

KNOWLEDGE OF PAIN MANAGEMENT PROTOCOLS AMONG HEALTH WORKERS IN JOS UNIVERSITY TEACHING HOSPITAL: A COMPARATIVE ANALYSIS

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ABSTRACT:

Background: Moderate and severe pain are common symptoms that accompany cancer patients in Nigeria because they often present with advanced diseases. Evidence from literature has demonstrated that health professionals in Nigeria are ill equipped with the skills to assess or manage pain. Palliative care initiatives to address this gap include the Pain Free Hospital Initiative (PFHI). This study reports on the experience of this study in Jos University Teaching Hospital.

Methods: Scores of Pre and post-test assessments on World Health Organization protocols administered to medical doctors, nurses and pharmacists were analysed in the 14 calendar months that the Pain Free Hospital Initiative trainings held in Jos University Teaching Hospital.

Results: A total of 620 health professionals were trained in pain assessment and management between March 2017 and April 2018. The majority of the trainees were nurses (62.1%), 19% were medical doctors and 7.1% were physiotherapists. Other health care workers made up 10.6%. The average Pre-test scores that assessed the knowledge of participants was 46.8 (SD +/- 19.9) and the post test scores increased to 60.6(SD +/- 23.4) with a positive significance correlation value of $r = 0.552$.

Conclusion: The Pain Free Hospital Initiative training improved the knowledge of health care workers on pain assessment and management.

Keywords: Pain assessment, knowledge, health care workers

INTRODUCTION

Worldwide Non Communicable Diseases (NCDs) including cancer are responsible for a majority of mortalities. It is estimated that there were 18.1 million new cancer cases across 20 world regions in 2018 and 9.6million cancer deaths. The projections are that the leading reason why life expectancy may not be achieved in every country in the 21st century will be malignancies.⁽¹⁾ Chronic infections such as Human papilloma virus, Hepatitis B and C, Epstein-Barr virus and Helicobacter pylori have been implicated as causative agents in Low and Middle income

countries (LMICS) and the background high prevalence rates of HIV have made it an emerging cause of malignancies.⁽²⁾

Among the challenges that confront cancer management in Nigeria are weak health systems, a shortage of skilled health personnel and inadequate access to cancer drugs.⁽³⁾ In 2012, at least 177,000 people are estimated to have died in moderate or severe pain from HIV or cancer. However, the consumption of opioid analgesics (like morphine) was enough to treat just 266 people (0.2% coverage of need).⁽⁴⁾ Barriers to accessing pain relief in Nigeria include lack of training and awareness

among health professionals and patients about pain treatment.⁽⁵⁾ Poor health care seeking behaviour and often wrong diagnosis where patients seek care, have made late presentation a common occurrence in tertiary health centres in Nigeria across the spectrum of all the common cancers. Over 70% of patients were found to present with already advanced stages of cervical and breast cancer, which are two of the most common cancers affecting women in Nigeria in Lagos University teaching hospital but 87.6% had visited appropriate health facilities but had wrong diagnosis that led to advanced disease and late presentation.⁽⁶⁾ Similar studies have shown this to be true for other cancers as well.

The implication of this is that patients present with distressing symptoms with limited options for curative therapy and palliative care becomes the focus of care.

One of the distressing symptoms cancer patients with advanced disease present with is pain ,yet it is often under treated because barriers of related to supply chain management, lack of training of health care workers and patient's fear of addiction to analgesics.^{(6),(7)} .

Recognising these challenges, the Federal Ministry of Health in collaboration with the American Cancer Society piloted the Pain Free Hospital initiative in 2015.This initiative initially included Teaching hospitals in Ilorin, University of Nigeria Teaching Hospital Enugu, National Hospital Abuja and University Teaching Hospital Ibadan.

It later expanded to include Federal Medical Centre Makurdi and Jos University Teaching Hospital Jos in 2016 and 2017 respectively. The aim of the initiative was to equip health care workers to assess pain and provide high quality first line treatment. The ideals of this initiative are reflected in the

National Cancer Control Plan 2018-2022 that makes control of pain an essential component of cancer care.⁽⁸⁾

We therefore sought to share the experiences of this initiative and highlight any changes in knowledge about pain management protocols among health workers practicing in JUTH following that occurred following this intervention.

METHODS

This was a 14 month retrospective study(March 2017-April 2018) that evaluated the pre and post test scores concerning knowledge of pain assessment and treatment using the World Health Organisation Pain ladder .Pre-tests were administered before validated training modules prepared by the Federal Ministry of Health and the American Cancer Society were used to train selected doctors across clinical departments where cancer patients were managed, along with nurses, pharmacists and physiotherapists in 2 day training sessions after which , Post- tests were administered to assess knowledge after the training.

Pre and post test scores were entered into Excel spread sheets and analysed. Variables such as cadre of trained health care workers and their pre and post test scores were obtained. JUTH is a tertiary health care centre in Jos, Plateau State North central Nigeria that serves a population of 3.5 million people and serves as a referral centre for 5 surrounding states as well as various private, government owned and faith based organisations within the state.

Statistical analysis

The statistical focus was to describe the pre and post score frequencies a before and after the trainings. The statistical tool used was SPSS (IBM

Corporation Mac OS, Linux and Unix 2015 version 22). A p-value of less than 0.05 was used to test for statistical significance.

RESULTS

A total of 620 health care workers were trained during the period. 385 were nurses (62.1%) 118 (19%) were medical doctors, 44 (7.1%) were pharmacists, 7 (1.1%) were physiotherapists and other health care workers were 66 (10.6%). The average Pre-test scores that assessed the knowledge of participants was 46.8 (SD +/- 19.9) and the post test scores increased to 60.6 (SD +/- 23.4) with a positive significance correlation value of $r = 0.552$.

AVERAGE KNOWLEDGE ASSESSMENT BEFORE AND AFTER TRAINING

Table 1: Knowledge Score among Professionals

Cadre	Pre-test assessment		Post-test assessment	
	Median	IQR (1 st – 3 rd)	Median	IQR (1 st – 3 rd)
Doctor	64	55-71	73	62-80
Nurse	48	43-55	68	58-75
Pharmacist	50	43-57	68	61-75
Physiotherapist	40	35-65	63	53-70
Others	0	0	0	0

Kruskal-Wallis test = 273.926, df = 4, p ≤ 0.001

Average knowledge of participants before training was 46.8±19.9 percent. However, after the training, the average knowledge of participants increases 60.6±23.4 percent, There was a significant difference in the knowledge before and after the training ($t = 16.675, P = 0.000, df = 619$) (table 2).

Doctors tended to have higher knowledge than other professionals followed by the physiotherapist (51.6±24.0), Pharmacist (51.2±9.8) and lastly the Nurses (49.0±10.4). The difference was statistically significant ($P=0.000$). Similarly, after the training the Doctors had higher knowledge scores (67.5±20.4), Pharmacist (66.9±13.7), Nurses (65.3±13.8), Physiotherapist (62.7±13.8) and others (16.5±30.9). The difference between the knowledge scores according to cadre was statistically significant ($P=0.000$).

Kruskal-Wallis test = 293.998, df = 4, p ≤ 0.001

Table 2: Pre & Post Knowledge Assessment among Professionals

Cadre	Pre-test knowledge assessment		Post-test knowledge assessment		Z*	P
	Median	IQR(1 st – 3 rd)	Median	IQR(1 st – 3 rd)		
Doctor	64	55-71	73	62-80	-2.924	0.003
Nurse	48	43-55	68	58-75	-13.777	≤0.001
Pharmacist	50	43-57	68	61-75	-4.823	≤0.001
Physiotherapist	40	35-65	63	53-70	-1.014	0.310
Others	0	0	0	0	-3.422	0.001
Overall	50	40-58	68	55-75	-15.049	≤0.001

Z = Wilcoxon Rank test, IQR = Inter-Quartile Range*

DISCUSSION

The total number of health care professionals trained in the Pain Free Health Initiative in the period between March 2017 and April 2018 was 620 (six hundred and twenty) with nurses

comprising the highest number of participants 385 (62.1%) followed by doctors 118 (19%) and physiotherapists who made up the least number of participants were 7 (1.1%). This is explained by the fact that nurses generally are more numerous in Jos

University Teaching Hospital than the other targeted health professionals. The PFHI, seeking to make pain assessment an integral part of assessment of patient's vital signs, favoured nurses to form a larger number of the trainees.

Before the training, doctors had the highest knowledge scores, with median score of 64 (IQR = 55-71) followed by the pharmacists, median score of 50 (IQR = 43-57), nurses, median score of 48 (IQR = 43-55), and lastly physiotherapists, median score of 40 (IQR = 35-65). These differences were statistically significant, Kruskal-Wallis test = 273.926, $p < 0.001$. Similarly, after the training, doctors had the highest knowledge scores, median score of 73 (IQR = 62-80) followed by pharmacists, median score of 68 (IQR = 61-75), nurses, median score of 68 (IQR = 58-75), and physiotherapists, median score of 63 (IQR = 53-70). These differences were also statistically significant, Kruskal-Wallis test = 293.998, $p < 0.001$. (Table 1)

There were statistically significant increases in the knowledge scores of doctors, nurses, and pharmacists after the training; ($z = -2.924$, $p = 0.003$), ($z = -13.777$, $p < 0.001$); and ($z = -4.823$, $p < 0.001$) respectively; and the other professionals ($z = -3.422$, $p = 0.001$). However, there was no statistically significant increase in the knowledge of physiotherapists after the training ($z = -1.014$, $p = 0.310$).

Median knowledge of all participants before the training was 50 (IQR = 40-58). However, after the training, this increased to 68 (IQR = 55-75). This difference was statistically significant, Wilcoxon Rank test = -15.049, $p < 0.001$ (table 2).

While the knowledge scores were high, a study in Zaria among health workers demonstrated that the knowledge of pain assessment is not always accompanied by appropriate practice or prescription of analgesics, with only 40% of health

workers routinely assessing pain while caring for cancer patients and only 51% treated symptoms of pain when patients complained. The same study showed as much 75% of respondents had no formal training on pain management.⁽⁹⁾ This agrees with other studies that found poor knowledge of pain assessment and cancer pain management to be an impediment to the treatment of cancer pain.⁽¹⁰⁾ The use of the World Health organization (WHO) analgesic ladder is an effective tool in treating over 80% of cancer pain.⁽¹¹⁾ The PFHI initiative dwelt extensively on the use of this tool in managing cancer pain.

The deficiency in knowledge of pain assessment and management in some of the health care workers before this training may be due to the fact that palliative care training is not in the curriculum of many of the health care workers in low resource settings and thus health professionals are without the skills to either assess or manage moderate and severe pain.⁽¹²⁾

Oral morphine solution has been compounded in Jos University Teaching hospital since 2012 at the commencement of the provision of palliative care in that facility but prescription of this drug that is considered the gold standard for the relief of moderate and severe pain in cancer patients was poor.

Results from University College Hospital Ibadan which has a longer experience with oral morphine prescription show that only 1.1% of morphine prescriptions met international guidelines and more education and advocacy targeted at prescribers (medical doctors) was needed.⁽¹³⁾ A similar audit of prescription patterns on oral morphine highlighted this challenge in Olabisi Onabanjo University Teaching Hospital Sagamu where 17.6% were inaccurate and did not conform to international guidelines.⁽¹⁴⁾

The efficacy of educational sessions in improving knowledge of pain assessment in patients with severe cancer pain was also demonstrated by Barathi working in India.⁽¹⁵⁾ and appears to be have been replicated by this intervention.

CONCLUSION:

Knowledge of pain assessment for the treatment of moderate and severe pain can be improved by educational initiatives targeted at health care workers and is necessary to improve cancer care and meet the palliative care goals of the Nigeria Cancer Control Plan.

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