



Nurses' knowledge, attitude and practices regarding pain assessment among patients with cancer at Uganda Cancer Institute

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Abstract

Introduction: Patients with cancer often experience mild to severe pain. Therefore, effective pain assessment and management is paramount to this patient sub-population. This study sought to assess the knowledge, attitude, and practices associated with pain assessment among nurses at Uganda Cancer Institute (UCI), Mulago National Referral Hospital, Kampala, Uganda.

Methods: This descriptive cross-sectional study was conducted at UCI among 67 randomly selected nurses. Statistical analysis was performed using SPSS software.

Results: The mean age of the respondents was 26 years with the standard deviation (SD) of 2.46. The average knowledge scale score was 12 (range: 0-16), indicating good knowledge of pain assessment. Nurses' average attitude scale score was 9 out of a total score of 12, indicating a positive attitude towards pain assessment. Practices included use of standardized pain assessment tools (61.2%), patient observation (41.8%), documentation (94.0%), and administration of analgesics (56.7%). Most common assessment tool used was the verbal rating scale (32.8%). Pain assessment findings were rarely discussed (52.2%) during nurses' reports.

Conclusion: Nurses' knowledge, attitude, and practices of pain assessment and intervention are essential components in promoting patient comfort; continuous professional development and research in this area is needed.

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Introduction

Patients with cancer may always experience pain at diagnosis, during and after treatment.¹ About 64% of these patients remember having pain as a stressful experience during their hospital stay.²

Pain is a subjective, legitimately personal experience associated with either actual or potential tissue damage. Pain poses a serious problem and must be dealt with and expounded in a correct manner.³ Nurses play an essential role in pain assessment and management.⁴ In practice, nurses are responsible for assessing pain by obtaining subjective responses from the patient using verbal set of questions, and also objectively

observing nonverbal actions like facial expressions of the patients.⁵

However, globally, many nurses in general practice settings lack the knowledge about basic pain assessment and management principles, this also applies to the attitudes that nurses have towards pain and its assessment.⁶

Although there are technological advances, extensive research, and evidenced based practice guidelines to manage pain adequately, patients continue to suffer because of inadequate pain management.⁷ Pain assessment in patients with cancer is more difficult, and conventional pain assessment tools are not always appropriate. To date, there is no universal pain assessment

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tool that is suitable for all cancer patients.^{7,8} Knowledge on elements of a variety of different tools may be required according to the condition of the patient.^{7,8}

In sub-Saharan countries, various studies have identified that there is grossly inadequate knowledge among nurses on pain management and assessment.⁹⁻¹¹ In Uganda, the ministry of health has developed a guideline on pain management and assessment through the Uganda Clinical Guidelines.¹² The World Health Organization (WHO) pain management protocol has been adopted by ministry of health; this involves assessment and following the analgesic ladder during pain management.¹² Regardless of these interventions, many patients in Uganda still experience pain.

Inadequate pain assessment and the resulting inadequate pain management among patients with cancer have been found to have serious physiological and psychological sequelae.^{1,2} Nurses require adequate knowledge, positive attitude, and good practices of pain assessment. Hospitals and policy makers need to design policies that foster effective pain assessment and management; this can only be properly achieved if there is evidence to guide policy and decision making.

Therefore, it is important to examine nurses' knowledge, attitude, and practices with regards to pain assessment among patients with cancer. Assessment is a vital step in building a ground for stratagems in proper pain management; thus, it guarantees patients' comfort and quality of life (QOL), and ultimately improves their practices.^{1,2} This study sought to assess the knowledge, attitude, and practices of pain assessment among nurses at Uganda Cancer Institute (UCI).

Methods

A cross-sectional study design was used to survey nurses at UCI located at Mulago National Referral Hospital, Kampala, Uganda.

Nurses who were officially employed by UCI and had worked at the institution for more than six months were eligible to

participate in the study. Those who were on vacation during the period of data collection were excluded from the study.

The researcher used simple random sampling methods to select the nurses for the study. The list of nurses employed by UCI was obtained from the directory and acted as the sampling frame.

Data was collected using a self-administered questionnaire. Nurses' knowledge and attitudes towards pain assessment and management were assessed using the nurses' knowledge and attitudes survey tool (NKAS-T).¹³ The NKAS-T has two sections: knowledge of pain assessment and management, and opinions about the adequacy of pain control in the work setting with nine items. The tool was modified and the final tool had 41 items: 16 items on knowledge section; 12 items on attitude section, and 13 items on practice section. Correctly answered items were scored 1, while incorrect and none respondents were assigned zero in the knowledge section. Total scores were summed and ranged from 0 to 16 for the knowledge scale for each participant. With regards to the attitude scale, positive attitudes were awarded 1, while negative/non respondents were awarded 0. The total score ranged from 0 to 12 for each participant. A socio-demographic form with five items was used to record the socio-demographic data of the nurses including age, gender, formal nursing education, experience, and clinical training in pain management. Nurses were informed and invited to participate in the study through the area managers of each ward and weekly meetings.

To estimate the sample size, the researcher used a simplified formula of determining sample size.¹⁴ A 95% confidence interval (CI) and $P = 0.05$ was assumed for the study. The estimated size was 67 out of approximately 100 nurses that were employed by the institute, and these nurses were invited to participate in the study.

Data collection was carried out from May to June 2017. The tool was pretested at Naguru hospital, Kampala City, using 20 participants. Tools were always checked by

the researcher for completeness, while entering the data immediately. Data was entered and analyzed using SPSS software (version 20, IBM Corporation, Armonk, NY, USA) with alpha = 0.05. In addition, informed consent was obtained from the participants at all times. Questionnaires were anonymous, and confidentiality was always observed.

Results

Participant characteristics: 67 nurses were selected to participate in the study, and they all fully completed the study, yielding a response rate of 100%. The majority of subjects were aged between 20 to 40 years (67.2%) with a mean age of 26 and standard deviation (SD) of 2.46. There were more women (61.2%) as compared to men (38.8%). Majority of the nurses had a diploma (28.3%) level of Ugandan education while the least had attained a doctorate (5.9%). Most nurses had 1 to 10 years of experience (38.8%), and the least had either one to two years or more than twenty years of experience (19.4%) (Table 1). Regarding duty shifts, most nurses preferred day shifts (34.3%) while the least worked evening-only shifts (19.4%). Majority of the nurses reported that they had received formal

training on pain assessment (89.6%) (Table 1).

Table 1. Demographic characteristics of the nurses (n = 67) at Uganda Cancer Institute (UCI), Kampala, Uganda, 2017

Variable	Categories	n (%)
Age (year)	20-40	45 (67.20)
	41-65	22 (32.80)
Gender	Men	26 (38.80)
	Women	41 (61.20)
Level of education	Certificate	13 (19.40)
	Diploma	19 (28.30)
	Degree	15 (22.40)
	Master	14 (20.90)
	Doctorate	4 (5.90)
Years of experience	Others	2 (2.98)
	Less than 1	13 (19.40)
	1-10	15 (38.80)
	11-20	26 (22.40)
Usual shift rotation	More than 20	13 (19.40)
	Day only	23 (34.30)
	Evening only	5 (7.60)
	Night only	17 (25.30)
Formal training on pain assessment	Rotating shifts	22 (32.80)
	Yes	60 (89.60)
	No	7 (10.40)

Nurses' knowledge of pain assessment and management: Majority of the respondents were able to give correct answers on different attributes about knowledge on pain assessment (Table 2).

Table 2. The knowledge related to assessment of pain in patients with cancer among nurses (n = 67) at Uganda Cancer Institute (UCI), Kampala, Uganda, 2017

Variable		n (%)
Indicators of patient's pain intensity	Correct answer	45 (67.20)
	Wrong answer	22 (32.80)
Children have limited memory of painful experiences	Correct answer	12 (17.90)
	Wrong answer	55 (82.10)
Patients who have been receiving stable doses of opioid for several months can hardly get respiratory depression	Correct answer	34 (50.70)
	Wrong answer	33 (49.30)
Giving together analgesics with different mechanism of action can bring about better relief of pain	Correct answer	17 (23.90)
	Wrong answer	50 (76.10)
1 to 2 mg of morphine, given IV, usually lasts between 4 to 5 hours.	Correct answer	32 (47.80)
	Wrong answer	35 (52.20)
Recent studies show that promethazine and hydroxyzine are dependable potentiators of opioid analgesics.	Correct answer	32 (47.80)
	Wrong answer	35 (52.20)
Morphine has a dose ceiling	Correct answer	49 (73.10)
	Wrong answer	18 (26.90)
If the cause of patient's pain is not known, opioid analgesics should not be given during pain management	Correct answer	34 (50.70)
	Wrong answer	33 (49.30)
After a single dose of an anticonvulsant is given, an optimum pain relief is achieved	Correct answer	13 (19.40)
	Wrong answer	54 (80.60)
Morphine administered IV has a time peak effect	Correct answer	17 (25.40)
	Wrong answer	50 (74.60)
Morphine administered orally has a time peak effect	Correct answer	45 (67.20)
	Wrong answer	22 (32.80)
If an opioid analgesic is stopped abruptly, a patient's physical dependence would be manifested by:	Correct answer	37 (55.20)
	Wrong answer	30 (44.80)
Which group of symptoms are more related to chronic pain	Correct answer	48 (71.60)
	Wrong answer	18 (28.40)

IV: Intravenously

Table 3. Attitudes related to pain assessment in patients with cancer among nurses (n = 67) of Uganda Cancer Institute (UCI), Kampala, Uganda 2017

Variable		n (%)
Do you at all times agree with patients self-report of pain?	Right attitude	17 (25.40)
	Wrong attitude	50 (74.60)
How important is a pain assessment tool?	Right attitude	49 (73.10)
	Wrong attitude	18 (26.90)
If patient's thoughts are distracted from pain, they usually do not suffer from severe pain	Right attitude	32 (47.80)
	Wrong attitude	35 (52.20)
Patients who have a history of substance abuse should not be given opioid	Right attitude	47 (23.90)
	Wrong attitude	52 (76.10)
Old patients are unable to put up with opioid analgesics for pain relief	Right attitude	15 (22.40)
	Wrong attitude	52 (77.60)
Before using an opioid analgesic, patients ought to be encouraged to withstand as much pain as possible	Right attitude	65 (97.00)
	Wrong attitude	2 (3.00)
Nurses should rely exclusively on the guardians/parents assessment to determine a child's pain intensity for children who are below eleven years of age	Right attitude	63 (94.02)
	Wrong attitude	4 (5.98)
Spiritual beliefs of a patient may determine how they respond to pain.	Right attitude	37 (55.20)
	Wrong attitude	30 (44.80)
Addiction is a chronic neuro-biological disease, characterized by behaviors that include one or more of the following: impaired control over drug use, compulsive use, continued use despite harm, and craving	Right attitude	34 (50.70)
	Wrong attitude	33 (49.30)

The average correct answer rate for the entire knowledge scale was 12 (range: 0-16 for each respondent), indicating good knowledge of pain management. Most respondents were able to tell indicators of pain intensity (67.2%), whilst 17.9% did not know that children often do not have memory of painful experiences.

Nurses' attitudes towards pain assessment and management: Majority of the respondents had a positive attitude towards pain assessment in patients with cancer as reflected in the table 3. Nurses' average attitude score for the entire attitude scale was 9 out of a total score of 12, indicating a positive attitude towards pain assessment and management.

Practices associated with pain assessment and management: Majority of the respondents (61.2%) reported that they use pain assessment tools to evaluate pain among patients. Those that use pain assessment tool used them occasionally (39.1%). Among other methods of pain assessment reported, patient observation was the most common method (41.8%) The most common assessment tool used was the verbal rating scale (32.8%) (Table 4).

Most respondents reported that they document outcomes after pain assessment

(94.0%), and they commonly assessed pain once every shift (35.8%). However, pain assessment findings were rarely discussed during nurses reports as reported by majority of the respondents (52.2%). Most of the respondents reported that they find it important to assess pain before initiating management (73.1%), and they commonly administer analgesics on moderate to severe pain experiences by the patient (56.7%). Nurses had good practice of the different delivery routes of morphine; most of them (67.1%) reported that five to six mg of intravenous (IV) morphine could effectively relieve pain instead of thirty mg of oral morphine (Table 4).

Discussion

Pain is a major health care concern in patients with cancer, and an integral part of nursing care. Therefore, adequate knowledge, positive attitude, and effective practices on assessment of pain are paramount. The response rate in this study was enough to effectively draw deductions on the research objectives. The Ugandan population is mainly constituted by people aged below 30 years;¹⁵ and indeed the mean age of the respondents in this study was 26 years.

Table 4. Practices related to pain assessment in patients with cancer among nurses (n = 67) of Uganda Cancer Institute (UCI), Kampala, Uganda 2017

Variable		n (%)
Do you use pain assessment tool?	Yes	41 (61.20)
	No	26 (38.80)
How often do you use pain assessment tools?	Always	12 (29.20)
	Frequently	13 (31.70)
	Occasionally	15 (39.10)
Please name the tool you use	Universal pain assessment tool	15 (22.40)
	Facial expression tool	18 (26.90)
	Verbal rating scale	22 (32.80)
	Others	12 (17.90)
If you do not use a pain assessment tool, what method do you use to assess pain?	Observing the patient	28 (41.80)
	Estimating By experience	17 (25.40)
	Using water for injection	22 (32.80)
Do you document outcomes after assessing patients' pain?	Yes	63 (94.02)
	No	4 (5.98)
If yes, how often do you assess and document pain for a patient who is able to report pain?	Whenever necessary	13 (19.40)
	1–4 hourly	15 (22.30)
	Once every shift	24 (35.80)
	Less than one hourly	11 (16.40)
Are pain ratings and management discussed during nurse to nurse report?	More than 4–8 hourly	7 (10.40)
	Yes	32 (47.80)
Assessing pain before initiating management is very important	No	35 (52.20)
	Yes	49 (73.10)
Analgesics given to patients with cancer to relieve their pain initially ought to be given	No	18 (26.90)
	On a fixed schedule	13 (19.40)
	On patient's demand	16 (23.90)
Opioid analgesics should be given to patients with severe pain of abrupt onset such as trauma or pain.	On moderate/severe pain	38 (56.70)
	Intravenously	13 (19.40)
	Intramuscularly	19 (28.30)
	Subcutaneously	15 (22.40)
	Orally	14 (20.90)
How much (mg) IV morphine, administered for a period of 4 hours, would be the same as thirty mg of morphine given orally every four hours?	Rectally	6 (8.90)
	Five	22 (32.80)
	Ten	5 (7.60)
	Thirty	17 (25.30)
	Six	23 (34.30)

IV: Intravenous

Women are the majority of the nursing workforce in Uganda, and most of the nurses have certificate (nursing enrollment) and nursing diploma education. Indeed, women and nurses with a diploma of nursing education constituted the majority in our study.

These aspects could draw generalizable conclusions with regards to the study findings. However, owing to the small sample size and other limitations discussed in later paragraphs, generalizing the study findings to the entire nurses' population in Uganda should be done with caution.

In this study majority of the nurses had good knowledge on pain assessment. This

could be attributed to experience and training on pain management; indeed, majority of the nurse reported that they had ever undergone through some training on pain assessment and management. Nurses contribute to the largest health work force in Uganda, and spend more time with the patients. Therefore, they need adequate knowledge, a positive attitude, and good practice of pain assessment.

Findings of this study differ from those indicating that nurses and other health workers lack adequate knowledge about pain, underestimate pain, provide inadequate analgesia, and document pain infrequently.^{11,16}

Knowledge deficits regarding pain assessment principles has been cited as one of the barriers to optimal pain management among patients with cancer, and oncology nurses recognition of lacking adequate pain assessment knowledge has been considered a key step towards improvement of pain management.^{4,5,11} It is, therefore, recommended that nurses and other health professionals engage in continuous professional development programs on pain assessment and use of pain assessment tools.⁵

On the other hand, findings of this study are similar to those of some other studies that have indicated that in some settings nurses have got adequate knowledge on assessing and managing pain.¹⁶

Attitude always determines one's motivation to do an action; a positive attitude towards a given action will oftentimes lead to action. This has been reported in regards to pain assessment among nurses across various studies.⁶

In this study, majority of the respondents had a positive attitude towards pain assessment. This could partly be explained by possessing knowledge on pain as well as experience. On one hand, findings of the present study are contrary to those indicated in various studies demonstrating negative attitude.¹⁶ Negative attitudes are attributed to replication of understaffing and excess workload which does not give opportunity for improving the quality of nursing care. However, effective assessment and management of pain can be limited by cultural beliefs and social attitudes.¹⁷

Various factors contribute to nurses' attitude in relation to pain management practices. Their past experience to pain and analgesia use was found to be an essential aspect in changing their attitudes. This was researched to help in achieving optimum pain management outcome during their practice.^{6,16} The key principles in pain assessment include the use of standardized tools to assess pain and evaluating the effectiveness of interventions targeted to individual patients' needs as with regards to pain relief.

Various methods of pain assessment were reported by nurses in this study. Indeed, pain has both subjective and objective components that can be used in assessing pain.^{7,8} Findings of the present study indicated that majority of the respondents use pain assessment tools for evaluation. Without these tools, nursing staff can only rely on their clinical judgment, which may be influenced by many of the preconceptions and attitudes about patients in pain.¹⁶

Absence of organizational procedures as well as strategies on assessment of pain has been quoted to hinder appropriate management.^{1,2}

Effective pain management begins with proper pain assessment and use of standardized tools; this helps in evaluation of efficiency of the intercessions directed towards individualized needs of patients in relation to relief from pain. If the tools are not used, nurses depend solely on their clinical judgment and this is possibly prejudiced by several notions and attitudes about the pain that the patients are in. In sequence, this affects the outcomes of the patients as almost all the managements are centered on the nurses' pain ratings.

The most common assessment tool used in this study was the verbal rating scale. Similarly, other commonly used scales reported across studies include: the verbal rating scale, visual analog scale, and the numerical rating scale.^{6,17} The choice of pain assessment tools could be explained by the difference in knowledge on the tool, availability, and patient factors.

Those who use pain assessment tools used them occasionally, while others used patient observation. Indeed, there are other approaches that can be used for pain assessment including; self-report, vital signs and various pain behaviors.^{7,8} Patient observation can be used to assess pain and it provides objective data; however, it is limited by various factors such as patient factors. Behavioral signs can be used in conjunction with other methods and should not be substituted for a self-report as long as the

patient can communicate in any way.⁸

Documentation was reported by majority of the subjects in this study. Pain is indeed considered as another vital sign, and pain assessment with other routinely documented vital signs may help to ensure that pain is assessed and controlled for in all patients on a regular basis. However, pain assessment findings are rarely discussed during nurses reports as reported by majority of the respondents.

Many studies have been done to assess how nurses working on cancer units assess patient's pain. Findings of our study differ from those of Bucknall et al.'s¹⁸ which revealed that assessment tools were only used in less than 9% of the cases.¹⁸

In this study, nurses reported that they find it important to assess pain before initiating management, and they commonly administer analgesics on moderate to severe pain experiences by the patient. Indeed, various nursing and medical procedures inflict some level of pain on the patient, and it is necessary to assess and manage pain before applying the procedures.

This study provides useful information on nurses' knowledge, attitude, and practices on pain assessment; however, it has some limitations. The study setting is a model center for cancer treatment in Uganda and East Africa with better facilitation than other centers; therefore; it has more opportunities of continuous professional development for its employees compared to other centers on aspects such as pain management. This makes the setting quite different from other centers that provide cancer care in resource limited parts of the country; thus, these findings might not be generalizable to the entire population of nurses in the country who encounter patients with cancer.

Conclusion

Drawing from the results, the study

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highlighted good knowledge, positive attitude and practices towards assessment of pain among nurses at UCI. These are good indicators that nurses have the capacity to assess pain among patients receiving care at the facility. We further recommend continuous professional development to maintain or even improve the practices and knowledge of pain assessment among nurses.

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Authors' Contribution

Both authors took part in conception, design, collection of data, and final version of the manuscript. Frank Kiwanuka was involved in literature review, data analysis and writing the manuscript, while Ronald Masaba was involved in methodology and writing the manuscript.

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Conflict of Interest

Authors have no conflict of interest.

Ethical Approval

This study was approved by the Research and Ethical Committee of International Health Sciences University and the Institutional review board of UCI.

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