Knowledge and the use of pain assessment among critical care and surgical nurses in the management of pain in Usmanu Danfodiyo university teaching hospital, Sokoto.

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Abstract

Effective pain assessment is attributed to be the basis upon which pain can be managed efficiently and should be routinely undertaken for all postoperative procedures. An individual's response to pain is peculiar and depends on the person and as such pain should be assessed on individual basis. This study aimed at examining the use of pain assessment scale in pain management among nurses in critical care and surgical areas of Usmanu Danfodiyo university teaching hospital, Sokoto. The study employed descriptive cross-sectional design. A stratified random sampling technique was used to select 148 nurses across 5 units within the area of study. Descriptive statistics like frequency, mean, standard deviation and percentage were used to describe distribution of data. Descriptive statistics were utilized in data assessing the distribution of data. Pearson's rank correlation was used in determining the relationship between knowledge and level of utilization of pain scales in pain management at the p=0.05 level of significance. A total of 148 study participants were involved in this study. More than half of the nurses, 79 (58.5%), were females; 53 (39.3%) of them were in the age category of 34-39 years. The magnitude of good knowledge towards pain management among nurses was 67.4% with a mean score of 16.41 ± 3.902. The magnitude for the level of utilization of pain assessment scale in pain management was 80% with a mean score of 4.30 ± 0.381. There is a positive relationship between knowledge and utilization of pain assessment scale in pain management with r=0.215. The study revealed that nurses working in critical care and surgical areas of Usmanu Danfodiyo university teaching hospital, Sokoto had good knowledge and utilize pain assessment tool in pain management than those reported in previous studies in southern Nigeria.

Keywords: Intensive Care, Critical care, Pain, Knowledge, Utilization, Statistics, Demographics.

Introduction

An effective pain assessment is attributed to be the basis upon which pain can be managed effectively and should be routinely undertaken for all postoperative procedures. An Individual's response to pain is peculiar and depends on the person and as such it is recommended that pain should be assessed on individual basis [1]. Screening used for pain should be a part of a regular assessment, and this has led the American Pain Society (APS) to proclaim pain as the "*fifth vital sign*".

Internationally, it is argued that many nurses in common practical settings are deficient in the knowledge about basic pain evaluation and management principles, this also applies to the attitude nurse have towards pain and its appraisal. With this it might be assumed that inadequate assessment and treatment of pain will continue to be an issue in the care provided in the health care system [2]. Also nurses are seen to be key persons who can improve the quality of pain management and who can provide nursing care to sufficiently meet the patient's needs. In this regard suggest that nurses with stronger knowledge and attitude tend to manage pain better with improved outcomes, and higher patient satisfaction scores. As such nurses play a vital role in pain assessment and management and must be knowledgeable regarding how best to assess and manage the pain [3].

Pain can only be managed by the use of pain assessment tools and these tools can be grouped into either single-dimensional or multidimensional scales. The measures involve patient self-report on a part or parts of the pain. Thus, the outcomes have to be viewed as guides and not absolutes. They ought to be seen as only aide to the history and physical examination of the patient. The frequently used tools to measure pain strength include verbal rating scales, numeric rating scales, and visual analogue scales [4].

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The American society of pain in 2015 estimated that 25 million U.S. adults had on a daily basis unremitting pain and 23 million more recount severe pain. While Uysal reported that in Turkey, 20-50% of the patients with cancer feel the pain at first admission; 30-40% of them suffer pain all through the treatment; and 60-70% of them experience the pain at terminal stage. In Saudi Arabia, Issa, Awajeh and Khraisat, suggested that pain assessment and management are vital components of nursing care and two of the most essential patient rights.

Undoubtedly, pain is the foremost challenge in critically ill patients admitted to Intensive Care Units (ICU) and 40-77.4% of ICU patient whine about the experience of pain. Most documented studies on pain in Sub-Sahara Africa have been studied mainly in relation to HIV/AIDS and cancer [5]. For example in Uganda, Kizza, Muliira, Kohi and Nabirye observed that nurses generally had adequate knowledge about pain assessment principles. However, there was a lack of knowledge about some key concepts such as value for patients' volition in pain assessment and anticipatory analgesia concepts [6]. This has been argued to be unprincipled to allow a patient to endure without taking suitable actions to reprieve his or her pain. Elsewhere, nurses were reported to have poor knowledge levels and attitudes with respect to managing pain of adult medical patients in Zimbabwe. In another study in Ghana, findings showed that more than 57% of nurses had deficient tools that can be used to assess and measure pain, 12% of the health care providers had never used any tool in the assessment of pain [7].

Pain assessment requires health care providers to have a good understanding of it, because poor evaluation and documentation is ascribed to the high occurrence of acute pain experienced by patients [8]. As such, standard pain assessment methods, with emphasis on numeric rating scale, offer a reliable and valid appraisal of this individual symptom. While evaluating a patient's pain level, it is paramount for nurses to be unbiased; nurses should demonstrate that they recognize the patient is in pain and endeavour to start an empathetic relation [9].

Materials and Methods

A descriptive cross-sectional design was used to determine the level of knowledge, perceived attitude and reported utilization of pain assessment scale in the management of pain among nurses in critical care and surgical nurses of UDUTH. UDUTH Sokoto is a tertiary health institution serving as a referral centre to all primary and secondary health facilities in its catchment area which consist of Sokoto, Kebbi, Zamfara, Katsina and Niger states [9]. It commenced operation in 1989 and is a 650 bed hospital with various specialties. The population for the study is a total of 148 nurses in critical and surgical areas of the hospital. Using existing strata, a stratified random sampling technique was used to select 148 nurses. The various departments in the hospital departments were classified into 5 main strata having nearly the same working conditions: (1) Accident and Emergency, (2) Trauma centre, (3) Intensive care unit and anaesthesia, (4) Surgical wards, (5) Oncology ward [10].

The instrument for data collection was a questionnaire adapted from Ferrell and McCaffery's Knowledge [10] and Attitudes Survey Regarding Pain (KASRP) self-report questionnaire. The questionnaire comprised of 47 items in English, including 24 knowledge questions and the interviewees will be asked to reply in two ways: 1=true; 0=false, with a total range of "0-24"; they were asked to answer 11 attitude questions according to five-point Likert scales: from "strongly agree=5" to "strongly disagree=1" with total score range of "11-55"; they were asked to answer 6 practice questions according to four-point Likert scales: from "always=5" to "less often=1" with total score range of "6-30" and they were asked to choose from 13 barriers questions that applies to them. Answers were evaluated considering the extent to which they are compatible with pain therapy standards commonly acknowledged by the international pain management guidelines. A knowledge score of 0-12 means poor knowledge and 13-24 means good knowledge [11].

The questionnaire was based on the contents of the objectives of the study. It was divided into five sections A-E.

- Section A: Elicited information on the respondents' demographic profile in terms of age, gender, ethnic group, religion, marital status, rank and years of service.
- Section B: Focused on the knowledge of pain assessment scale in pain management.
- Section C: Attitude of Nurses in the use of pain assessment scale in pain management.
- Section D: Practicability of the use of pain assessment scale in pain management.
- Section E: Factors affecting the use of pain assessment scale in pain management.

To determine the reliability of the instrument a pilot study of 10% of the sample size was carried out in specialist hospital Sokoto. The results were statistical analyzed and the results of the Cronbach's score presented below (**Table 1**).

Data collection and analysis: The copies of the questionnaire were then distributed to health care professionals in the various units and departments by the researcher and this lasted for four weeks. Therefore four weeks was used for data collection. Data obtained through the questionnaire was appropriately cleaned to ensure accuracy and consistency. The

Table 1: *Cronbach's Alpha test for reliability of instrument.*

Section	Cronbach's alpha	Cronbach's alpha based on standardized item	Number of Item
Knowledge of pain assessment scale	0.889	0.896	24
Practice of pain assessment scale in the management of pain	0.854	0.868	6
Factors hindering the practice of pain assessment scale	0.746	0.77	12
Source: Own computation using SPSS 22 version, 2022			

data collected was analyzed using the statistical package for social science version 23. The respondents' demographics, pain assessment tool related knowledge, attitude and practice were analyzed using frequencies and percentages.

Ethical consideration: An ethical approval to conduct the research was obtained from the ethical and research committee of UDUTH, Sokoto with UDUTH/HREC/2021.1108/V2. All information about the study was explained to the participants for them to understand the purpose of the study which is academic and therefore informed participants are informed that participation is voluntary and they can withdraw at any time [12].

Results

A total of 148 questionnaires were self-administered to the respondents and 142 were retrieved out of which 135 (95.1%) were completely filled and 7 incompletely filled. The analysis was based on the 135 completely filled questionnaires retrieved (**Table 2**).

Most of the nurses were within the age bracket of 34-39 and 28-33 representing 39.5% and 21.5% respectively. Female nurses were the majority representing 58.5% while males were 41.5%. Most of the respondents 68.9% had registered nurse certificate while 29.6% of them had bachelor of nursing science. Masters of Science in nursing was the highest educational attainment of the nurses representing 1.5% of the respondents [12]. Most of the respondents were nursing officer's representing 29.6% while others (Assistant Director Nursing) were 4.4% of the respondents. The duration in the position (years) by nurses was mostly 2-3 years representing 51.9% of the respondents while those who had spent 6 years and above were 15.6%. The respondents who have over 20 years' experience are 11.1% while those with less than 5 years are 16.3%, while majority of the respondents have been registered for 11-15 years representing 40%. The majority of the nurses were in surgical wards representing 48.1% respondents while anesthesia and intensive care unit representing 33.3% of the respondents (**Table 3**) [13].

It can be seen that 67.4% of the respondents have good knowledge about pain management scale while 32.6% of them have poor knowledge about pain management scale **(Table 4**).

From the above (**Table 4**) it can be seen that 80.0% of the respondents use pain scales in assessing pain prior to pain management while 20.0% of them do not use pain assessment scales in assessing pain prior to pain management (**Table 5**).

Table 5 shows factors affecting the use of pain assessment scale in pain management. The three most leading factors were; too much patients and nursing workload, with 85.2%, sedation interfering with pain assessment with 80% and lack of pain [14] assessment protocols with 78.5% while pain assess tools been difficult to use and complex to interpret and the use of pain assessment tool been time consuming and not practicable were the lease factors with 26.7% and 37% respectively (**Table 6**).

Table 2: *Socio-demographic characteristics of respondents N=135.*

Variable	Categories	Frequency	Percentage (%)
Gender	Male	56	41.5
	Female	79	58.5
Age	22-27	12	8.9
	28-33	29	21.5
	34-39	53	39.3
	40-46	28	20.7
	47+	13	9.6
Educational attainment	Registered Nurse Certificate	93	68.9
	BSc	40	29.6
	MSc	2	1.5
Position/Rank	Nursing Officer	40	29.6
	Senior Nursing Officer	26	19.3
	Principal Nursing Officer	24	17.8
	Assistant Chief Nursing Officer	21	15.6
	Chief Nursing Officer	18	13.3
	Others	6	4.4
Duration in position	Less than 1	20	14.8
	2-3 years	70	51.9
	4-5 years	24	17.8
	6 years and above	21	15.6
Number of years as registered nurse	0-5 years	22	16.3
	6-10 years	32	23.7
	11-15 years	54	40
	16-20 years	12	8.9
	21 years and above	15	11.1
Departments	A and E	20	14.8
	Trauma Center	14	10.4
	Oncology	8	6
	Anesthesia and Intensive Care Unit	28	20.7
	Surgical Wards	65	48.1

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Table 3: *Level of nurses' knowledge in pain management (N=135).*

Knowledge status	N	Percentage	Mean ± SD
Good knowledge	91	67.40%	16.41 ± 3.902
Poor knowledge	44	32.60%	10.68 ± 1.653
Total	135	100	

Table 4: *Table Level of reported utilization of pain scales towards pain management (N=135).*

Variable	N	Percentage
Good utilization	108	80.00%
Poor utilization	27	20.00%
Total	135	100

Table 5: *Factors affecting the use of pain assessment scale in pain management (N=135).*

S/N	Factor	True (%)	False (%)
1	Unavailability of pain assessment tools	104 (77)	31 (23)
2	Too much patients and nursing workload	115 (85.2)	20 (14.8)
3	Patients inability to communicate	81 (60)	54 (40)
4	Poor documentation of pain assessment and management	103 (76.3)	32 (23.7)
5	Lack of pain assessment protocols	106 (78.5)	29 (21.5)
6	No designated area for charting pain	104 (77)	31 (23)
7	Lack of familiarity with assessment tools	98 (72.6)	37 (27.4)
8	Pain assessment tools is difficult to use and complex to interpret	36 (26.7)	99 (73.3)
9	The use of pain assessment tools is time consuming and not practicable	50 (37)	85 (63)
10	Sedation interfering with pain assessment	108 (80)	27 (20)
11	Unconducive working environment	82 (60.7)	52 (39.3)
12	Lack of knowledge about pain tools.	96 (71.1)	38 (28.9)

Table 6: *Relationship between knowledge and utilization pain assessment scale in pain management (N=135).*

Knowledge *vs* Utilization	Mean ± SD	R-value	P-value
Knowledge	14.47 ± 4.430	0.215	0.011
Utilization	4.03 ± 0.623		

The above Table 6 presents positive relationship between knowledge and utilization of pain assessment scale in pain management with r=0.215. This suggested that the more the knowledge, the more the utilization of assessment scale in pain management among Nurses [15].

Discussion

Findings in the study shows 67.4% of nurses in critical care and surgical area had good knowledge about pain management. This finding was consistent with the studies done in United Kingdom (UK) 73.8%, and Chicago, United States of America, 74%, Saudi Arabia 87.5%, Italy (55%), Iran (66.6%), Gondar Ethiopia (66.9%) where these percentages of the study participants had good knowledge towards pain management as reported by Liyew et al. In addition, the findings were consistent that of Karamjeet where 66% had good knowledge about pain management also Umuhoza, reported 74% of nurses had good knowledge. Furthermore, the study is in tandem with findings of Oyetunji and Popoola, were 59.7% of nurses in south west Nigeria had good knowledge about pain management [16]. This suggests that the respondents show knowledge consistent with their contemporaries in different parts of the world with respect to knowledge about pain management [17].

Furthermore, findings suggest too much patients and nursing workload 85.2%, lack of pain assessment protocols 78.5% and sedation interfering with pain assessment 80% is the three leading factors militating against the use of pain assessment scales in pain management. This was similar to findings by Mędrzycka-Dąbrowska, Dąbrowski, Basiński, where heavy workload and lack of time were factors that militate the use of pain scales, Kizza and Muliira, where poor documentation and communication of pain assessment priorities, workload and familiarities with assessment tool limit the use of pain assessment tools [18]. Also Toba reported insufficient information about pain management, harsh regulation on the use of opioids and poorly assessed pain [17].

Also, findings shows there was positive relationship between knowledge and utilization of pain assessment scale in pain management with r=0.215. This is consistent with findings of Alzghoul and Abdullah, in which nurse's knowledge of pain management had a strong correlation with the use of pain assessment tool in pain management practice. The implication of this is that: The more the knowledge, the more the utilization of assessment scale in pain management among nurses this in turn will alleviate patients/client suffering as regards pain management [19].

Conclusion

On the basis of the findings of this study, the following conclusions were drawn: It was seen that of nurses in critical care and surgical area had good knowledge about pain

management and their knowledge is consistent with nurses in southern Nigeria and other parts of the world. Furthermore, the study revealed that patient's workload and lack of assessment protocols were the two leading factors militating the use of pain scale in pain management. Also, nurses exhibited a positive relationship between knowledge and the use of pain assessment scale in pain management among critical care and surgical areas of UDUTH, Sokoto.

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