

Pain Management Practices and Perceived Barriers among the Health Professionals in Different Hospitals of Nepal

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ABSTRACT

Introduction: Despite the availability of resources and protocol, and advances in pain management, improvement in pain management practice is still lacking especially in developing countries like Nepal. Certain barriers act as obstacle to adequate pain management. The barriers can be classified into three categories: barrier related to patient, health care professionals and health care system. There are very few literature that focuses on pain as public health problem in Nepal. So there is need for such multicentre study in the country.

Aim: To assess the pain management practices of the health professionals in different hospitals of Nepal and to identify different types of perceived barriers which prevent adequate pain management of the patients.

Materials and Methods: A cross-sectional multi-centre study was conducted among 292 health professionals of five different hospitals of Nepal. Simple random sampling technique was used to select the participants from each hospital. Data collection was done by using structured self administered questionnaire. Descriptive and bi-variate analysis was done.

Results: Out of 292 participants (182 doctors, 102 nurses and 10 health assistants), only 56 (19.2%) had participated in pain management training. Only 39.7% always used pain scale for assessment of pain. The documentation of pain was also poor with only 22.3% always doing documentation. The documentation of pain assessment was better among nurses when compared with doctors ($p < 0.005$). The pain scale was always used for reassessment by 33.2%. The main barriers to pain management as perceived by the participants were opioids being strictly regulated (75.7%), insufficient staff in the hospital (73.4%), lack of knowledge among patients about pain management (66.8%) and least priority for pain management by hospital (60.1%).

Conclusion: The barriers that prevent pain management exist at all three levels - patient barrier, health professional's related barrier and health system barrier and to overcome all these should be given equal importance. The use of multidimensional approach would help to break the barriers.

Keywords: Insufficient staff, Pain management training, Strict opioid regulation

INTRODUCTION

Pain is one of the most common symptoms of any illness. According to pain management guidelines, pain should be adequately assessed and managed by multimodal regime minimising side-effects of drugs [1]. Despite the availability of resources, protocol and advances in pain management, improvement in pain management practices is still lacking in developing countries. There are certain barriers that act as obstacle in adequate pain management. The barriers can be classified into three categories: patient, health care professionals and health care system [2-4].

There have been nationwide surveys in different countries on practice of pain management and attempt on identifying barriers to pain management among health professionals [5-8]. However, in Nepal, the present authors did not find enough studies that attempted to explore the pain as public health problem. This study intended to find out the pain management practices and the perceived barriers among health professionals of different hospitals of Nepal.

MATERIALS AND METHODS

This was a descriptive cross-sectional multi-centred study carried out in five different tertiary hospitals of Nepal located in four different provinces, out of which four were academic institutes namely Tribhuvan University Teaching Hospital, Manipal Teaching Hospital, Lumbini Medical College Teaching Hospital and BP Koirala Institute of Health Sciences. The fifth was Bhaktapur Cancer Hospital.

Ethical approval for the study was obtained from Government based Nepal Health Research Council (NHRC, Reg'no.509/2017J).

The study was also funded by NHRC and the contract period of one year was decided. The investigator had to complete the study and submit the report at the end of one year. Formal permission was also taken from the concerned authorities of the selected hospitals.

The study included doctors and nurses working in the hospitals. For calculation of sample size, confidence interval was taken 95% and allowable error was 5%. Fifty percent proportion was assumed as there was no specific proportion of good practice in previous studies. Thus, total sample size calculated was 385.

Operation room, Intensive Care Unit, Medical and Surgical wards and Emergency room of these hospitals were selected. The list of doctors and nurses were obtained from the duty rosters. Then simple random sampling technique, through lottery method, was adopted to select the proportionate number of doctors and nurses from different hospitals.

Written informed consent was obtained from each of the participants before data collection. Pre-designed self administered questionnaire was used for the study. An enumerator was chosen from each hospital. They were provided orientation on the tool and the technique of data collection. The questionnaires were distributed to the respondents in person and the filled questionnaires were returned after 2 days.

Pre-designed self administered questionnaire was used to collect information on pain management practice and perceived barriers. The practice questionnaire consisted of close-ended questions and the barrier questionnaire was in the form of 5-point Likert scale. For each item, frequency of scales 1, 2 and 3 were combined as negative

response, and 4 and 5 were combined as positive response. The practice related questions were prepared based on the study of Louri M et al., and Ferrante P et al., [5,7]. Some of the barrier questions were extracted from the study of Jho HJ et al., and Jeon YS [6,9].

Pretesting of the questionnaire was done among nurses and residents of Department of Anaesthesiology of Tribhuvan University Teaching Hospital. The reliability of the tool was assessed by calculating the Cronbach's alpha (α), the value of which was 0.78. As per findings and feedback from pretesting, some questions were rewritten in simple format to make them more meaningful and comprehensible.

STATISTICAL ANALYSIS

Data were entered in Epidata version 3.1 and analysed by using SPSS version 16.0. Data was analysed by using descriptive (frequency, percent, mean and standard deviation) and inferential statistics (chi-square test) as per the nature of the variables. These were then presented in tables and figures with the use of Microsoft Word and Microsoft Excel 2007. Statistical significance was considered at $p < 0.05$.

RESULTS

Although the calculated sample size was 385, due to incomplete questionnaires and non-response, the total samples taken were 292. Most of the participants were doctors (61.6%), followed by nurses (34.9%) and paramedics (3.4%). The mean age of the participants was 29.6 ± 8.4 years. The participants with postgraduate qualification were 80 (27.4%). Majority (69.5%) had work experience of < 5 years [Table/Fig-1]. Only 56 participants (19.2%) had received pain management training in the past.

More than half of the participants (53.8%) always did assessment of pain on their patients. Documentation of pain was poor, with only 22.3% always doing documentation. Pain re-assessment was always done by most of the participants (67.8%). The side-effects of pain medication were assessed by only 45.2% [Table/Fig-2].

Demographic characteristics	Number (n)	Percent (%)
Age group (in years)		
<30	172	58.9
≥ 30	120	41.1
Gender		
Male	129	44.2
Female	163	55.8
Group of participants		
Doctors	180	61.6
Nurses	102	34.9
Paramedics	10	3.4
Work experience (in years)		
<5	203	69.5
≥ 5	89	30.5
Educational qualification		
Bachelor of Medicine and Surgery (MBBS)	100	34.2
Bachelor in Nursing (BN)	29	9.9
Certificate level in Nursing (PCL)	73	25.0
Doctor of Medicine (MD)	80	27.4
Health Assistant (HA)	10	3.4
Wards		
Operation room	113	38.7
Medical and surgical ward	115	39.4
Intensive care unit	51	17.4
Emergency room	13	4.5

[Table/Fig-1]: Demographic Profile (n=292).

	Doctors		Nurses		Paramedics		Total	
	N	%	n	%	n	%	N	%
Frequency of pain assessment								
Never	5	2.8	5	4.9	1	10	11	3.8
Sometimes	83	46.1	36	35.3	5	50	124	42.5
Always	92	51.1	61	59.8	4	40	157	53.8
Documentation of pain assessment								
Never	38	21.1	16	15.7	2	20.0	56	19.2
Sometimes	115	63.9	54	52.9	2	20.0	171	58.6
Always	27	15.0	32	31.4	6	60.0	65	22.3
Reassessment after pain medication								
Never	9	5.0	3	2.9	2	20.0	14	4.8
Sometimes	57	31.7	21	20.6	2	20.0	80	27.4
Always	114	63.3	78	76.5	6	60.0	198	67.8
Assessment of side-effects of medication								
Never	12	6.7	4	3.9	1	10.0	17	5.8
Sometimes	91	50.6	47	46.1	5	50.0	143	49
Always	77	42.8	51	50.0	4	40.0	132	45.2

[Table/Fig-2]: Pain assessment.

Only 39.7% always used pain scale for assessment of pain. The frequently used Pain scale was Visual Analog Scale (VAS) (42%). Despite pain re-assessment always been done by most of the participants, only 33.2% always used standard tools for pain reassessment [Table/Fig-3].

	Physicians		Nurses		Paramedics		Total	
	N	%	n	%	%	%	n	%
Pain scale used for pain assessment								
Never	24	13.3	22	21.6	6	60.0	52	17.8
Sometimes	86	47.8	36	35.3	2	20.0	124	42.5
Always	70	38.9	44	43.1	2	20.0	116	39.7
Pain scale used (n=215)*								
Visual Analog Scale (VAS)	69	47.9	15	22.1	0	0	84	42
Numerical Rating Scale (NRS)	62	43.1	5	7.3	1	10.0	68	34
Facial Pain Scale (FPS)	13	9.0	48	70.6	2	20.0	63	31.5
Pain scale used for reassessment (n=292)								
Never	32	17.8	14	13.7	2	20.0	48	16.4
Sometimes	96	53.3	47	46.1	4	40.0	147	50.3
Always	52	28.9	41	40.2	4	40.0	97	33.2

[Table/Fig-3]: Use of pain scale.

*out of 240, only 215 participants answered about the specific pain scale that they use

The main barriers to pain management as perceived by the participants were opioids being strictly regulated (75.7%), insufficient staff in the hospital (73.4%), lack of knowledge among patients about pain management (66.8%) and least priority for pain management by hospital (60.1%) [Table/Fig-4].

While comparing the pain management practice between physicians and nurses, no significant difference was found in the practices, except in documentation of pain assessment, in which significantly more nurses were found to be documenting pain than the physicians ($p < 0.05$) [Table/Fig-5].

The perceived barriers to pain management are significantly different in physicians and nurses. Barriers like reluctance of patient to report pain and strict regulation of opioids are perceived significantly more by nurses. Similarly, among the physicians, perceived barriers like lack of knowledge of patient, lack of communication between patient and staff, lack of proper assessment, inadequate knowledge and experience among staff, lack of time etc., are found to be more significant [Table/Fig-6].

	Physicians		Nurses		Paramedics		Total	
	n	%	n	%	n	%	n	%
Reluctance of patient to report pain	58	32.2	51	50	4	40.0	113	39.5
Patient does not like pain medication	25	13.9	13	12.7	2	20.0	40	14
Patient cannot pay for medication	32	17.8	18	17.6	1	10.0	51	17.8
No knowledge of patient	128	71.1	57	55.9	6	60.0	191	66.8
Lack of communication between patient and staff	95	52.8	33	32.4	2	20.0	130	45.5
No proper assessment by staff	92	51.1	28	27.5	3	30.0	123	43
Inadequate knowledge among staff	104	57.8	28	27.5	5	50.0	137	47.9
Lack of experience	118	65.6	40	39.2	5	50.0	163	57
Lack of time	91	50.6	30	29.4	3	30.0	124	43.3
Hesitation to prescribe opioids	89	49.4	35	34.3	4	40.0	128	44.8
Reluctance of nurse	89	49.4	44	43.1	1	10.0	134	46.9
Lack of communication of doctors and nurses	66	36.7	24	23.5	2	20.0	92	32.2
Opioids are strictly regulated	127	70.6	82	80.4	7	70.0	216	75.5
Insufficient staffing	131	72.8	70	68.6	9	90.0	210	73.4
Lack of medication in hospital pharmacy	93	51.7	34	33.3	5	50.0	132	46.2
Least priority by hospital	117	65	51	50	4	40.0	172	60.1

[Table/Fig-4]: Perceived barriers. (n=292)

Perceived barriers	Physician		Nurse		p-value*
	Number	Percent	Number	Percent	
Reluctance of patient to report pain	58	32.2	51	50.0	0.002**
Patient does not like pain medication	25	13.9	13	12.7	0.470
Patient cannot pay for medication	32	17.8	18	17.6	0.557
No knowledge of patient	128	71.1	57	55.9	0.007**
Lack of communication between patient and staff	95	52.8	33	32.4	0.001**
No proper assessment by staff	92	51.1	28	27.5	<0.01**
Inadequate knowledge among staff	104	57.8	28	27.8	<0.01**
Lack of experience	118	65.6	40	39.2	<0.01**
Lack of time	91	50.6	30	29.4	<0.01**
Hesitation to prescribe opioids	89	49.4	35	34.3	0.009**
Reluctance of nurse	89	49.4	44	43.1	0.185
Lack of communication of doctors and nurses	66	36.7	24	23.5	0.015**
Opioids are strictly regulated	127	70.6	82	80.4	0.046**
Insufficient staffing	131	72.8	70	68.6	0.272
Lack of medication in hospital pharmacy	93	51.7	34	33.3	0.002**
Least priority by hospital	117	65.0	51	50.0	0.010**

[Table/Fig-6]: Perceived barriers to pain management among physicians and nurses. (n=282)

*chi-square test; **p' significant at 0.05

Pain management practice	Physician (n=180)		Nurses (n=102)		p-value*
	Number	Percent	Number	Percent	
Pain training received					
Yes	34	18.9	19	18.6	0.957
No	146	81.1	83	81.4	
Frequency of using pain scale for assessment					
Never	24	13.3	22	21.6	0.069
Sometimes	86	47.8	36	35.3	
Always	70	38.9	44	43.1	
Frequency of documentation of assessment					
Never	38	21.1	16	15.7	0.005**
Sometimes	115	63.9	54	52.9	
Always	27	15.0	32	31.4	
Reassessment after medication					
Never	9	5.0	3	2.9	0.075
Sometimes	57	31.7	21	20.6	
Always	114	63.3	78	76.5	
Frequency of using pain scale for reassessment					
Never	32	17.8	14	13.7	0.145
Sometimes	96	53.3	47	46.1	
Always	52	28.9	41	40.2	
Frequency of assessing side-effects of pain medication					
Never	12	6.7	4	3.9	0.391
Sometimes	91	50.6	47	46.1	
Always	77	42.8	51	50.0	

[Table/Fig-5]: Comparison of pain management practice between physicians and nurses (n=282).

*chi-square test; **p' significant at 0.05

DISCUSSION

This multi-centre study, done among health professionals, has shown the current scenario of pain management practices in the tertiary level hospitals of Nepal. It also highlights the barriers to pain management. For effective pain management, the pain must be assessed using standard pain measurement tools and later re-assessed to test the adequacy of pain relief treatments. Documentation of pain scores is vital to know the dynamics of pain scores and adequacy of treatments. In this study, about half of the participants (53.8%) always asked about pain. However, only (39.7%) participants always used pain scale for assessment of pain. The frequently used Pain scale was VAS (42%). The documentation of pain was also poor with only 22.3% always documenting pain. Despite many participants (67.8%) claiming that the reassessment of pain was always done; only 33.2% used pain scale for reassessment. The side-effects of pain medication were always assessed by only 45.2%. The inadequate assessment of pain and poor documentation was also found in study done in mainland China by Ying GT et al., [8]. The importance of standardised pain scale was shown in study by Zoega S et al., where use of pain scale was associated with better pain management [10].

The responses to the questionnaire were also compared between two groups of physicians and nurses in regard to the pain management practices. The significant difference was noted in regard to the documentation of pain, where documentation was better among nurses ($p < 0.05$). This might be due to the habit of documentation of vitals and plan in nursing chart by nurses. The study about pain documentation was also done in the year 2000 in the Emergency Department of one of the hospitals of Chicago, USA by Eder SC et al., [11]. Initial pain assessment was done in 94% of patients but pain scale was used only in 24% of patients. Documentation of reassessment of pain after therapy was done in

39% and pain scale was used in only 19%. In their study also, it was found that nurses were 2.2 times more likely to document pain than physicians.

The present authors also compared pain management practices among different hospitals of Nepal. The pain management practices were almost similar among all hospitals.

Overall the pain assessment and reassessment by using Standard pain assessment tools was only practised by few health professionals. The barriers that prevent adequate pain management are divided into 3 groups; barriers related to patient, related to health professionals and related to health care system. In this study, the barriers related to health care system as rated by the participants were opioids being strictly regulated (75.7%), insufficient staff in the hospital (73.4%) and least priority for pain management by hospital (60.1%). Among the barriers related to patient, lack of knowledge of patient about pain management was rated high (66.8%) by the participants. The barriers related to health professionals were not rated high as compared to previous two barriers and lack of experience of pain management (57%) was scored highest among the barrier related to health professionals.

The comparison of perceived barriers among the physicians and nurses showed difference in their perception regarding the barriers in many areas. Both doctors and nurses were consistent that insufficient staffing is one of the most important barriers preventing effective application of pain management. The results are compared with similar studies done in Morocco and South Korea [6,7]. The study done by Jho HJ et al., showed that barrier related to health professionals like time constraints was rated highest 75.8% by physicians and 66.1% by nurses [6]. The insufficient knowledge of pain control was next common perceived barrier, 60.5% by physician and 57.7% by nurses. In a study done in Morocco byouri M et al., also, barriers related to health professionals was rated higher which are as follows [5]; inadequate pain assessment by staff 80%, inadequate experience of pain management 78%, insufficient knowledge of pain management 80% and lack of time 70%. Among the barriers related to health care system, the highest score was given to strict regulation of opioids 71%. In the present study, the surprising part is the health professional related barrier is not rated higher. The present authors were expecting the results similar to developing country like Morocco. In fact, poor knowledge of the health professionals on pain management has been identified in many studies [12-15]. The health care related barrier was rated higher in our study where most of the staff think that poor health care system is the main barrier for adequate pain management. The barrier related to health care system is also one of the important barriers that prevent effective pain management. Inadequate nursing staff leading to high workload prevented the pain management in study done in Saudi Arabia by Mohammed A et al., [16]. The consequences of high workload causes failure to deliver pain medication in time and as per demand, improper pain assessment and documentation. This eventually leads to dissatisfaction among nurses [16]. Another study was done among the nurses of Indonesia by Mediani HS et al., about perceived barriers to pain management [17]. The main barriers identified were inadequate nurse patient ratio (inadequate staffing), lack of education and training, lack of hospital support, lack of professional autonomy. Lack of professional autonomy was the one of the findings that ought to be mentioned. In developing countries, the nurses are not authorised to give medication on their own. They have to get permission from the physicians. The nurses in their interview mentioned that even they wanted to manage pain the lack of autonomy prevented to do so.

Strict regulation of opioids is the most frequent perceived barrier that is observed in our study. Opioids have addiction potential so manufacture and distribution of such drugs must be scheduled. Too much strict regulation will lead to formulary restriction, prescription barrier and dispensing barrier and result in unnecessary suffering to

those who really need. The Eastern Europe had suffered from such strict regulation of opioid [18]. There exist the guidelines published by World Health organisation which adopt the principle of Balanced Policy for safer management of controlled drugs [19]. Countries can take more practical measure for prevention and control while ensuring patient access.

The comparison was also done among the different hospitals of Nepal. There was no major deviation of data from cumulative data. The health system related barrier was rated higher in each hospital. Due to the existence of the barriers, the overall pain management practice might not be up to the standard. The knowledge on pain management assessed by using standard tool, Nurses Knowledge and Attitudes Survey Regarding Pain (NKASRP), among nurses in one of the tertiary level hospitals was poor as shown by previous study in Nepal by Shakya B and Shakya S, [15]. As there is lack of multicentred data we can only assume that this is also true for rest of hospitals of Nepal. The authors did not find any other studies done in Nepal that attempt to find out barriers to pain management. The improvement in the pain management can be done by educational programs. The improvement in knowledge and change in behaviour of health personnels, like improvement in quality of pain assessment, use of pain scale and habit of documentation have been achieved by implementation of Pain Education Program (PEP) in China [20]. The "Essential Pain Management Workshop", a one day workshop which is recognised worldwide to provide basic knowledge of pain management among the health professionals has been running successfully in developing countries including Nepal [21]. However, patient related barriers cannot be ignored and awareness has to be created among the patient about the pain management. And lastly, the authorities involved in health system management have to be made aware of the existing condition regarding pain management in Nepal.

Limitation(s)

The results may not reflect the pain practices of all the health professionals of Nepal. The pain assessment and documentation were measured using questionnaire. In order to measure the pain practices accurately the additional monitoring system like auditing is necessary. For obvious reasons, this was not done. The study assessed the perceived barriers of health professionals and may not represent actual barriers.

CONCLUSION(S)

The pain management services have to be developed as necessary health services in Nepal. The major barriers for developing effective pain management service in Nepal as shown by this study are strictly regulated medications, inadequate hospital staffing and poor awareness among patients. The first step in solving the problem is to identify the problem and accept it. There exists barriers at all the three levels and they should be addressed. The health professional related barrier can be overcome by providing adequate trainings on pain management to all health professionals. The medical societies in coordination with authorities of the government should develop policy for improvement of pain management and device action plans to implement in practice.

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