding of this study showed that nurses had very low level of knowledge and attitudes in post-operative pain management and had moderate level of practices. Three limitations in this study should be mentioned. First, all nurses in the present study were female, thus, it could not be generalized to male nurses. Second, this study was conducted at Khulna city. Thus, this may limit the generalizability of the findings. Third, this study used a single method to collect data, a self-report. This method has limitation in itself, particularly when it is used for rating about human actions. Thus, further study is recommended.
Recommendations

The findings of this study offer the following recommendations.

1. Lack of pain contents in basic nursing education and no pain training course offered to nurses working with surgical patients may contribute to the very low level of knowledge and attitudes of nurses. Therefore, the training program regarding pain and its management should be provided to staff nurses working in the surgical setting.

2. Although the nurses in this study rated that they performed many actions related to pain management with the moderate level of practices, in some certain practice cares (i.e., using pain assessment scales), there was no available pain assessment scale at present. An initiative of implementing systematic pain assessment using pain scales should be started.

3. Nurse administrators can use the findings of this study to request to policy makers for allocating budgets for training nurses regarding pain management in order to improve the quality of nursing care in this area, resulting improving quality of life of patients in pain.

4. A replication study to include male nurses and in urban/rural hospital is recommended. Future study should employ other methods for data collection such as observation to enhance more valid findings.
References


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