SHORT REPORT

Knowledge and attitude towards the use of pain medications according to WHO cancer pain analgesic ladder in tertiary care hospitals of Pakistan

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Abstract

To assess the knowledge and attitude of practicing physicians and surgeons towards the use of pain medication according to the World Health Organisation cancer pain analgesic ladder, the current study was conducted at tertiary care hospitals of the four provinces of Pakistan. Professionals having experience of treating cancer patients for >2 years were included. Data was collected using a self-administered questionnaire sent to each participant using Google Forms. Of the 630 physicians approached, 133(21%) responded. Of them, 74(55.64%) participants were familiar with the World Health Organisation analgesic ladder. There was a significant difference in the frequency of using the ladder based on age ($p<0.05$). Most participants 31(23%) reported the non-availability of the recommended drugs as the reason for not following the analgesic ladder. There is a strong need to educate physicians and surgeons about the World Health Organisation analgesic ladder, and to make strategies to improve opioid availability in Pakistan.

Keywords: Cancer pain, Analgesic, Knowledge, Practices, Barriers.

DOI: https://doi.org/10.47391/JPMA.10020

Introduction

Cancer pain management is a global concern, and the World Health Organisation (WHO) has declared it a worldwide emergency for improving public health across the world.[1] The WHO has developed a three-step ladder for cancer pain management, which guides physicians on how they can provide pain relief to cancer patients. This approach begins with the use of non-opioid analgesics, such as acetaminophen and nonsteroidal anti-inflammatory drugs (NSAIDs), then progresses to mild to moderate opioid analgesics, like codeine and tramadol, and, finally, in cases of severe pain, recommends the utilisation of potent opioids, such as morphine, oxycodone and fentanyl.[1]

Additional medications, known as adjuvants, can be used at any point along the ladder, which may include antidepressants, anticonvulsants, corticosteroids, or anxiolytics. However, despite these efforts, current data shows that approximately 5.5 million people worldwide receive no or minimal treatment for their cancer pain.[2] The WHO ladder was designed to facilitate and standardise the pharmacological treatment for cancer pain. The three-step approach has been regularly practised by physicians worldwide to provide pain relief to cancer patients.[3]

In Pakistan, cancer treatment is still in its early stages, and many cancer patients report to tertiary care hospitals present due to pain. It is not known how effectively the three-step ladder is practised by physicians and surgeons associated with tertiary care hospitals in Pakistan. Existing literature has identified many knowledge gaps and deficits in implementing the WHO analgesic ladder and managing cancer pain globally.[4,5] However, the current knowledge status of the practicing physicians of leading tertiary care hospitals in Pakistan is not known. The current study was planned to fill the gap by assessing the knowledge and attitude of practicing physicians and surgeons of leading tertiary care hospitals of Pakistan towards the use of pain medication according to the WHO analgesic ladder.

Subjects/Methods and Results

The study was conducted in tertiary care hospitals of the four provinces of Pakistan from April to December 2022 after approval from ethics review committee of The Aga Khan University, Pakistan (ERC No. 2020-5034-11740).

Tertiary care hospitals from four provinces of Pakistan including, Sindh (Aga Khan University Hospital Karachi, Civil Hospital Karachi, Jinnah postgraduate Medical Centre, People's University of Medical and Health Sciences for Women), Punjab (Lahore General Hospital, Mayo Hospital & King Edward Medical Centre, Allied Hospital & PMC Faisalabad), Baluchistan (Civil Hospital Quetta & Bolan Medical College) and Khyber Pakhtunkhwa (Hayatabad Medical Complex Peshawar) were selected. The sample comprised all consultant physicians and surgeons posted in the selected hospitals. A list of their email addresses was obtained with permission from the respective heads of the

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Submission complete: 27-05-2023 **Review began:** 19-07-2023
Acceptance: 30-03-2024 **Review end:** 02-03-2024

departments/institutions, and all the practicing physicians and surgeons having experience of treating cancer patients for >2 years were invited to participate.

Data collection was initially planned using an interviewer-administered questionnaire regarding socio-demographic information, knowledge of the WHO cancer pain ladder, and attitudes and pain practice in cancer patients. However, due to the coronavirus disease-2019 (COVID-19) epidemic and the consequent disruptions in routine life, a self-administered questionnaire was designed using Google Forms without changing the questions that were part of the initial questionnaire. The questionnaire was sent to the participants via email, and it included an informed consent form as well. Written permission was obtained from the head of each participating hospital.

A reminder email was sent to the participants fortnightly for 6 weeks to increase the response rate. Due to a low initial response rate, contact numbers of physicians and surgeons were obtained from the participating hospitals. A reminder call was made to each subject to remind them of the questionnaire and to address any concerns or questions they may have regarding the survey. Data were retrieved and stored in a password-protected Microsoft Excel sheet on the departmental computer.

Data was analysed using SPSS 19. Descriptive analyses were conducted to summarise the responses, including the area of speciality, gender, age groups, years of practising independently, monthly patient visits, and requirements for pain medication. Data was expressed as frequencies and percentages.

Further stratification was done to determine whether there were statistically significant differences in knowledge and attitudes towards pain management among physicians based on demographic variables. Chi-square and Fisher's exact tests were used as appropriate. P<0.05 was considered statistically significant.

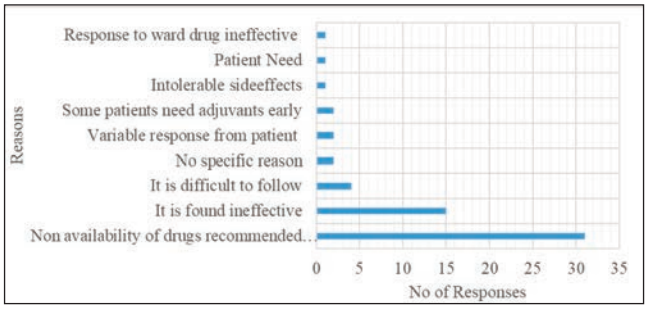

Figure: Reason for not following the World Health Organisation (WHO) analgesic ladder.

Of the 630 subjects approached, 133(21%) responded, with 56(42.11%) being from allied surgical specialities. Overall, 74(55.64%) subjects were familiar with the WHO analgesic ladder, and there was a statistically significant difference regarding the knowledge about WHO analgesic Ladder amongst professionals from different specialities (Table 1).

The use of the WHO analgesic ladder was significantly different between those aged <40 years and those aged 40 years and above (Table 2). Further, those with experience >10 years followed the ladder more frequently than those with experience of 10 years or less (Table 3). However, there was no significant difference in knowledge, adherence or frequency based on gender or the number of cancer

Table-1: Data stratification according to specialties.

	Surgery & Allied (n=56) n (%)	Medicine & Allied (n=48) n (%)	Anesthesiology (n=18) n (%)	Family Medicine (n=3) n (%)	Others (n=8) n (%)	*p*-value
Do you know about the WHO analgesic ladder?						0.008
No	18 (32.1)	29 (60.4)	6 (33.3)	3 (100)	3 (37.5)	
Yes	38 (67.9)	19 (39.6)	12 (66.7)	0 (0)	5 (62.5)	
Do you follow the WHO analgesic ladder in treating cancer patients?						0.897
No	8 (14.3)	3 (6.3)	2 (11.1)	0 (0)	0 (0)	
Yes	30 (53.6)	16 (33.3)	10 (55.6)	0 (0)	5 (62.5)	
How frequently you follow the WHO analgesic ladder?						0.540
Always	9 (16.1)	1 (2.1)	2 (11.1)	0 (0)	2 (25.0)	
Most of the time	18 (32.1)	13 (27.1)	7 (38.9)	0 (0)	3 (37.5)	
Occasionally	3 (5.4)	2 (4.2)	1 (5.6)	0 (0%	0 (0)	
Do you break the order of WHO analgesic ladder in the treatment of your patients?						0.316
Most of the time	5 (8.9)	2 (4.2)	1 (5.6)	0 (0)	0 (0)	
Never	6 (10.7)	0 (0)	3 (16.7)	0 (0)	1 (12.5)	
Occasionally	19 (33.9)	14 (29.2)	6 (33.3)	0 (0)	4 (50.0)	

WHO: World Health Organisation.

Table-2: Data stratification according to age (years).

	≤ 40 (n=51) n (%)	>40 (n=82) n (%)	*p*-value
Do you know about the WHO analgesic ladder?			0.859
No	22 (43.1)	37 (45.1)	
Yes	29 (56.9)	45 (54.9)	
Do you follow the WHO analgesic ladder in treating cancer patients?			0.065
No	2 (6.9)	11 (24.4)	
Yes	27 (93.1)	34 (75.6)	
How frequently you follow the WHO analgesic ladder?			0.037
Always	3 (11.1)	11 (32.4)	
Most of the time	19 (70.4)	22 (64.7)	
Occasionally	5 (18.5)	1 (2.9)	
Do you break the order of WHO analgesic ladder in the treatment of your patients?			0.283
Most of the time	4 (14.8)	4 (11.8)	
Never	2 (7.4)	8 (23.5)	
Occasionally	21 (77.8)	22 (64.7)	

WHO: World Health Organisation.

Table-3: Data stratification according to professional experience.

	Between 5 to 10 years (n=33) n (%)	< 5 years (n=27) n (%)	> 10 years (n=70) n (%)	Not yet independent (n=3) n (%)	*p*-value
Do you know about the WHO analgesic ladder?					0.131
No	17 (51.5)	9 (33.3)	30 (42.9)	3 (100)	
Yes	16 (48.5)	18 (66.7)	40 (57.1)	0 (0)	
Do you follow the WHO analgesic ladder in treating cancer patients?					0.209
No	1 (6.3)	2 (11.1)	10 (25.0)	0 (0)	
Yes	15 (93.8)	16 (88.9)	30 (75.0)	0 (0)	
How frequently you follow the WHO analgesic ladder?					0.044
Always	2 (13.3)	2 (12.5)	10 (33.3)	0 (0)	
Most of the time	10 (66.7)	11 (68.8)	20 (66.7)	0 (0)	
Occasionally	3 (20.0)	3 (18.8)	0 (0)	0 (0)	
Do you break the order of WHO analgesic ladder in the treatment of your patients?					0.266
Most of the time	2 (13.3)	3 (18.8)	3 (10.0)	0 (0)	
Never	3 (20.0)	0 (0)	7 (23.3)	0 (0)	
Occasionally	10 (66.7)	13 (81.3)	20 (66.7)	0 (0)	

WHO: World Health Organisation.

Table-4: Data stratification according to gender.

	Male (n=40) n (%)	Female (n=93) n (%)	*p*-value
Do you know about the WHO analgesic ladder?			0.129
No	22 (55.0)	37 (39.8)	
Yes	18 (45.0)	56 (60.2)	
Do you follow the WHO analgesic ladder in treating cancer patients?			0.167
No	1 (5.6)	12 (21.4)	
Yes	17 (94.4)	44 (78.6)	
How frequently you follow the WHO analgesic ladder?			0.743
Always	3 (17.6)	11 (25.0)	
Most of the time	13 (76.5)	28 (63.6)	
Occasionally	1 (5.9)	5 (11.4)	
Do you break the order of WHO analgesic ladder in the treatment of your patients?			0.051
Most of the time	1 (5.9)	7 (15.9)	
Never	6 (35.3)	4 (9.1)	
Occasionally	10 (58.8)	33 (75.0)	

WHO: World Health Organisation.

Table-5: Data stratification according to the number of cancer patients seen in a month.

	< 10 (n=99) n (%)	11 to 20 (n=18) n (%)	21 to 30 (n=4) n (%)	>30 (n=11) n (%)	*p*-value
Do you know about the WHO analgesic ladder?					0.097
No	49 (49.5%)	4 (22.2%)	2 (50.0%)	3 (27.3%)	
Yes	50 (50.5%)	14 (77.8%)	2 (50.0%)	8 (72.7%)	
Do you follow the WHO analgesic ladder in treating cancer patients?					0.189
No	11 (22.0%)	0 (0%)	0 (0%)	2 (25.0%)	
Yes	39 (78.0%)	14 (100%)	2 (100%)	6 (75.0%)	
How frequently you follow the WHO analgesic ladder?					0.311
Most of the time	24 (61.5%)	11 (78.6%)	2 (100%)	4 (66.7%)	
Occasionally	4 (10.3%)	0 (0%)	0 (0%)	2 (33.3%)	
Always	11 (28.2%)	3 (21.4%)	0 (0%)	0 (0%)	
Do you break the order of WHO analgesic ladder in the treatment of your patients?					0.650
Most of the time	7 (17.9%)	0 (0%)	0 (0%)	1 (16.7%)	
Never	6 (15.4%)	3 (21.4%)	0 (0%)	1 (16.7%)	
Occasionally	26 (66.7%)	11 (78.6%)	2 (100%)	4 (66.7%)	

WHO: World Health Organisation.

patients seen in a month (Tables 4-5). Most participants reported the non-availability of drugs recommended in the ladder as the reason for not following the WHO analgesic ladder (Figure).

Discussion and Conclusion

Cancer pain has a severe impact on the quality of life (QOL), and the goal of cancer pain management is to relieve pain to a level that allows for an adequate QOL. Treatment of cancer pain has improved during the last three decades in high-income countries (HICs) after the introduction of the WHO cancer pain ladder. However, in Pakistan, a large number of cancer patients present due to pain in tertiary care hospitals. The current study examined the knowledge regarding the use of pain medications according to the WHO cancer pain analgesic ladder across tertiary care hospitals in Pakistan.

The results indicated that 55.64% of the participants were familiar with the ladder. Although this indicates a moderate level of awareness, it is noteworthy that other studies have reported lower levels of awareness.[6] Studies conducted in Jordan,[7] South Korea,[8] Spain,[9] Italy[10] and Thailand[11] have also reported knowledge deficits among medical professionals in cancer pain management. However, the current results could have been affected by a small sample size or inadequate response rate despite all the efforts made to inflate the sample.

The current study showed a high level of knowledge regarding pain management and the three-step ladder among surgeons and anaesthesiologists compared to a study done in India that showed better knowledge among the generalists.[12] These findings could be due to the fact that the survey was conducted in tertiary care hospitals across the country, and oncology and palliative care are still a niche in Pakistan. Literature has shown that approximately 85% of respondents working in oncology units had a comprehensive knowledge of the ladder[13] and this supported the current results.

Several studies have shown that knowledge of cancer pain treatment was favourably correlated with education level and the number of years spent working in a cancer ward.[7,8,14-17] The current study showed that participants having experience of >10 years have better knowledge than those having <10 years. Prior studies have demonstrated that involvement in treating cancer patients and training in cancer pain management can enhance professionals' understanding of and attitudes toward

cancer pain management.[18-23] There is a need to educate young physicians by offering small training sessions in the form of continuous professional development (CPD) about the WHO analgesic ladder and its implementation.

In the current study, physicians aged >40 years frequently followed the analgesic ladder compared to those aged <40. These findings were well matched with a study conducted in a developed country.[7]

Opioids are essential treatment for moderate to severe cancer pain. There are striking disparities in the availability of opioids in cancer pain relief globally; 77% of HICs report the general availability of oral morphine compared to 15% and 13% of low- and lower-middle-income countries, respectively.[24,25] The limited availability of opioids is most acutely felt in LMICs, and the current study confirmed that opioid non-availability was the main reason for not following the WHO analgesic ladder in Pakistan.

The current study was a multi-centre survey covering 4 major provinces of Pakistan, and, to our knowledge, it is the first of its kind based on the WHO analgesic ladder. However, the current study had its limitations owing to the inadequate response by practising physicians and surgeons of tertiary care hospitals, resulting in a relatively small sample size. The inadequate response also underlined the unconducive research environment prevailing in the major medical institutions in Pakistan. This could be due to the overwhelming clinical workload in these tertiary care centres, pushing clinical research to a low-priority zone.

In conclusion, more than 50% of the practising physicians and surgeons at tertiary care hospitals in Pakistan who participated were found to be familiar with the WHO analgesic ladder with a moderate level of knowledge. Those who were aged >40 years with experience of >10 years had better knowledge and followed the WHO analgesic ladder in their cancer patients. Limited opioid availability was the main reason for not following the ladder in Pakistan. The current study helped identify the gaps in cancer pain relief. There is a strong need to educate physicians and surgeons about the WHO analgesic ladder, and to make strategies to improve opioid availability in Pakistan.

Disclaimer: None.

Conflict of Interest: None.

Source of Funding: The Higher Education Commission (HEC), Pakistan.

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AAK: Concept, design, literature search, data acquisition, statistical analysis, editing.
ASS, MNB, TB: Concept, design, literature search, editing.
GA: Concept, design, definition of intellectual content, literature search, data acquisition, editing, reviewing.