



## Final year student's knowledge of pain management: A survey of nursing schools in Oyo state Nigeria

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### Abstract

**Background:** Literature is replete with studies on final year nursing students' knowledge on pain assessment and management across the world. This has not been studied in Nigeria. Therefore, it was the interest of the researchers to expand the frontier of knowledge to study the final year nursing students' knowledge of pain management in Oyo state Nigeria

**Method:** A descriptive cross-sectional design was used to examine the students' knowledge about pain, pain assessment and pain management. The study setting included a federal (UCH), state (Eleyele) and private (Bowen) nursing schools in Oyo state. A self-structured questionnaire developed from peer reviewed literature was used to collect data from 121 final year students in the three schools of nursing. The data was analysed by descriptive statistics and analysis of variance via the statistical product service solution (SPSS) version 23. Statistical significant was taken at P-Value less than 0.05

**Result:** The mean age of the respondents was  $21.6 \pm 2.4$ . The students demonstrated adequate knowledge of pain, pain assessment and pain management with the mean knowledge score of  $9.5 \pm 1.1$ ,  $9.0 \pm 1.3$ ,  $7.5 \pm 1.4$  respectively. Only 1.6% had poor knowledge of pain management. There was a significant relationship between the participants school of training and their knowledge of pain management (P-Value = 0.045)

**Conclusion:** The final year students demonstrated adequate knowledge about pain management, yet there is need for re-evaluation of the pain content of the nursing school programme curriculum especially in the area of pain physiology and pharmacology.

**Keywords:** student, knowledge, pain management, nursing school

### Introduction

Pain management is an integral part of clinical practice and as such pain has been categorised along side with respiration, temperature, pulse and blood pressure as vital signs to draw home the significant of pain assessment and management. Pain is a perceptual stimulus that affects the biological, psychological, social and emotional domain of man [1]. Suffering from pain intensity could be enormous and affect the patients' quality of life [2,3]. It is also the major reason for seeking medical attention and strong motivator for interventions [4-7]. To this end, a phenomenon of inappropriate and inadequate knowledge of pain management by the final year nursing students tragic the understanding of the effectiveness of the class of nurses to provide effective pain management [8]

For more than two decades, researches have been on-going to examine factors responsible for incompetency of nurses to adequately assess and manage pain. Recent studies have however focused on the content of pain management taught during the general nursing training programme and research results continue to identify poor knowledge of pain assessment and management among the final year nursing students particularly in the area of pain physiology and pharmacology [5, 9-11]. Jackson [12] and Latchman [13] affirmed that nursing students were taught little during training and this often affect their ability to provide the standard care for

patients. These students are potential nurses who in a short time will be certified, licensed and release into the clinical areas to practice.

Generally, studies on pain have reported inadequate knowledge of pain management among nursing students in many countries of the world: In China; Fang, Xu, Lin, Jin, Yan [14] reported inadequate knowledge and negative attitude towards pain management by group of nursing students. Similarly, Rahimi-Madiseh, Tavakol and Dennick [15] examined the current knowledge of nursing students in Iran and noted that nursing students demonstrated inadequate knowledge about pain and pain management. Also among nursing students in Jordan, Omar *et al.* [6] and Al Khalaileh & Qadire [10] reported insufficient knowledge about pain and pain management. There is a paucity of Nigerian studies on final year student' knowledge of pain assessment and management.

Nursing schools are expected to equip their students with the necessary skill required to be able to manage patients' pain in different settings of practice. More often than none, nursing students graduate without the optimum knowledge on pain assessment and control [8, 16]. This affects their ability to provide essential care of pain assessment and management to ensure comfort and bring the patients from dependency to independency.

There is indeed a gap between the curriculum provision,

knowledge perfusion and the translation of that knowledge to meet the societal needs [6, 7]. Were the nursing students taught the nitty-gritty of pain assessment and management? Are they familiar with various pain assessment tools? Are schools practical rooms well equipped with the pain rating scale? Do nursing students get expose to pain management during clinical posting? Do the teaching hospitals have centre for palliative or oncology care? These are pertinent questions that should be addressed by the school management.

One suggestion from most researchers is re- evaluation of the contents relating to pain management in schools of nursing curriculum [9, 15, 17]. A curriculum should be standard enough to be able to prepare students to meet the need of the society. Also, it appears that nurse tutors/educators are also failing students in this regards [13]. Therefore, integrated pain management content in the nursing school and nurse tutor/educator curriculum is essential which should be based on the International Association for the Study of Pain curricula.

The reported inadequate knowledge of pain management among the final year nursing students has been attributed to relent effort of nurse tutors/educators and curriculum developers by some scholars [9, 13]. However; another perspective is the usual practice of allowing the nursing students alone to check patients' vital signs in clinical areas with little or no supervision from the senior nurses. Also, from experience, pain assessment has not been accorded the position of the fifth vital signs; most nurses mainly monitor temperature, pulse, respiration and blood pressure. Consequently, where qualified nurses do not give pain assessment and management the right priority, nursing students are not likely to have a good grasp of pain assessment and management. In addition, nursing students' knowledge of pain assessment and management is not being tested in most nursing practical exams to buttress the assumption that nurses' view pain assessment to be less important.

Again, studies have also shown that even trained nurses lack the prerequisites knowledge about pain and pain management [13] and one of the factors that may be responsible for this include the fact that pain and pain management are not being adequately taught during the school period [9, 18]. To buttress this argument, Latchman [9] asserted that registered nurses in practice are likely to exhibit the same inadequate knowledge of pain management if recruited into similar study. In addition, Omar *et al.* [6] advocated that pain assessment and management should be adequately taught during in-service training to the nurses since they usually serve as role model for the nursing students and an adage says 'you can't give what you don't have.

Essentially, the authors noticed that there is paucity of studies that examined the knowledge of the final year students in nursing schools across Nigeria about pain, pain assessment and pain management. It is therefore the interest of the researchers to examine the persistent reported inadequate knowledge about pain management among the pre-licensed nurses in Nigeria.

**Specific objectives**

1. To assess final year nursing students' knowledge of pain
2. To assess final year nursing students' knowledge of pain assessment
3. To assess final year nursing students' knowledge of pain management

**Material and methods**

**Study Design:** The study was a descriptive cross-sectional survey. A self-structured questionnaire was used to assess final year nursing students' knowledge about pain, pain assessment and pain management

**Study Setting**

The study was carried out in three purposively selected nursing schools in Oyo state Nigeria. The schools comprised of federal, state and private nursing schools to ensure representativeness of the study sample. The selected nursing schools included school of nursing University College Hospital, Ibadan, school of nursing, Oyo State College of Nursing & Midwifery, Ibadan and school of nursing, Bowen University Teaching Hospital, Ogbomosho.

The school of nursing, University College Hospital (UCH), Ibadan is a federal government owns school of nursing established in 1952. It is strategically located within the Teaching Hospital to cater for the training of competent nurses for the growing health care industry.

The school of nursing, Oyo State College of Nursing & Midwifery is a state government owns nursing school located in Army barracks, Eleyele, Ibadan. The school was established in 1949 and has trained several competent nurses spread across Africa, Europe, America and Asia.

The school of nursing, Bowen University Teaching Hospital is a private owns school of nursing established in 1927 as part of the missionary activities in Nigeria. The school has trained several qualified nurses expanded the scope of nursing education and practice across the globe. It is a model school of nursing in South West Nigeria.

**Study population**

The study population was all final year students in school of nursing University College Hospital (UCH), school of nursing Eleyele and Bowen University School of nursing.

**Sample size and sampling method**

All the final year students in the three selected schools of nursing participated in the study because of small population.

**Sampling distribution of the three selected schools of nursing**

**Table 1**

Type of school	Name of school	Number of Final Year Students (N)
Federal	School of Nursing, University College Hospital	36
State	School of Nursing, Oyo State College of Nursing & Midwifery	53
Private	School of nursing, Bowen University Teaching Hospital	32
Total		121

**Instrument for data collection**

A self- structured questionnaire developed from peer reviewed literature was used to collect information from the final year students in the three schools of nursing based on the objectives of the study. The questionnaire consisted of 45 structured and unstructured questions. The questions was divided into five sections;

**Section A:** Demographic data.

**Section B:** Coverage of pain management during training.

**Section C:** Knowledge of pain.

**Section D:** Knowledge of pain assessment.

**Section E:** Knowledge of pain management

**Validity**

The validity of the research questionnaire was tested by face and content validity technique; the questionnaire was given to an expert in medical-surgical nursing with special interest in pain management and statistical analyst for critiquing, suggestions and amendments.

**Reliability**

The reliability of the instrument was done through a test-retest method: a pre-test was conducted on ten final year nursing students through random selection at School of nursing, Ilaro, Ogun state. The same number of questionnaire was re-administered two weeks after the first administration. The correlation coefficient [r] was calculated which was 0.874 and ensured the reliability of the instrument

**Procedure for data collection**

The questionnaires was administered to the final year nursing students in their classes during a free period and was collected as soon as they are satisfactorily filled.

**Ethical consideration**

The study commenced after approval from the UI/UCH ethical committee with approval number UI/EC/17/0445. The purpose of the research was explained to the respondents to obtain verbal and written consent before filling the questionnaire. Participation was mainly voluntary

**Methods of data analysis**

The data collected using the questionnaire was cleaned, entered and analyzed using descriptive statistics and analysis of variance via the Statistical Product Service Solutions (SPSS) version 23. The tables are presented in frequency, percentage, mean and standard deviation. Statistical significance was done at P value less than 0.05.

**Results**

**Table 1:** Socio-demographic characteristics of respondents

Variables	Frequency	Percentage	
School of Nursing	Eleyele	53	43.8
	UCH	36	29.8
	Bowen	32	26.4
	Total	121	100
Age (years)	18-20	39	32.2
	21-25	72	59.5
	26-31	10	8.3
	Total	121	100
		x=21.6±2.4	
Sex	Male	11	9.1
	Female	110	90.9
	Total	121	100
Tribe	Igbo	8	6.6
	Yoruba	105	86.8
	Hausa	1	0.8
	Others	7	5.8
	Total	121	100
Religion	Christianity	100	82.6
	Islam	21	17.4
	Total	121	100
No of years spent in training	Less than 2 years	1	0.8
	2-3 years	116	95.9
	More than 3 years	4	3.3
	Total	121	100

More than half of the respondents 72(59.5%) were between the ages 21 and 25 years. Majority, 110(90.9%) of the final year students were females and 105(86.8%) were Yoruba.

Also, most 100(82.6%) of the study participants practice Christianity and almost all 116(95.9%) had spent between 2 and 3 years in training. (Table 1).

**Table 2:** knowledge of pain

Statements on knowledge of pain	Correct response f (%)	Incorrect Response f (%)	I don't Know f (%)
Pain affects everyone at one time or the other	117(96.7)	4(3.3)	-
Pain is whatever the patient explains it to be	110(90.9)	11(9.1)	-
Nurses can choose to believe patient's explanation based on her discretion	89(73.6)	27(22.3)	2(1.7)
Observation of nonverbal cues are not necessary in pain assessment and management	105(86.8)	15(12.4)	1(0.8)
Response to pain varies from one person to the other	120(99.2)	1(0.8)	-
Response to pain varies in a person from one time to another and from one condition to another	121(100)	-	-
Anxiety and fear can influence pain perception and response	120(99.2)	1(0.8)	-
Spiritual beliefs and cultural values do not have any influence on pain response	94(77.7)	21(17.4)	6(5.0)
Pain is regarded as the 5 <sup>th</sup> vital sign	99(81.8)	5(4.1)	17(14.1)
Past experiences influence pain perception	119(98.3)	2(1.7)	-
The experience of pain continues after the sensation of pain ceases or subsides	50(41.3)	61(50.4)	10(8.3)

All the study participants are aware that response to pain varies in a person from one time to another and from one

condition to another while only 81.8% believed that pain is regarded as the 5<sup>th</sup> vital sign. (Table 2)

**Table 3:** Grading of knowledge of pain

Pain knowledge score	F (%)	Grade	Mean
7	8(6.6)	Moderate knowledge	x=9.5±1.1
8	12(9.9)	Adequate knowledge	
9	37(30.6)	Adequate knowledge	
10	45(37.2)	Adequate knowledge	
11	19(15.7)	Adequate knowledge	

Overall, majority of the respondents (93.4%) had adequate knowledge of pain with the mean knowledge score of 9.5 out

of a total of 11 and a standard deviation of 1.1. (Table 3)

**Table 4:** knowledge of pain assessment

Statements on knowledge of pain assessment	Correct response f (%)	Incorrect Response f (%)	I Don't Know f (%)
Nurses cannot assess pain in patients	111(91.7)	9(7.4)	1(0.8)
You can assess pain only by what the patient says	84(69.4)	36(29.8)	1(0.8)
It is important to ask of the characteristics of the pain felt by the patient	119(98.3)	2(1.7)	—
Patients' past experience is important during pain assessment	119(98.3)	—	2(1.7)
The intensity of pain can be assessed using numeric pain scale	120(99.2)	1(0.8)	—
I can use the pain assessment tools effectively	92(76.0)	18(14.9)	11(9.1)
Patients' views and beliefs about the pain is not important in pain assessment	101(83.5)	16(13.2)	4(3.3)
Assessment of pain includes the effect of the pain on activities of daily living	114(94.2)	3(2.5)	4(3.3)
Assessment of patient's level of anxiety is not important in pain assessment	108(89.3)	12(9.9)	1(0.8)
The nurse must be alert to the patient's nonverbal responses to pain during pain assessment	117(96.7)	4(3.3)	—

Almost all the participants (99.2%) are aware that the intensity of pain can be assessed using numeric pain scale.

However, 9.1% of the respondents did not know if they can use the pain assessment tools effectively. (Table 4)

**Table 5:** Grading of knowledge of pain assessment

knowledge of pain assessment score	F (%)	Grade	Mean
4	2(1.7)	Moderate	x=9.0±1.3
6	3(2.5)	Moderate	
7	8(6.6)	Adequate	
8	24(19.8)	Adequate	
9	29(24.0)	Adequate	
10	55(45.5)	Adequate	

Many of the study participants (95.9%) had adequate knowledge of pain assessment while only a small proportion (4.1%) had moderate knowledge of pain assessment. The

mean knowledge score was 9.0 out of a total of 10 with a standard deviation of 1.3. (Table 5)

**Table 6:** Knowledge of pain management

Statements on knowledge of pain management	Correct Response f (%)	Incorrect Response f (%)	I Don't Know f (%)
Pain management requires a multi-disciplinary approach	103(85.1)	5(4.1)	13(10.8)
Establishing a good interpersonal relationship is essential in pain management	119(98.3)	1(0.8)	1(0.8)
Nurses should not be clients' advocate for effective pain management	92(76.0)	18(14.9)	11(9.1)
Pain can only be managed by the use of drugs	108(89.3)	10(8.3)	3(2.5)
Transcutaneous Electrical Nerve Stimulation (TENS) is a pharmacological method of pain relief	38(31.4)	63(52.1)	20(16.5)
Patient education plays an important role in the management of pain	111(91.7)	7(5.8)	3(2.5)
Analgesic should be given before pain starts, if pain is predictable	72(59.5)	42(34.7)	7(5.5)
Analgesic should not be given until pain intensity is high	98(81.0)	18(14.9)	5(4.1)
Drug dependence means that a person requires larger doses of a drug to provide the same effect as provided by the original dose	93(76.9)	19(15.7)	9(7.4)
Narcotics should not be given to patients with cancer pain so that patient would not be addicted	61(50.4)	47(38.8)	13(10.8)

Most of the study participants (98.3%) agreed that establishing a good interpersonal relationship is essential in pain management. More than half of them (52.1%) did not

know that Transcutaneous Electrical Nerve Stimulation (TENS) is not a pharmacological method of pain relief (table 6).

**Table 7:** Grading of knowledge of pain management

knowledge of pain management score	F (%)	Grading	Mean
2	2(1.6)	Poor Knowledge	x=7.5±1.4
5	6(5.0)	Moderate Knowledge	
6	25(20.7)	Moderate Knowledge	
7	25(20.7)	Adequate Knowledge	
8	33(27.3)	Adequate Knowledge	
9	26(21.5)	Adequate Knowledge	
10	4(3.3)	Adequate Knowledge	

Although, a large percentage (72.8%) of the study participants had adequate knowledge of pain management, 1.6% of these population still had a poor knowledge of pain management. The mean knowledge score was 7.5 out of 10 and a standard deviation of 1.4. (Tables 7).

**Table 8:** Relationship between participants’ school of training, age, religion, tribe, sex and their knowledge of pain management

Variable	Mean Knowledge Score	SD	N	t/F	P value
School of Nursing					
Eleyele	7.11	1.42	53	3.187	0.045
UCH	7.69	1.41	36		
Bowen	7.78	1.10	32		
Age					
18-20	7.35	1.02	39	0.677	0.757
21-25	7.50	1.52	72		
26-31	8.08	1.63	10		
Religion					
Islam	7.75	1.29	21	0.939	0.350
Christianity	7.44	1.36	100		
Tribe					
Igbo	8.00	1.31	8	1.226	0.303
Yoruba	7.45	1.36	105		
Hausa	6.00	0.00	1		
Others	6.83	1.33	7		
Sex					
Male	7.00	1.34	11	1.170	0.244
Female	7.50	1.37	110		

The results also showed a significant relationship between the participants’ school of training and their knowledge of pain management (P= 0.045). In contrast, there was no significant relationship between the knowledge of pain management and participants’ sex, age, tribe or religion. (P=0.244, P=0.757, P=0.303 and P=0.350 respectively) (Table 8)

**Discussion**

The current study examined final year students’ knowledge about pain, pain assessment and pain management and our findings are inconsistent with the findings in most studies reviewed. Our findings revealed adequate knowledge about pain, pain assessment and pain management among the study population and this is in contrast to studies conducted by Rahimi-Madiseh *et al.* [15]; Omar *et al.* [6]; Al Khalailah & Qadire [10]; Ung *et al.* [8]; Allred & Gerardi [16]; Fang e al [14] where nursing students were noted to demonstrate inadequate knowledge about pain assessment and management. Our finding shows that there is no widespread deficiency in curriculum provision of pain management among the nursing schools in Oyo state Nigeria as often depicted by previous studies conducted among nursing students outside Nigeria. For instance, Omar *et al.* [6] studies in Jordan revealed

inadequate knowledge of pain management both among nursing students and staff whereas in Nigeria, this current study indicated that nursing students in particular were well groomed in pain assessment and management in that only 1.6% (table 7) of the studied population had poor knowledge of pain management.

Nonetheless, although the current study shows that final year’s nursing students in the studied environment had adequate knowledge about pain, pain assessment and pain management. Literature is replete with studies who concluded that trained nurses in clinical practice lack adequate knowledge about pain assessment and management. It remains unclear why nursing students could demonstrate adequate knowledge of pain assessment and management while the nurses in practice lack adequate knowledge about the subject. A popular opinion was that most nurses in Nigeria do not give credence to study after graduating from the nursing school. If this is the picture, nurse leaders in Nigeria need to advocate for continuous education for nurses in clinical practice.

Similarly, although the students have adequate knowledge about pain and its assessment, few of the participants however demonstrated poor knowledge about pain management. This corroborates Latchman [9]; Issa *et al.* [5]; Al Khalailah & Qadire [10] studies which identified poor knowledge of pain management among final year nursing students particularly in the aspect of pain physiology and pharmacology.

There is a concern about the content and methodology of teaching an aspect of pain physiology and pharmacology by the nurse tutors/educators. It can be argued that nurse tutors themselves lacks adequate knowledge about physiology of pain and in-depth drug management and this is consistent with Latchman [13] opinion that nurse tutors/educators are not proficient in some aspect of pain management. This calls for synergy with expert in physiology and pharmacology to argument the pain content taught by the nurse tutors/educators.

Furthermore, an important perspective is the curriculum development for the general nursing programme which may contain minimal provision for pain physiology and pharmacology aspect of pain content. The nurse tutors/educators will mainly teach within the coverage of the curriculum and this underscore the current advocacy for all nursing programmes to be moved into the universities. This development is in consonance with Rahimi-Madiseh *et al.* [15]; Latchman [9]; Duke *et al.* [17] suggestion that nursing school curriculum should be reviewed considering the aspect of pain management.

Surprisingly, the study revealed differences in final year students’ knowledge of pain management across the nursing schools. The students in mission school (private) demonstrated higher knowledge than the students in federal government owns school while students in state owns school was lower than the former. The researchers optimize that this differences is not influence by the geographical location of the training hospitals but may be significantly related to the clinical exposure and the in- depth of the aspect of pain taught in training. Essentially, this differences confirmed the hypothesis that students train in mission hospitals usually have more exposure to clinical practice than the students train in government teaching hospitals. Consequently, the students’ knowledge of pain management has no relationship with the students’ gender, age, tribe or religion.

### Limitation of the study

There is paucity of Nigeria studies on pain knowledge among final year nursing students. All the study reviewed were conducted outside Nigeria. To the best of our knowledge, this is the first study on this issue in Nigeria. Therefore, we suggest further studies on knowledge of pain, pain assessment and pain management among final year nursing students and qualified nurses in Nigeria to increase the literature bank

### Implication for nursing education and practice

The final year students demonstrated adequate knowledge about pain management however, there is need for re-evaluation of the pain content of the nursing school programme curriculum especially in the area of pain physiology and pharmacology. Furthermore, expert in physiology and pharmacology are required to teach an aspect of pain content of the curriculum. Also, in-service training and Mandatory Continuing Professional Development Programme (MCPDP) for nurses should cover pain management to bridge the gap in knowledge on pain assessment and management among nurses.

### Conclusion

The study revealed adequate knowledge about pain, pain assessment and pain management among final year nursing students contrary to most studies reviewed from literature. Nevertheless, there is need for closer assessment of the aspect of pain physiology and pharmacology content of the curriculum.

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