AJMB AN OPEN ACCESS JOURNAL
eISSN: 2600-8173
https://doi.org/10.37231/ajmb.2022.6.2.48
https://journal.unisza.edu.my/ajmb
PENERBIT Universiti Sultan Zainal Abidin

Asian Journal of Medicine and Biomedicine

Knowledge, Attitude, Practice and Perceived Barriers on Palliative Care Pain Management among the Physicians in Northeast Malaysia

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Received: 20 August 2022 Accepted: 25 November 2022 Published: 30 November 2022

Abstract

Healthcare providers' knowledge and attitude on cancer pain control remain a debatable topic. The study aims to determine the knowledge, attitude, practice and perceived barriers among the healthcare providers in delivering effective analgesic in palliative care. A cross-sectional study was conducted among the specialists and post-graduate students from the medical and surgical programme using the convenience sampling method. A set of questionnaires related to the pain management in palliative patients was distributed. The questionnaire covered demographic characteristics, knowledge, attitudes, practice, and perceived barrier regarding cancer pain management. A total of 300 questionnaires were analysed with 75% response rate. About two-third (66.3%) of the respondents have knowledge deficit to prescribe opioids in pain management of palliative care patients. The medical specialty and lacking pain management training were significant factors associated with knowledge deficit. About half (48.3%) of the respondents thought that cancer pain therapy could be satisfactorily achieved as an outcome and 58.7% respondents admitting to practice daily pain assessment in patients with cancer. The main perceived barriers in managing pain for palliative patients were inadequate pain assessment (71.2%) and inadequate staff knowledge (53.6%). The knowledge differences among the different medical specialties and lack of pain management training have significantly impacted the pain management in palliative patients. A targeted educational strategy for pain management in palliative care patients is needed to improve physicians' knowledge and clinical practice.

Keywords
Attitude, knowledge, pain management, palliative care, practice.

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Introduction

Pain is a vital aspect in managing patients requiring palliative care. In cancer patients, it can be as a result of tissue damage, cancer infiltration or pressure by the rapidly growing tumour mass on the nervous system. International Association for the Study of Pain (IASP) defined pain as an unpleasant emotional and sensory experience that is associated with potential and actual tissue damage with an emphasis and focus on patient's pain experience [1]. Pain is a very prominent and distressful symptom in patients presenting at the end of life. Its prevalence is over 70-90% in cancer population with advanced disease and would warrant opioids use to achieve symptoms control [2].

With the appropriate pain medication and intervention, 80-90% of the cancer pain can be controlled. However, pain is still inadequately addressed in an estimated 50 – 60 % of patients [3,4,5]. In Malaysia, palliative care needs grew 40% from 71 675 cases in 2004 to 100 034 cases in 2014. It is anticipated the population needs to be at least 239 713 cases (240% growth from 2014), with the highest needs among age group ≥80-year-old in both genders [6]. The proportion of palliative care needs in relation to deaths hovered at 71% in the observed year [7]. Poor cancer pain management are due to factors related to under-dosage of medications, insufficient intake scheduling, and prescription hesitancy towards using a strong opioid [8].

Most studies were done in China, Taiwan and Korea noted knowledge deficit among the physicians that deal with palliative and cancer pain management [3,4,5,7]. One study in US even reported that cancer pain was not adequately addressed even among the medical oncologist [9]. Knowledge deficit typically seen when there was exaggerated fear of the additive nature of opioids or the potential side effect of the drug leading to respiratory depression. Other issues were related to specific knowledge on equianalgesic opioid dosages, adjuvant analgesics, the pain rating scale, and the ceiling effect concern on opioids use.

Cancer pain control is an essential skill needed to be practice among the practicing physicians. Inadequately addressing pain especially in palliative care patients would have led to poor symptom management and suffering. In this study we assess the knowledge, attitude, practice, and perceived barriers regarding pain management in palliative care among the healthcare providers in order to identify factors that could be improved for future practice.

Methodology

Study design, participants, and procedures

This cross-sectional study was conducted at a university hospital located at the northeast of Peninsular of Malaysia, from February to April 2021. Hospital Universiti Sains Malaysia (USM) is a busy tertiary centre with more than 730 bedded, covering referrals for different specialties for the management of complex patients originating from the east coast regions. Respondents from various departments namely Anaesthesiology, Paediatric, Emergency Department, Surgery, Family Medicine, Neurosurgery, Orthopaedic, Medical, Obstetrics and Gynaecology, Oncology and Otorhinolaryngology departments were invited to participate in the study. A cover letter about the study was sent to the department's representatives and they were requested to disseminate of questionnaires to the members of each department. Invitation to other respective members in each department was made through the social media platform and the link was given to the questionnaire built on the google form platform. Consent is considered taken after respondents have read the study explanation and click to answer the next page questionnaires. The study inclusion criteria include those healthcare providers (Clinical Specialists, Medical officers, and Master Students) who have been working at Hospital USM and have had previous exposure to palliative care and terminally ill patient's care for more than 6 months. Those with minimal palliative care medical experience (defined as less than 6 months) were excluded. To increase the response rate, the researcher would request the department representative to re-circulate the invitation link after 2 weeks after the initial invitation.

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Questionnaire development

The questionnaire was taken from Zhang et al [3,7], which has been validated with coefficient alpha was 0.81 for the knowledge scale and 0.8 for attitude scale. It consisted of 6 items regarding healthcare providers' demographics and their background characteristics. There were 8 items on the knowledge in palliative care pain. A 5-point Likert responses format to this item were structured by a scale ranging from 1 (strongly agree) to 5 (strongly disagree) for negatively worded questions and from 5 to 1 for positively worded questions. There were 6 items in attitude towards palliative care pain management, 7 items regarding practice of palliative care pain and 1 item regarding perceived barriers to physician regarding palliative care pain management (1 item).

Data Analysis

Descriptive statistics (frequencies and percentages) were used to describe the respondents' characteristics. For statistical analysis, categorical data was presented as frequency and percentage while numerical data was presented as mean and standard deviation (SD). Logistic regression test used to analyse predictive factors associated with poor knowledge to cancer pain management.

The respondents' knowledge was classified according to Zhang et al [3,7] in which mean score with less or equal 3 was considered as "knowledge deficits to cancer pain management." Descriptive analysis also was performed to describe attitude and perceived barriers to cancer pain management. For multiple-choice questions, the percentage of responses to each item were calculated. Logistic regression test was used to analyse factors associated with poor knowledge of cancer pain management. The significance level was set to $P<0.05$. Statistical analyses were performed using SPSS software version 26.

Ethics

This study has been approved by Hospital USM and Human Research Ethical Committee, USM (USM/JEPeM/20080436).

Result

We distributed 400 questionnaires among the physicians based at Hospital USM. Out of that, 300 of them responded to the questionnaire which gave 75 % of the response rate from the studied population.

Sample characteristic

The demographic characteristics of the 300 respondents were summarised in Table 1. There were predominantly female (62%) participants, of which 27% were from anaesthesiology background, followed by medical department (12.7 %). There were 9.3% of the participants had more than 10-year experience in their own field. In term of level of education, 61% were trainees (master programme or medical officer) while 39% of the remaining had already completed the specialist training.

Knowledge toward palliative care pain management.

Physicians' response toward knowledge is shown in Figure 1 where majority (66.3%) have knowledge deficit in pain management of palliative care patients. The mean knowledge was 23.36 (SD 3.86). Factors associated with knowledge deficit are shown in Table 2.

Attitude toward palliative care pain management

Less than half (48.3%) of the physicians believed that 51-75% patients could achieve satisfactory control in cancer pain therapy. About half (50.3%) of the participants thought the liberal use of analgesics for patients with cancer and only 14.3% of the conservative was conservative on the use of analgesics. Table 3 summarised the detail regarding attitude of the respondents toward palliative care pain management in Hospital USM.

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Table 1: Demographic Characteristic of participants (N=300).

Variable		n	(%)
Gender			
	Male	114	38.0
	Female	186	62.0
Age			
	< 35 years	146	48.7
	≥ 35 years	154	51.3
Department			
	Anaesthesiology	81	27.0
	Paediatric	18	6.0
	ED	27	9.0
	Surgery	29	9.7
	Family Medicine	20	6.7
	Neurosurgery	13	4.3
	Orthopaedic	22	7.3
	Medical	38	12.7
	O&G	20	6.7
	Oncology	11	3.7
	ENT	21	7.0
Level of Education			
	Degree	183	61.0
	Master	117	39.0
Experience in Cancer Care			
	1-5 years	167	55.7
	5-10 years	105	35.0
	More than 10 years	28	9.3
Participation in A Pain Management Training Program			
	Yes	103	34.3
	No	197	65.7

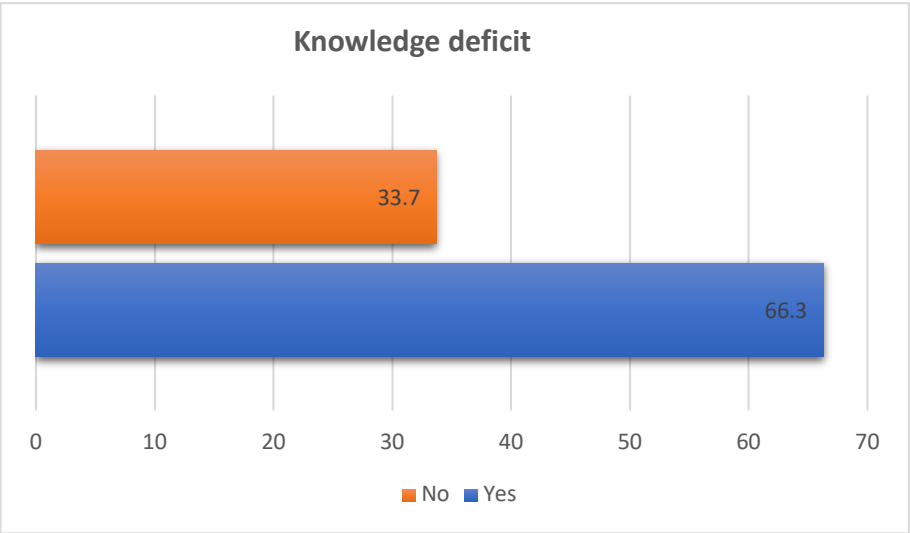

Figure 1: Knowledge deficit among the healthcare providers.

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Practice regarding palliative care pain management

There was 58.7% of the physicians' who practice pain assessment every day, 56.3% only managed less than 25% patients with cancer pain and only 14.3% of them using with psychologist to manage pain. Most participants (89%) practice by informing their patients about side effect of opioids. Summary about the practice is shown in Table 4.

Table 2: Factors Associated with knowledge deficits using Logistic Regression.

Variables		Odd Ratio (OR)	(95 % Confidence Interval, CI)		p-value*
Age					
	< 35 years	0.84	0.52,	1.36	0.490
	≥ 35 years	1			
Gender					
	Male	1			
	Female	1.18	0.72,	1.93	0.510
Department					
	Anaesthesiology	1			
	Paediatric	0.54	0.17,	1.77	0.311
	ED	0.42	0.16,	1.12	0.083
	Surgery	0.55	0.20,	1.49	0.238
	Family Medicine	0.31	0.11,	0.91	0.033
	Neurosurgery	0.33	0.10,	1.18	0.088
	Orthopaedic	0.17	0.06,	0.48	0.001
	Medical	0.17	0.07,	0.40	<0.001
	O&G	0.31	0.11,	0.91	0.033
	ENT	0.28	0.10,	0.79	0.016
	Oncology	0.94	0.18,	4.83	0.941
Level of Education					
	Degree	0.71	0.43,	1.17	0.178
	Master	1			
Experience in Cancer Care					
	1-5 years	0.45	0.17,	1.17	0.102
	5-10 years	0.622	0.23,	1.68	0.349
Participation in A Pain Management Training Program					
	Yes	1			
	No	0.51	0.30,	0.87	0.014

**Logistic Regression*

Perceived barriers among healthcare providers toward palliative care pain management

Respondents were asked on their thought related to potential barriers regarding palliative care pain management in their department. They were allowed to answer more than 1 answer in this section. Most of the respondents (71.2%) believed that the inadequate assessment of pain and pain management were the potential barriers. The second potential barriers toward cancer pain were inadequate staffs' knowledge in pain management. Other potential barrier that was included in the questionnaire were lack of staff time to attend to patients' needs, lack of access to different opioid types, medical staff reluctance to administer opioids, patient or family reluctance to report pain and patient inability to pay for analgesic. The result was shown in Table 5.

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Table 3: Attitude among the Healthcare providers (N = 300).

Question		n	(%)
1.	In what percentage of patients do you think cancer pain therapy can achieve a satisfactory outcome?		
	0 - 25%	8	2.7
	26 - 50%	75	25.0
	51 - 75%	145	48.3
	76 - 100%	49	16.3
	Do not know	23	7.7
2.	In your experience, in what percentage of patients does pain therapy actually achieve a satisfactory outcome?		
	0 - 25%	11	3.7
	26 - 50%	119	39.7
	51 - 75%	129	43.0
	76 - 100%	28	9.3
	Do not know	13	4.3
3.	Compared with your professional peers, how conservative or liberal are you concerning the use of analgesics for patients with cancer?		
	Much more or somewhat conservative	43	14.3
	Somewhat more or much more liberal	151	50.3
	No more conservative or liberal	106	35.4
4.	In your practice, how much of priority is the management of pain compared with the treatment of cancer and its complications?		
	Less of a priority	8	2.7
	Almost equal	155	51.7
	As much of a priority	137	45.6
5.	What concerns you most about the use of opioids for cancer pain when you make a prescription?		
	Patient safety	229	75.8
	Difficulty in controlling severe side effects	45	14.9
	Patient or family fear of narcotics	14	4.6
	Insufficient literature to support dosage decision	3	1.0
	Cost to the patient/family	3	1.0
	Regulatory investigation for narcotic prescription	5	1.7
	Diversion of drug(s) to illegal market	3	1.0
6.	Which of the following to you consider to be urgently needed knowledge for the management of cancer pain?		
	Assessment of the cause of pain	151	50
	Assessment of the severity of pain	239	79.1
	Use of non-opioid analgesics for mild pain	82	27.2
	Management of somnolence or confusion in patients receiving opioids	71	23.5
	Management of nausea in patients receiving opioids	88	29.1
	Selection of an initial opioid dose	86	28.5
	Titration of opioid doses in patients with poor pain control	122	40.4
	Management of postoperative pain	71	23.5

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	Management of procedural pain	54	17.9
	Management of bone pain	82	27.2
	Management of pain caused by compression of nerves by tumor	79	26.2
	Identification of addiction	76	25.2
	Use of controlled-release opioid formulations	65	21.5
	Use of "rescue doses"	109	36.1
	Use of opioid infusions	53	17.5
	Dose calculation when switching between opioids	89	29.5
	Dose calculation when switching between oral and parenteral routes of opioid administration	88	29.1
	Management of opioid withdrawal symptoms	94	31.1

Table 4: Practice among Healthcare Providers.

Question		n	(%)
1.	How frequently do you assess pain in patients with cancer?		
	Every hour	3	1.0
	Every 4 to 6 hours	99	33.0
	Every day	176	58.6
	Rarely	17	5.7
	At admission or discharge	5	1.7
2.	What percentage of your patients has cancer pain?		
	< 25%	169	56.3
	25 – 50 %	74	24.7
	51 – 75 %	40	13.3
	> 75 %	17	5.7
3.	How often do you treat patients with cancer pain in consultation with psychologist?		
	Often	43	14.3
	Occasionally	193	64.3
	Never	64	21.4
4.	Do you use WHO three – step ladder to treat cancer pain		
	Yes	155	51.7
	No	145	48.3
5.	Do you use a VAS or NRS to assess cancer pain?		
	Yes	151	50.3
	No	149	49.7
6.	Do you usually tell your patients about the side effects of opioid?		
	Yes	267	89.0
	No	24	8.0
	Uncertain	9	3.0
7.	When do you start to manage the side effects of strong opioid?		
	When patient develop then	166	55.3
	When opioid was first prescribed	112	37.3

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Uncertain	22	7.4

Table 5: Perceived barrier to cancer pain management.

Question	n	(%)
What are potential barriers in your setting or department to optimal cancer pain management?		
Inadequate assessment of pain and pain management	215	71.2
Inadequate staff knowledge of pain management	162	54.0
Lack of staff time to attend to patients needs	113	37.7
Lack of access to different opioid types and formats	94	31.3
Medical staff reluctance to administer opioids	39	13.0
Patient or family reluctance to report pain	31	10.3
Patient reluctance to take opioids	38	12.7
Patient inability to pay for analgesics	19	6.3

Discussion

Our study would be the first study to evaluate knowledge and practice among the healthcare providers in the northern east coast of Peninsular Malaysia. Overall, we documented a 75% response rate from our 400 medical and surgical healthcare professionals locally. Out of these, 34.3% of the respondents had undergone pain management training program, with 55.7% of them had some experiences in cancer pain management between 1 – 5 years. The overall result of the knowledge on palliative care pain management still showed a deficit in 66.3% of the respondents. The mean (SD) knowledge was 23.36 (3.86). The level of knowledge deficit in prescribing opioid when compared to study in China were similar [3,4,7]. The knowledge deficit in prescribing opioid for palliative care were probably due to multi-factorial – from lack of palliative care training, experiences in using opioids for palliation, fear of the opioids side effects among others. It is highlighted as well in the barriers for prescribing analgesics in our respondents. They identified three important barriers which are inadequate assessment and pain management, inadequate knowledge of opioid use and lack of time to ensure appropriate patients' needs are served.

It is agreed that education in palliative care is important to improve cancer pain management. Using logistic regression analysis, we found significant association of healthcare providers from family medicine department (OR 0.31, 95% CI (0.11, 0.91), p = 0.033), orthopaedic department (OR 0.17, 95% CI (0.06, 0.48), p = 0.001) with knowledge deficit regarding palliative care pain management compared to other departments. Specialist and medical officer in medical department (OR 0.17, 95% CI (0.07, 0.40), p < 0.001), O&G department (OR 0.31, 95% CI (0.11, 0.91), p = 0.033), ENT department (OR 0.28, 95% CI (0.10, 0.79), p = 0.016) had a significant association of knowledge deficit regarding palliative care pain management.

There was a significant association of participation in a pain management training program and knowledge deficit regarding palliative care pain management (OR 0.51, 95% CI (0.30, 0.87), p = 0.014). All physicians are expected to have good knowledge and attitudes prior to the delivery of good quality services to the public [5,9,10]. Thus, this study is designed to provide information regarding the level of knowledge, attitude, practice, and barriers among healthcare providers in Hospital USM. Despite the significance of the findings, the benefit of education was unclear. Increased in the continue medical education for pain management have yet to satisfy the clinical needs in palliative care pain management [5]. The process of knowledge delivery may not be enough as part of the educational strategy.

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The most frequently observed patient-related obstacle was recognised as being a lack of information about pain management. These barriers differ depending on the features of the patient, doctor, or institution. The notion that prolonged procedural of administering opioids may have been caused by a lack of coordination and communication amongst healthcare providers. With a continuous routine educational strategy, dissemination of guidelines and regular training opportunity, this would improve the understanding among the healthcare providers on the present status of palliative care knowledge [11,12,13].

Limitation

The study was conducted during pandemic; hence we were not able to increase the response rate despite a regular reminder. Since the number of physicians in training for master's programme in anaesthesia has always been one of the highest in USM, at the time of the questionnaire distribution, 110/400 or 27.5% of target population were from anaesthesia master's programme. With total response rate of 75%, the proportion of responses from anaesthesia department was maintained at 27%, which was a fair proportion. Furthermore, the self-selection bias from voluntary participation is inevitable due to non-probability sampling. The questionnaire was limited to evaluate the knowledge on morphine and pethidine prescription while other methods of pain management in palliative care were not explored. Majority of the responders answered less than 25% in the practice section, probably due to the inexperienced with cancer pain management. This may cause bias in the result as these physicians were less likely to manage palliative care pain and at end-of-life care.

Conclusion

Our study has revealed the gaps in palliative care pain management education among the healthcare providers. There has been significant knowledge deficit in prescribing opioid. These findings suggest that pain management training programme should be held regularly to improve the knowledge and understanding among the medical personnel locally. This is vital step, especially in palliative care, where improving the quality of life and reducing the suffering of physical pains starts with appropriate pain management by the healthcare providers to the terminally ill patients.

Acknowledgements

We would like to acknowledge to all participants who have spent their time in completing the questionnaire for this study.

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