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Knowledge and Attitude of health Professionals on pain management using KASRP tool in a tertiary cancer care center of Nepal

Abstract:

Introduction: The incidence of cancer is increasing in the developing countries. The projected incidence of cancer in Nepal by 2020 is 38.5 per 100,000 males and 41.4 per 100,000 females. One of the commonest and distressing symptoms of cancer is pain. Although the cancer itself is painless condition but the pain increases as disease progress. The prevalence of pain during active treatment period raises from 33% to more than 75% in advanced stages.

Objectives: Pain is one of the commonest distressing symptoms in cancer patients and it needs to be managed effectively. Our objective is to evaluate the knowledge and attitude of health professionals of the tertiary level cancer hospital using KASRP questionnaire.

Methodology: This was descriptive cross sectional study done in one of the tertiary cancer hospital of Nepal. The total sample size calculated was 128 but the final number of participants in the study were 122. The probability sampling method was utilized. The updated version of KASRP questionnaire developed by Ferrell and McCaffery was used and distributed to health professionals.

Results: The final number of participants were 122; 91 nurses, 15 house officers and 16 consultants. The mean KASRP score of all health professionals was 19.43± 4.42 (49.83%). The mean KASRP score of consultants was 25.68 ± 4.72 (65.86%) and when compared with mean score of nurses 18.42 ± 3.57 (47.25%) and house officers 18.86 ± 3.35 (48.37%), it was significantly higher (p value <0.01). There was no significant difference in mean score obtained by participants who had continuous education on pain management within last 1 year.

Conclusion: The current study has shown inadequate knowledge of pain management among health professionals. The Continuous pain education program in the institute seems to be ineffective. A well preplanned education program involving health professionals from different disciplines including authorities of institute with appropriate evaluation method is needed to make a difference.

Key Words: cancer pain, pain management education, questionnaire, knowledge and attitude on pain management.

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Introduction

The incidence of cancer is also increasing in the developing countries. The projected incidence of cancer in Nepal by 2020 is 38.5 per 100,000 males and 41.4 per 100,000 females.[1] Cancer not only affects the physical health but also the mental and psychosocial aspect of individual. One of the commonest and distressing symptoms of cancer is pain. Although the cancer itself is painless condition but the pain increases as disease progress. The prevalence of pain during active treatment period raises from 33% to more than 75% in advanced stages.[2] The

pain in cancer can be also contributed from the treatment modalities like chemotherapy, radiation and surgery and it persists from stage of diagnosis till death. It goes without saying that it is humane to relief pain in cancer patients. The benefits of pain relief ranges from improving quality of life to peaceful death. World Health Organization has devised a simple but effective step ladder pattern guideline for cancer pain management.

In spite of availability of scientific evidences and resources the adequate pain management was lacking even in developed countries in the past. This lead to the formulation of the barriers for adequate pain management by Agency for Health care research and quality in 1994. The barriers can be classified in to three categories; patient related, health professionals related and health system related.[3] The pain management can be improved by identifying and addressing the barriers that exist in the institute. One of the important health professionals related barriers is lack of knowledge of pain management. Without adequate knowledge the health professionals cannot deliver effective pain management to the patients.

KASRP (Knowledge and Attitudes Survey Regarding Pain) tool developed by Ferrell B and Mc Caffery M is one of the tools available to assess the knowledge and attitude of pain management in health professionals.[4] The objective of the study was to find out the knowledge and attitude of pain management among health professionals in one of the cancer hospital of Nepal.

Methodology

This was the descriptive cross sectional study, done in Nepal cancer hospital and Research center, Lalitpur, Nepal from September 2019 to January 2020. The permission was taken from Institutional review committee and the self administered questionnaire was distributed to the doctors and nurses of the hospital. The sample size was 326 based on the formula z^2pq/l^2 by taking the prevalence of the study by Al Quliti KW and Alamri.[5] The total number of health professionals working in the hospital was 181 according to data provided by human resource department. Using the formula for finite population,

$$n = n0 / (1 + \frac{n0-1}{N})$$

the sample size calculated was 116. Taking 10% as the non response rate, the total sample size came to be 128. The data collection tool comprised of pre-designed structured questionnaire. The questionnaire consists of general information of the respondents, 22 true/false questions, 15 multiple choice questions and two case studies. The questionnaire is an updated version of KASRP which was developed by Ferrell and McCaffery in 1987 and revised over the years and last updated in 2014. The content of the tool is derived from standards of pain management such as Guidelines from American Pain Society, World Health Organization and National Comprehensive Cancer Pain Network and content validity was established by pain experts. The test retest reliability is r > .80 and internal consistency is alpha t >70.[6] The question no 16 and 32 were omitted from our study as they were not relevant in our context. The correctly answered question was assigned a score of 1 and incorrectly answered or blank items were assigned a score of 0. All the wards were selected for sampling. Probability sampling was done for selection of health professionals of the hospital. The list of all doctors and nurses was the sampling frame. Based on the population of the health professionals in the hospital, samples were selected proportionately by using lottery method.

The collected data was crosschecked, edited accordingly, coded and categorized. Then the data was entered in Epidata. The data was analyzed by using descriptive and inferential statistics with the help of SPSS (Statistical Package for Social Sciences) version 16. Mean, frequency and percentage were calculated in descriptive analysis whereas Kruskal wallis test was used to see association between mean score among nurses, house officers and consultants. Mann Whitney U test was used to see association between mean score of those attended CME, level of education and year of experience of nurses. p value of less than 0.05 was taken as significant.

Result

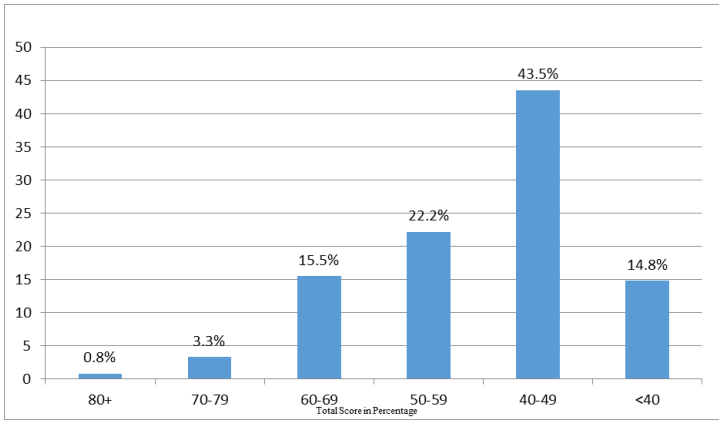
Table 1: Demographic Characteristics of Participants n=122

	Nurses		Doctors	
Characteristics	**f**	**%**	**f**	**%**
Qualification				
PCL Nursing	40	32.8		
Bsc Nursing	50	41		
Master in Nursing	1	0.8		
MBBS			15	12.3
MD/MS			16	13.1
Post				
Staff nurse	67	54.9		
Senior staff nurse	18	14.8		
Incharge	6	4.9		
Medical Officer			15	12.3
Consultant Doctor			16	13.1
Work experience in years				
1 or less	25	27.5	14	45.1
2 to 5	50	54.9	3	9.6
6 to 9	12	13.2	4	12.9
10 and above	4	4.4	10	32.2
Attended CME on pain in last 1 year				
No	70	76.9	25	80.6
Yes	21	23.1	6	19.4

The KASRP questionnaire were distributed to 128 health professional, six did not filled the questionnaire. The final number of participants in the study were 122 ; 91 nurses, 15 house officers and 16 consultants . The age of nurses ranged from 20 to 33 years with mean age of 24.69 ±3.16 years. The age of house officers ranged from 23 to 33 years with mean age of 26.87 ±1.85 years. Finally, consultants age ranged from 30 to 54 years with mean of 41.06 ±7.52 years . The rest of general characteristics of participants is shown in Table 1.

The KASRP questionnaire consists of 41 questions. After the omission of two questions because of non relevant to our context, the final questionnaire used in our study consists of 39 questions. The mean score of all the participants in our study was 19.43± 4.42(49.83%). The score ranged from lowest of 8 (20.5%) to highest of 37 (94.87%). The figure 1 showed the distribution of total score in percentage among health professionals.

Figure 1: Bar diagram showing Distribution of total score of participants in percentage



The score among nurses ranged from 8 (20.5%) to 26 (66.6%). The house officers score was 13 (33.3%) to 25 (64.1%). The score among consultants varied from 16 (41.03%) to 37 (94.8%). The mean score was significantly better for consultants with score of 25 ± 4.72 (65.86%) (p value <0.01). Table 2.

Table 2. Comparison of KASRP score and percentage among Nurses, House officers and Consultants n=122

	Mean score	Percentage (%)	P value*
KASRP of Nurses	18.42 ± 3.57	47.25	< 0.01
KASRP of House Officers	18.86 ± 3.35	48.37	
KASRP of Consultants	25.68 ± 4.72	65.86	

Kruskal Wallis test * p value significant <0.05

We compared the mean score of participants attending continuous medical education (CME) on pain management within last 1 year with those with non-attending and was not significant. Similarly, the mean score of nurses was not significantly associated with either the level of education neither years of experience.

The KASRP tool has 2 questions, in form of case studies to assess the knowledge and attitude of participants regarding pain assessment. The result is shown in Table 3.

Table 3: Response of participants on questions related to pain assessment n=122

QNo	Questions	Number (%) with Correct answer
38A	Patient A: Andrew is 25 years old and this is his first day following abdominal surgery. As you enter his room, he smiles at you and continues talking and joking with his visitor. Your assessment reveals the following information: BP = 120/80; HR = 80; R = 18; on a scale of 0 to 10 (0 = no pain/discomfort, 10 = worst pain/discomfort) he rates his pain as 8. A. On the patient's record you must mark his pain on the scale below. Circle the number that represents your assessment of Andrew's pain. 0 1 2 3 4 5 6 ---------- No 7 8 9 10 ---------- Worst Pain/discomfort	25 (20.5%)
38B	Your assessment, above, is made two hours after he received morphine 2 mg IV. Half hourly pain ratings following the injection ranged from 6 to 8 and he had no clinically significant respiratory depression, sedation, or other untoward side effects. He has identified 2/10 as an acceptable level of pain relief. His physician's order for analgesia is "morphine IV 1-3 mg q1h PRN pain relief." Check the action you will take at this time. 1. Administer no morphine at this time. 2. Administer morphine 1 mg IV now. 3. Administer morphine 2 mg IV now. 4. Administer morphine 3 mg IV now.	4 (3.3%)
39A	Patient B: Robert is 25 years old and this is his first day following abdominal surgery. As you enter his room, he is lying quietly in bed and grimaces as he turns in bed. Your assessment reveals the following information: BP = 120/80; HR = 80; R = 18; on a scale of 0 to 10 (0 = no pain/discomfort, 10 = worst pain/discomfort) he rates his pain as 8. A. On the patient's record you must mark his pain on the scale below. Circle the number that represents your assessment of Robert's pain: 0 1 2 3 4 5 6 ---------- No 7 8 9 10 ---------- Worst Pain/discomfort	33 (27%)
39B	Your assessment, above, is made two hours after he received morphine 2 mg IV. Half hourly pain ratings following the injection ranged from 6 to 8 and he had no clinically significant respiratory depression,sedation, or other untoward side effects. He has identified 2/10 as an acceptable level of pain relief. His physician's order for analgesia is "morphine IV 1-3 mg q1h PRN pain relief." Check the action you will take at this time: 1. Administer no morphine at this time. 2. Administer morphine 1 mg IV now. 3. Administer morphine 2 mg IV now. 4. Administer morphine 3 mg IV now.	7 (5.7%)

The most frequently correctly answered and least frequently correctly answered questions by participants are shown in Table 4 and 5.

Table 4: Questions correctly answered by > 80% of participants n=122

Q No	Questions	Number (%) with correct answer
10	Elderly patients cannot tolerate opioids for pain relief.	113 (92.6%)
7	Combining analgesics that work by different mechanisms (e.g., combining an NSAID with an opioid) may result in better pain control with fewer side effects than using a single analgesic agent.	103 (84.4%)
14	After an initial dose of opioid analgesic is given, subsequent doses should be adjusted in accordance with the individual patient's response.	103 (84.4%)
25	Which of the following analgesic medications is considered the drug of choice for the treatment of prolonged moderate to severe pain for cancer patients? a. codeine b. morphine c. meperidine d. tramadol	102 (83.6%)
27	Analgesics for post-operative pain should initially be given a. around the clock on a fixed schedule b. only when the patient asks for the medication c. only when the nurse determines that the patient has moderate or greater discomfort	101 (82.8%)
34	The time to peak effect for morphine given IV is a. 15 min. b. 45 min. c. 1 hour d. 2 hour	101 (82.8%)
21	The term 'equianalgesia' means approximately equal analgesia and is used when referring to the doses of various analgesics that provide approximately the same amount of pain relief.	98 (80.3%)

Table 5: Questions least correctly answered by participants n=122

QNo	Questions	Number (%) with correct answer
28	A patient with persistent cancer pain has been receiving daily opioid analgesics for 2 months. Yesterday the patient was receiving morphine 200 mg/hour intravenously. Today he has been receiving 250 mg/hour intravenously. The likelihood of the patient developing clinically significant respiratory depression in the absence of new comorbidity is a. less than 1% b. 1-10% c. 11-20% d. 21-40% e. > 41%	13 (10.7 %)
8	The usual duration of analgesia of 1-2 mg morphine IV is 4-5 hours.	18 (14.8 %)
15	Giving patients sterile water by injection (placebo) is a useful test to determine if the pain is real.	23 (18.9%)
4	Patients may sleep in spite of severe pain	26 (21.3%)
36	Following abrupt discontinuation of an opioid, physical dependence is manifested by the following: a. sweating, yawning, diarrhea and agitation with patients when the opioid is abruptly discontinued. b. Impaired control over drug use, compulsive use, and craving. c. The need for higher doses to achieve the same effect. d. a and b	29 (23.8%)

Discussion

This descriptive cross sectional study was conducted in one of the cancer hospital in Nepal over the period of five months.

Pain management is complex and also does not belong to any one discipline. The effective pain management needs the combine effort of the doctors from different specialties and also the support of the nursing staffs who are the frontlines in the management of pain. This is very true for cancer patients as pain is the one of the common as well as distressing symptoms which can disturb the patients physically, mentally and socially.

As the lack of knowledge among health professionals is one of the important barrier for effective pain management, it becomes necessary to assess the knowledge of pain management in staffs working in the hospital. There are various tools available to assess the knowledge of pain management like Knowledge and Attitudes Survey Regarding Pain (KASRP), Objective Structured Clinical Examination (OSCE), The Health Care Providers Pain and Impact Relationship Scale (HC-PAIRS), Pain Knowledge and Beliefs Questionnaire(PKBQ) .[4,7,8,9] The KASRP is one of the popular tools used in the study among medical and nursing students.[10] However KASRP is also been utilized as instrument tool in many studies for medical as well as nursing staffs working in hospital.

The developers of KASRP stated that 80% score is minimum acceptable level. In our study, it was not achieved by nurses, house officers nor by Consultants, except for one consultant. In fact, other studies also failed to achieve the minimum acceptable level. The study done by Omran S and colleagues among 200 nurses in Jordan achieved the mean score of 17.1 ± 5 (42.7%).[11] Similarly the study among 68 oncology nurses in Turkey by Yildirim YK and colleagues showed the score of 13.81 ± 5.02 (35.41%).[12] In our study also , the mean score among nurses is 18.42 ± 3.57(47.25%). None of the nurses, house officers in our study had 80 % score. The scenario is different in developed countries. The study in Canada by Lewthwaite B J et al reported mean score of 79 % and almost half of nurses (48.8%) scored 80% or higher.[13]

The good pain management begins with proper assessment. The patient self report of pain is considered as gold standard and various tools like Visual analogue scale , Numerical rating scale and facial pain scale for children are based on above principal. The knowledge and attitude of pain assessment of our participants is poor. Only 20.5% had correctly answered to question 38A and 27% answered correctly to question 39A. It seems that the health professionals are ignoring the patient self reporting of pain and instead they rely on other parameters like patient behavior for pain assessment. The questions for pain assessment was also the top five frequently missed items of KASRP in study by Albaqawi H and colleagues.[14] It is also worth to note that only 57.4% of participants believed that most accurate judge of intensity of patient pain is patient himself or herself.

The basic knowledge of pharmacology like route of administration, drug action, side effects, choice of drugs, drug dosage is essential. The cancer patients soon or late will require opioid for the pain management and it is expected to have good knowledge of pharmacology of opioid for all health professionals involved in management of their patients. The mixed results were obtained in our study regarding questions related to opioid. Most of the participants have knowledge of combining different analgesics for better control of pain with few side effects (84.4% correctly answered). They also have knowledge of use of opioid in elderly which is highest correctly answered (92.6%). Morphine is drug of choice for treatment of cancer pain and 83.6% even accept it. Although they are using morphine more frequently than other opioid in daily practice, there are still knowledge gap with morphine. WHO guidelines has clearly state that oral opioid is drug of choice for persistant cancer pain but surprising only 12.3% were correct and also only 36.1% were right about peak effect of oral morphine which is 1-2 hours. Around 82 % gave positive answer to time to peak effect of Intravenous morphine .

but only 14.8% were correct about duration of action of Intravenous 1-2 mg morphine. One of the important aspect of cancer pain management is concept of equianalgesia. Though 80.3% of participants were aware of definition of equianalgesia, the correct answer to task related to conversion of oral dose of morphine to intravenous dose was given by 56.6% only.

The misconception and wrong belief are sometime harbored due to lack of knowledge. One of the common practices is to give sterile water injection to patient to see if the patients complaint of pain is real or fake. In our study also most (81.1%) had same misconception.

One of the findings in our study is lack of significant association between mean score with level of education and years of experience among nurses. The other studies have shown different results. The study done by Lewthwaite BJ et al have shown that the score was significantly correlated with age, years of experience and level of education of the nurses In their study, score was higher as level of education increased but the score was significantly better in nurses with experience less than 5 years and age between 26 to 35 years.[13] However the study by Perri GA et al, the score for modified version of KASRP among nurses of geriatric palliative care unit had no significant differences by age, years of experience and level of education.[15]

Pain management is not just prescribing analgesic to the patients. The team consisting of senior doctors, juniors doctors and nurses, all should have basic knowledge and the gap of knowledge among them ultimately will lead to inadequate pain management to patients. In our study, the mean score of Consultants 25.68 ± 4.72 (65.68%) was significantly higher than those of house officers and nurses indicating knowledge gap. It seems that that the mean score also did not improve significantly with CME on pain management. The pain education should be designed to make a difference and it is only through introduction of appropriate evaluation strategies, the desired outcome can be possible.[16]

Conclusion

The current study has shown inadequate knowledge of pain management among health professionals. The Continuous pain education in the institute seems to be ineffective. A well preplanned education program involving health professionals from different disciplines including authorities of institute with appropriate evaluation method is need to make a difference.

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Conflicts of interest

None.

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