

Identifying Training Needs in Pain Management—A Survey of Staff at a Tertiary Cancer Care Centre

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Abstract

Pain is one of the most common and distressing symptoms experienced by cancer patients and can cause significant physical and psychological complications for patients and their families. Adequate pain management requires an understanding of pain, its assessment, and the use of analgesics according to the WHO analgesic ladder; information that is often lacking in routine medical education. Understanding the level of knowledge, attitudes and practices of clinicians who treat cancer pain can help us prepare relevant educational programs to address this need. A cross-sectional descriptive study was conducted among randomly selected eligible clinical staff using self-administered questionnaires that contained close-ended and open-ended questions testing factual knowledge on pain, attitudes towards pain management, and practices related to pain management and opioid use. Results were analyzed using SPSS Version 28. Of 66 participants of this study, 78% were female and 65% were nurses. Only 10% had received any additional training in pain management. Knowledge on pain was found to be adequate in some areas, but deficient in others such as “types of pain” and “adjuvant drugs” (35% and 26% respectively). A significant proportion of responses (73%) showed incorrect attitudes towards pain and opioid use. Recommended practices such as prescribing laxatives with opioids were prevalent (72%), however using a tool to assess pain or the WHO ladder to prescribe analgesics was not as common. The results of this study show that despite being a key component of clinical care, pain management is not adequately understood by many clinicians. Gaps in knowledge, and incorrect attitudes could contribute to inadequate pain management for patients. This study provides valuable information for an educational workshop planned on pain management.

Keywords

Pain, Knowledge, Training

1. Introduction

Pain is one of the most common and distressing symptoms experienced by cancer patients and becomes increasingly significant in advanced disease. Pain causes suffering, resulting in significant psychological and social impact on the patient and his/her family and loved ones.

Being a subjective symptom, pain is often under-diagnosed by clinicians and is further complicated by psychological, social and spiritual dimensions, making it a complex need that requires careful assessment and an insightful treatment strategy.

Inadequately managed pain can lead to significant adverse outcomes-both physical, and psychological, for patients and their families. Continuous unrelieved pain has been linked to continuous negative sympathetic stimulation of multiple organ systems, with resultant complications, while anxiety, depression and hopelessness are among the common psychological sequelae of chronic pain [1].

Recognizing and acknowledging the presence of pain is the first step towards its management. Unfortunately, patients are often reluctant to report chronic pain unless specifically asked for it during their assessment. Health care workers too often overlook inquiring about pain and/or assessing for it, which leads to underdiagnosis and treatment. It is known however that when approached by an accurate diagnosis, frequent assessment and an understanding of the uses of analgesics, the majority of cancer related pain can be effectively controlled even in low resource settings. Training of staff working with cancer patients forms an important part of this process.

2. Literature Review

The burden of morbidity and mortality from cancer is increasing globally, with more than 19 million new cases of cancer diagnosed globally and 9.9 million deaths from cancer in 2020 according to the International Agency for Research in Cancer [2]. Although high income countries (HICs) have overall higher cancer incidence rates, according to WHO statistics, 70% of these are now occurring in the developing world [3] usually presenting with advanced disease that makes their management a challenge in the face of inadequate resources for diagnosis and treatment. The financial, social and psychological impact of cancer on the developing world is therefore profound.

Tanzania is an example of a resource-poor country which is straining under the burden of mortality and morbidity caused by cancer. The number of cancer patients treated in the country is reported to have increased thirty fold over the last two decades [4]. It is estimated that more than 40,000 new cases of cancer

occurred in Tanzania in the year 2020 [5]. Only a small fraction of these present to cancer treatment centres such as Ocean Road Cancer Institute (ORCI) which received around 6000 new cancer cases that year. It is believed that a large proportion of such patients die without access to diagnosis, treatment, or even palliative care such as pain relief.

Pain is one of the most feared, yet commonly experienced symptoms of advanced cancer. It is defined as an “unpleasant sensory and emotional experience associated with actual or potential tissue damage”. Most cancer patients experience pain, which can range from moderate to severe in intensity [6], and can be caused by the disease itself, cancer treatment or a combination of factors.

The significant physical, psychological and social implications of unrelieved pain make the acknowledgement and treatment of chronic pain a priority in improving the quality of life of cancer patients. Amongst the most significant barriers in pain management are the patient’s reluctance to report pain, or its underestimation or inadequate assessment by health care workers. A variety of pain assessment tools have been developed that are simple and easy to use; an accurate assessment of pain can easily be carried out by health care workers who have the skills to use them [7]. These tools have been repeatedly tested and validated in various health care settings and found to be effective and accurate when used correctly. Moreover, they can be easily adapted to suit different languages and cultures [8].

Managing Pain

Most cancer-related pain responds well to pharmacological treatment using analgesics and other additional medication, and pain management using oral analgesics and adjuvants is an important role that health care staff undertakes as part of their care of cancer patients. Currently, the world Health Organization (WHO)’s “analgesic ladder” provides a framework to the management of pain using a “step-wise” approach to the use of analgesic drugs, and if used correctly, can help to control pain in up to 70% of cancer patients [1] [6] [9].

Caring for patients with cancer requires special skills which are developed gradually through the vigorous training and exposure required of curricula in oncology. While palliative medicine, which incorporates pain management, has grown into a specialty, it is unfortunate that most formal training in oncology does not incorporate the management of this very essential symptom which is often considered the “fifth vital sign” in medicine. Several studies carried out in various parts of the world have confirmed the fact that undergraduate training in medicine lacks adequate exposure in this area, that doctors and nurses generally lack the competence and confidence to correctly manage pain, and that even well-trained oncologists often learn about pain and palliative care through “trial and error” [10] [11] [12].

In Tanzania, which faces additional challenges of resources in health care and training, it is expected that this deficiency of skills among doctors and nurses is

likely to be compounded. This has even greater implications for the patients here, since adequate pain management is often one of the few services that can be offered in advanced disease settings.

Management of cancer related pain is an important skill that requires knowledge of types, doses and effects of analgesics, and an understanding of the WHO's analgesic ladder. At ORCI various levels of analgesics are available and are widely prescribed and administered by doctors and nurses, who often have had little or no formal training in this area. Additionally, we currently have no information about the level of skills of clinicians involved in the prescription and administration of these analgesics.

Training clinicians in the management of pain is an important yet achievable goal. Most doctors and nurses are familiar with the basic pharmacological aspects of the drug groups used in the management of mild to moderate pain. Additional training in pain assessment, understanding of the use of opioids, their prescription and side effects, and the use of adjuvant drugs in managing moderate to severe pain will equip them with the tools to competently manage pain and provide much-needed relief to cancer patients.

This study was conducted to assess knowledge and practices related to pain management among doctors and nurses at ORCI. The study aimed to bring to light areas of deficiency in the awareness and skills relating to the pain management among staff in order to plan appropriate training and educational interventions to strengthen their knowledge, attitudes and practices in pain management for cancer patients.

3. Materials and Methods

This was a descriptive cross-sectional study conducted at ORCI in Tanzania. ORCI is the National Cancer Referral Centre and provides oncology services to patients from around the country. Clinical staff who practice at ORCI, including medical doctors (both MDs and specialists such as oncologists) and nurses (diploma level, undergraduate and postgraduate degree) interact most often with patients and are involved in making decisions, and providing information or support relating to pain management. Pharmacists and radiation therapists are involved to a lesser extent in patient care.

This study was conducted among randomly selected and eligible clinical staff, pharmacists and therapists who are directly involved in the treatment and care of patients at the Institute. Staff whose primary roles were other than patient care (such as administrative) were excluded. Participants who consented were provided with clear instructions that specifically requested them to respond from their own knowledge and practice and avoid checking up the answers or answering on "what they should do" in place of "what they do".

Data was collected using a self-administered questionnaire in English and included demographic information and questions on knowledge, attitudes and practices related to pain management in separate sections. Questions testing know-

ledge asked for factual information related to pain assessment and treatment; a few questions were specifically designed to test for attitudes related to pain management. Questions were adapted from a previously published tool “The Knowledge and Attitudes Survey Regarding Pain” that was developed and validated for educational programs on pain management [13].

A separate section assessing behaviour asked participants to choose “Always”, “Usually”, “Sometimes” or “Never” in response to five questions focusing on what they do in relation to pain management. The final section had open-ended questions asking participants to list types of pain, pain assessment methods and methods used to assess pain. Descriptive statistics were used to summarize and present data using SPSS version 28.

Ethical clearance to conduct this study was received from the Institutional Academic, Research, Publications and Ethics Committee at ORCI.

4. Results

66 completed questionnaires were returned and used in the final analysis. The sociodemographic characteristics of respondents are summarized in **Table 1**. The average age of respondents was 34 years (range 22 - 59 years). 46 (70%) were females. More than half of participants were trained at certificate or diploma level, and nursing was the highest (65%) represented specialty, with 27% of respondents being doctors (registrars, residents and specialists). 64% of respondents were stationed in clinical sections (including OPD, wards and chemotherapy), and 29% had less than a year’s duration of service at the Institute. Only 12 (18%) had received any additional training in pain management.

The results of assessment of awareness and attitudes towards pain management are summarized in **Table 2**. 61% of respondents believed that vital signs are good indicators of pain intensity, with 73% agreeing that patients should endure as much pain as possible before using opioids. Interestingly, 32% felt that the most accurate judge for pain intensity is the patient’s primary nurse.

In assessing factual knowledge about types of pain and its treatment, respondents were asked to list types of pain, adjuvant drugs used in pain management, methods for assessing pain, and questions regarding combining analgesics and titrating opioids to achieve optimal pain control. While a good proportion of patients correctly responded to questions on combining analgesics and titrating opioids (82% and 70% respectively), only 35% correctly listed types of pain, and only 26% correctly listed adjuvant drugs. These responses are summarized in **Figure 1**.

Figure 2 summarizes respondents practices relating to managing pain. While the practice of “Asking about pain” and “Prescribing laxatives together with morphine” was relatively prevalent—with 72% “Always” or “Usually” asking about pain, and 70% “Always” or “Usually” prescribing a laxative, the use of a tool to assess severity of pain, or the WHO ladder to guide pain management was not as common.

Table 1. Sociodemographic characteristics of participants.

	Characteristic	Frequency (n = 66)	Percentage
Gender	Female	46	70
	Male	20	30
Training			
Highest Level	Certificate/Diploma	34	52
	Undergraduate	24	36
	Postgraduate	8	12
Specialty	Nursing	43	65
	Pharmacy	5	8
	Medicine	18	27
Duration in service			
	<1 year	19	29
	1 year to 5 years	24	36
	5 years to 10 years	13	20
	>10 years	10	15
Current work station			
	Clinical	42	64
	Pharmacy	8	12
	Palliative Care	11	17
	Radiotherapy	2	3
	Cancer Prevention	3	4
Training in pain management			
	Yes	12	18
	No	54	82

5. Discussion

This descriptive study provides a broad understanding about knowledge and practices related to pain management among staff at our centre. Our results revealed limited awareness about pain awareness, its signs and assessment, and poor translation of knowledge into practice, which is in keeping with findings from other studies previously cited. This situation is known to be contributed greatly by the lack of integration of pain management training in medical and nursing curricula, since only 18% of respondents received any specific training in pain management, despite the fact that 65% of them were relatively younger with less than 5 years in service. Studies conducted among medical students in the Phillipines and surgical residents in Nigeria have highlighted similar concerns; students consistently showed a lack of confidence and competence in assessing pain, using opioids and changing pain management strategies according to patient presentation [11] [14]. A recent study conducted in Ghana among nurses in a tertiary hospital found that the most reported barriers to pediatric

Table 2. Awareness of and attitudes towards pain management among participants.

Statement	Participants' Responses		
	Frequency (n = 66)	Percentage	
Vital signs are good indicators of pain intensity	Yes	40	61
	No	26	39
Patients may sleep in spite of severe pain	Yes	20	30
	No	46	70
Patients should endure as much pain as possible before using opioids	Yes	48	73
	No	18	27
Placebo can help determine if pain is real	Yes	39	59
	No	26	41
Reasons for increased doses of pain medication	Patient experiencing increasing pain	51	77
	Patient experiencing anxiety or depression	4	6
	Patient requesting staff attention	2	3
	Related to addiction	9	14
The most accurate judge for pain intensity	The patient	38	58
	The treating Physician	4	6
	Patient's primary nurse	21	32
	The pharmacist	1	1.5
	The spouse/family	2	3

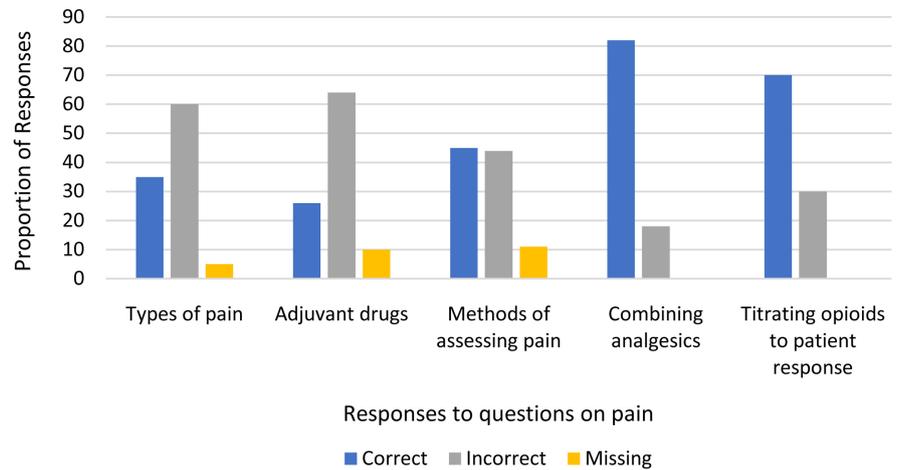


Figure 1. Participants' responses to open ended questions on pain.

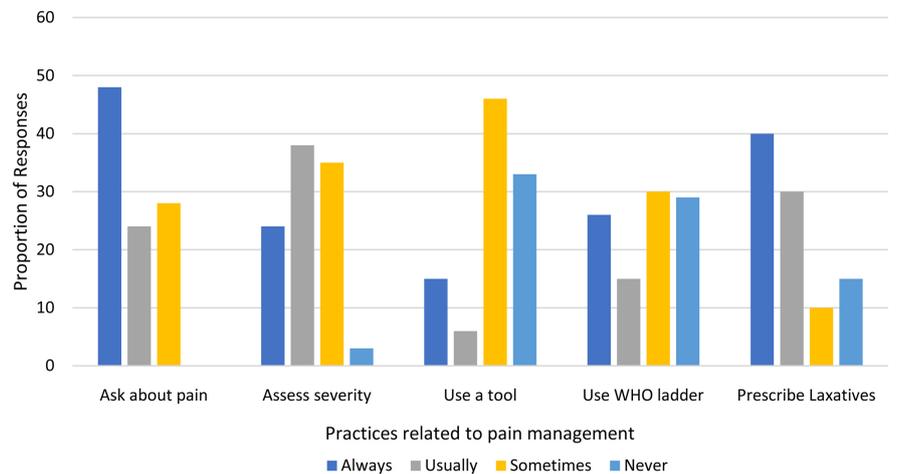


Figure 2. Participants' practices related to pain management.

pain management were insufficient knowledge, inadequate pain management tools and inadequate staffing [15].

Incorrect attitudes towards pain and anxiety about the use of opioids have been found to contribute significantly towards poor pain management. There was a significant level of incorrect attitudes towards pain and opioid use shown in our study, which could lead to questioning patients' reports of pain or a delay in initiating opioid treatment, a concern which has been found in many studies around the world. Jacobsen *et al.* describe physician related barriers to cancer pain management with opioid analgesics, which include concerns about side effects and their management [16]. In a systematic review on the attitudes and knowledge of professionals, patients, caregivers and public [17], Makhoul *et al.* conclude that "lack of knowledge and negative attitudes towards cancer pain and analgesia among professionals, patients and family caregivers are reported as one of the most common barriers to effective cancer pain management". Similar findings were reported in a large survey done among physicians in Korea, where participants showed a negative attitude towards and hesitancy in prescribing

opioids [18].

There is a need to empower nurses who usually provide the most care to patients, and who were the most represented specialty in our study. At this Institute, nurses are recruited at different levels of training; the majority being at Diploma level. Content on oncology specific care, palliative care and pain management are usually not included in basic nursing training curricula; most nurses acquire this knowledge and skills “on the job” while caring for cancer patients. Previously, a small proportion of nurses got opportunities to participate in such training either at home or via on-line courses. There is now a movement to increase educational opportunities in these areas for all employed nursing staff.

In many parts of the world, improvements in knowledge about pain have been noted among nurses, although important deficits in understanding pain and its management among this group of providers still contribute to inadequate pain relief in patients [19]. The situation may be different for nurses in resource-limited settings; Access to educational interventions is much more limited here, and particularly for nurses who may get the least opportunities to participate in training sessions. A feasible solution would be to include basic pain management into nurses training curricula. Herr et al argue that embedding core-level competencies in pain management into nursing education is crucial, and can act as a foundation on which clinical practices can later be honed [20].

The challenge of linking knowledge to practice has been an important discussion in medical curricula and is relevant as there is a move to develop pain management modules and workshops for students and staff. There are varying views on whether education and training can have the necessary impact on improving patients’ pain. In a review of educational interventions to improve cancer pain control, Allard *et al.* report that while educational interventions can successfully improve cancer pain knowledge and attitudes of health care professionals, they do not have much impact on patients’ pain levels. The review suggests brief nursing interventions in combination with a pain diary to manage pain better [21]. However, Paneduro *et al.* report on an initiative to develop and implement pain management and palliative care educational seminar for medical students and conclude that “a high quality educational seminar using interactive and case-based instruction can enhance student’ knowledge of pain management and palliative care” [22].

Adequate pain management requires skills and behaviours associated with pain relief that go beyond knowledge alone and require a system change [12]. Our study showed certain practices (asking about pain, prescribing laxatives) that were more prevalent than other equally important practices such as assessing pain or using the WHO ladder, suggesting that this could be related to a culture of prescribing or practicing without knowing reasons behind the decisions made. Educational interventions thus need to consider the whole circle of management in order to effectively change attitudes and practices.

6. Conclusion

Despite being a key component of clinical care, pain management is not adequately understood and practiced by many clinicians at our centre. Our study showed important gaps in the knowledge about pain, its assessment and management. There are many negative conceptions and attitudes towards pain and opioid use which could act as barriers to effective pain management in cancer patients. Certain practices such as prescribing laxatives together with opioids are well established, whereas others such as using a pain assessment tool need to be implemented more rigorously. This study provides valuable information for an educational workshop planned on pain management.

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Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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