ASSESSMENT OF FOOD CRAVING AND AVERSION PRACTICES AMONG PRIMIGRAVID MOTHERS IN ENUGU METROPOLIS, NIGERIA.

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ABSTRACT

The study assessed food craving and food aversion practices among primigravid mothers in Enugu Metropolis using survey research design. Convenient sampling technique was used to select hospitals and pregnant mothers attending antenatal clinics. Questionnaire was used for data collection. The findings showed that majority (56.9%) of the primigravid women crave for fruits, beverages and snacks or averse to beans-based food, cassava-based food and spices example, garlic. Also, food craving and aversion were mostly experienced during the first trimester. Based on the result, it was then recommended that public health nurses/midwives should be encouraged to educate pregnant women, especially the primigavid women on nutritional needs during pregnancy and the implication of food craving and aversion in pregnancy.

Keywords: Food craving, Food aversion, practices, Prmigavid mothers

INTRODUCTION

Pregnancy is often accompanied by a variety of nutritionally linked problems that pregnant mothers have to cope with (Dickason et al, 2010). In order to cope with these problems and to proceed with a successful delivery, mothers experience a number of physiological and behavioral adjustments such as food craving and food aversion during pregnancy. Food cravings are intense desire to obtain certain foods which are very interesting to the individual and may not be what the individual need at that time. On the other hand, food aversion is a strong dislike of a particular food during pregnancy (Olusanya and Ogundipe, 2012). Food craving and aversion if not properly managed may interfere with the dietary intake of the pregnant women and sometimes cause serious problem such as low birth weight of the baby and deficiency of iron, calcium, protein, vitamins A, D, B6 and folic acid in the mother.

Safaii (2013), stated that some researchers believe that food craving is a mechanism to protect the fetus and the mother from nutrient deficiencies and suggest that craving is triggered off by a deficiency in one or more nutrients. This opinion appears to be supported by a study done by Demissie, Muroki and Wambui, (2012) which revealed that 43% of pregnant women crave for nutritious foods that are lacking in their diet. According to Nyaruhucha (2012) some women crave for non-food substance like soil, clay, chalk, charcoal and some believe that ingestion of non-food substance relieves nausea and vomiting. Glans (2013) also noted that aversions are physiological mechanism that protects the fetus either from nutrient deficiencies by prompting mothers away from quality and monotonous foods or from excess foeto-toxic substance present in the food, thus food aversion could be beneficial. The researchers aimed at assessing food craving, aversion and foods involved in the practices among prigravid mothers attending antenatal clinics in Enugu Metropolis as well as the types of foods involved. The result will be of use for public health nurses/Midwives in planning nutrition education for pregnant mothers.

Research questions

1. What is the prevalence of food craving and aversion among pregnant women in Enugu metropolis?

2. What type of food do pregnant women in Enugu metropolis crave for?
3. To what extent does a pregnant woman crave for non-food items?
4. At what period of pregnancy do pregnant women experience food craving and aversion?
5. What are the reasons for craving of food among pregnant women in Enugu metropolis?

METHODOLOGY

Survey research design was used for the study. This study was carried out in the health facilities in Enugu metropolis that were selected using the convenience sampling technique. They are Uwani Cottage Hospital, Ikirike Health Centre, Eastern Nigeria Medical Centre, Balm of Gilead hospital, Amaechi Cottage Hospital, Obeagu Amachi Health Centre, St. Getrude Hospital and Maternity and St. Merkin Hospital and Maternity. A total of 267 pregnant mothers was selected using the convenience sampling technique. Instrument for data collection was questionnaire developed by the researchers. Reliability of the research instrument was determined using test-retest reliability method, and yielded a reliability coefficient of 0.87. Permission was sought from the Heads of selected health facilities, as they have no ethical committee and informed oral consent was obtained from each of the respondents. Participants were assured of confidentiality of any information given. Descriptive statistics, which include frequency, percentage, mean and standard deviation were used to analyze the collected data which aided answering of research questions. Results were presented in tables and charts.

RESULTS

As presented in figure 1, the prevalence of food craving and aversion was high. This is because out of the 267 pregnant women used for this study, 75% had a craving for food. The frequency of food craving among the respondents, 90 (25%) had no craving for some food, 109 (31%) averse at least one food while, 158 (44%) crave for more than one food. Also, Table 1 shows the stages of pregnancy at which food craving is experienced. 251 (94.0%) experience it at 1st trimester, 16 (6.0%) experienced it at the 2nd trimester while none experienced it at 3rd trimester.

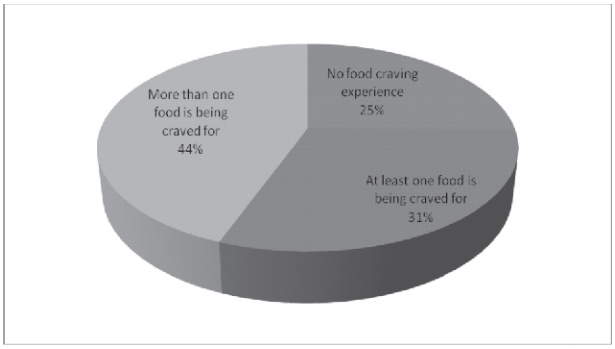

Fig 1: Respondents who crave for food

Table 1: Stage of pregnancy at which the primigravid women experience craving

Stage of pregnancy	N	%
1st trimester	251	94.0
2nd trimester	16	6.0
3rd trimester	0	0
Total	267	100

Also, Table 2 shows the types of food crave for or averted to by first time pregnant women. The most commonly craved food were fruits 152 (56.9%) followed by soft drinks 128 (47.9%) then snacks 109 (40.8%) others are plantain 66 (24.7%), vegetable 66 (24.0%) nodules 59 (22.1%), milk and milk products 51 (19.1%), cassava based food 48 (18.0%), fish and fish products 43 (16.1%), beverages 43 (16.1%), cereal based food 36 (13.5), meat and meat product 35 (13.1%) and beans based food 20 (7.5%).

The result also showed that among the 357 respondents, majority 273 (76.5%) has no craving for non-food items, 79 (22.1%) crave for one food item and a few 5 (1.4%) crave for more than one food item. The most craved food item were soft white stone 67 (79.8%), ash 7 (8.3%), charcoal 6 (7.1%) and soil 4 (4.8%).

Table 2: Types of food craved by primigravid women

Category of food	N	Percentage (%)
Cassava based food	48	18.0
Cereal based food	36	13.5
Meat and meat product	35	13.1
Vegetable	64	24.0
Fruits	152	56.9
Fish and fish products	43	16.1
Beverages	43	16.1
Yam based food	28	10.5
Plantain	66	24.7
Beans based food	20	7.5
Snacks	109	40.8
Soft drinks	128	47.9
Milk and milk products	51	19.1
Noodles	59	22.1

Craving for non-food	N	%
No non-food item is craved	273	76.5
At least one non-food item is being craved for	79	22.1
More than one food item is being craved for	5	1.4

Non- food item craved for			
Non- food item	N	%	Rank order of food item craved for
Soil	4	4.8	4th
Soft white stone	67	79.8	1st
Charcoal	6	7.1	3rd
Ash	7	8.3	2nd
Total	84	100	

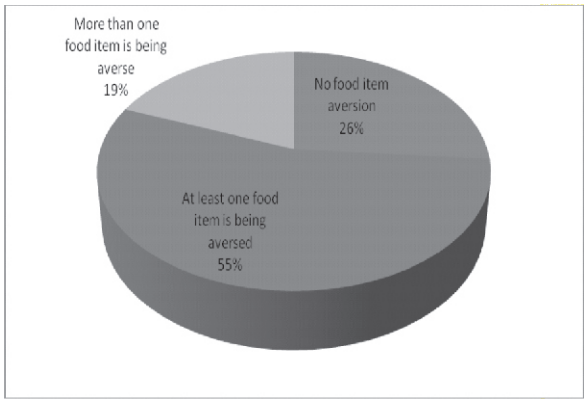

Fig 2: Respondents who have aversion for food

Similarly, Figure 2 shows the frequency of food aversion among first time pregnant women, the proportion of women who reported no food aversion experienced were 94 (26%), 195 (55%) averse at least one food item and 64 (19%) averse more than one food item.

Table 3: Stage of pregnancy at which primigravid women experience aversion

Stage of pregnancy	N	Percentage
1st trimester	249	96.1
2nd trimester	9	3.5
3rd trimester	1	0.4
Total	259	100

As presented in Table 3, majority of the respondents [249 (96.1%)] experience aversion in 1st trimester than the 2nd [9 (3.5%)] and 3rd trimester [1 (0.4%)].

While Table 4, revealed that, the most commonly aversed foods were beans-based food [104 (39.5%)] followed by cassava-based food 54 (20.5%) and spices eg. Garlic 42 (16.0%) others were beverages 39 (14.8%), meat and meat products 37 (14.1%) Cereal based food 34 (12.9%), milk and milk products/fish and fish products 32 (12.2%) respectively, vegetable 18 (6.8%), soft drinks 16 (6.1%), fruits 14 (1.3%), snacks 10 (3.8%) and plantain 4 (1,5%).

Table 4: Types of food primigravid women have aversion for

Responses	Frequency	Percentage
Cassava based food	54	20.5
Cereal based food	34	12.9
Meat and meat product	37	14.1
Beans based food	104	39.5
Milk and milk product	32	12.2
Vegetables	18	6.8
Fruits	14	5.3
Fish and fish products	32	12.2
Beverages	39	14.8
Yam based food	19	7.2
Plantain	4	1.5
Snacks	10	3.8
Soft drinks	16	6.1
Spices eg. Garlic	42	16.0

On the other hand, Table 5 reveals that, the majority of the respondents [106(39.7%)] reported that their reason for food craving is for feel of satisfaction. However 97 (36.3%) of the respondent reported that it is for good health, [53 (1.9%)] believed that craving is because of availability, [48 (18.0%)] believed that craving reduces nausea and vomiting, [36 (13.5%)] reported that the food is easy to prepare, [27 (10.1%)] had no particular reason for their craving, [26 (9.7%)] reported that the food flavor made them to have intense urge to consume the food, [11 (4.1%)] stated that culture/belief influence their food craving and few respondents [6 (2.2%)] reported that color of food made them to crave for such food.

Similarly, 48 (57.1%) of the respondent reported that non-food substance prevents nausea and vomiting, 15 (17.9%) of the respondent believe that they get satisfaction from it. Other reasons include the smell of pica substances 13 (15.5%) and no reason 8 (9.5%).

The majority of the pregnant women 133 (50.6%) believed that food aversion to certain foods helps to overcome the symptoms of nausea and vomiting, 99 (37.6%) reported that aversion of food causes heartburn, 69 (26.2%) believed that certain food were avoided because they can affect the size of the baby other reasons were Taboo/belief 32 (12.2%) and causes stomach pains 30 (11.4%).

Table 5: Reasons for their specific food craving and aversion

	Frequency	Percentage
For good health	97	36.3
Colour of food	6	2.2
Culture/believe	11	4.1
Availability	53	19.9
Food flavor	26	9.7
Easy to prepare	36	13.5
It reduces nausea and vomiting	48	18.0
For satisfaction	106	39.7
Total		
Reasons for craving non- food items		
	Frequency	Percentage
No reason	27	10.1
Smell of pica substance	13	15.5
Prevent nausea and vomiting	48	57.1
Get satisfaction	15	17.9
No reason	8	9.5
Reasons for food aversion		
	Frequency	Percentage
Can affect the size of the baby	69	26.2
Causes stomach pains	30	11.4
Taboo/believe	32	12.2
Nausea and vomiting	133	50.6
Causes heart burns	99	37.6
No reason	27	10.3

DISCUSSION

The high prevalence of food craving and aversion found in this study is comparable with other studies in developed and developing countries like Nigeria, which ranges from 50-80% (Olusanya & Folashade, 2012; Tsegaye et al, 2012; Ogunbjuyigbe et al, 2012; Nyaruhucha, 2009; Ejei-Okeke & Analuba, 2014; Koryo et al, 2012; & Kroskey, 2013). Craving for a non - food item is at the minimal as the majority do not crave for any non- food item. This finding implied that it was only about one quarter of the respondents crave for non- food item which is better because craving for non- food item could interfere with the absorption of vital nutrients and may also be toxic for the baby and mother.

This finding is in line with Nyaruhucha (2009) which reported that the food most craved by the largest proportion of pregnant women were fruits. This was also supported by Ejei-Okeke and Analuba (2014) who reported that fruits and vegetables were mostly craved by pregnant women. This finding, however disagreed with the study by Handisco (2014) who reported that pregnant women most craved food were meat and egg. This finding also is not in line with Koryo et al (2012) and Hook (2014) that reported that pregnant women crave chocolate, candies and milk-based product most. Their finding

could be attributed to the kind of food items available in the area of study. Chocolate, candies and milk are not common food items in South Eastern Nigeria. The non- food item mostly crave by first time pregnant women were soft white stone (nzu) 67 (79.8%). The soft white stone (nzu) is popularly known in the study area and being consumed by pregnant and non-pregnant women in the locality. It is obvious that the belief held in the area that it prevents nausea made the first-time pregnant women to crave for this non- food item. This study is also contrary to the study by Nyaruhucha (2009) who reported that the type of non- food craved by pregnant women is soil. This again may also be explained by cultural belief.

Result in this study revealed that food craving and aversion were mostly experienced during the first trimester. This is in line with Nyaruhucha (2009) who attributed this to hormonal changes. The majority of the first-time pregnant women averse / avoid beans-based food, followed by cassava-based food and spices e.g. Garlic. There is a need for nurses to provide appropriate nutrition counseling to guide the first-time pregnant women. The aversion to garlic supports the observation by Knox (2013) which stated that garlic is a trigger as taste and smell causes nausea and vomiting among some pregnant women. This finding is, however, contrary to the study by Ejei Okeke and Analuba (2014) who reported that the most averse food by pregnant women were fried and fatty food.

A closer look at the reason given for craving of food items revealed that they were not nutritionally correct as majority indicated fruits as foods that are crave and averse, still they consumed it to satisfaction. This suggests that in spite of the high literacy rate (91.6%) among the respondents, they lacked correct and adequate nutritional knowledge as it concerns food craving and aversion. This finding is in line with a report by Koryo, Nti and Adamu (2012) who reported that reasons expressed by the pregnant women for food craving is for satisfaction. The respondents' second main reason for food craving is good health which is in line with the study by Hook (2004) who stated that the reason for pregnant women craving is concerned for personal or fetal health. The finding also revealed that the majority of the first-time pregnant women indicated that ingestion of these substances relieves or prevent nausea and vomiting. This finding tally with the report by Nyaruhucha (2009) who pointed out that the reason for craving non- food item is because of cultural belief and attitude. This is understandable since most of them craved for food during the first trimester, which is the period when most pregnant women experience nausea and vomiting.

Concerning the reason for food aversion, the result shows that the majority (57.1%) of the first-time pregnant women indicated that the occurrence of nausea and vomiting made them to averse certain food items. This study affirmed the finding by Ogunbjuyigbe et al (2012) who pointed out that the reason for food aversion by pregnant women were nausea and vomiting.

Conclusion andRrecommendations

Based on the findings, it was concluded that the majority of the primigravid women crave for fruits, soft drinks and snacks or averse to beans-based food, cassava-based food and spices eg. Garlic. The few who craved for non- food items craved mostly for soft white stone (nzu). It is then recommended that Public health nurses/Midwives should be encouraged to educate pregnant women, especially the primigavid women on nutritional needs during pregnancy and the implication of food craving and aversion in pregnancy.

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ASSESSMENT OF NURSES KNOWLEDGE ON PAIN ASSESSMENT TOOLS IN SELECTED HOSPITAL IN BENIN CITY EDO STATE, NIGERIA.

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ABSTRACT

Nurses and physicians interact with patients and families, they assess and treat their pain. Nurses' knowledge of pain assessment tools can affect the management and treatment options of their patient's pain. The purpose of this study was to assess the knowledge of pain assessment tools among nurses at University of Benin Teaching Hospital. A descriptive cross-sectional survey design was used and a sample size of 306 was selected from a total population using Taro Yamane's formulae. The instrument was a self-structured questionnaire containing closed ended questions. The questionnaire was administered using non-probability purposive sampling. Data obtain were analysed using descriptive statistics and hypothesis were tested using chi-square and t-test. Result shows that majority of the respondent 196(68.3%) have good knowledge of pain assessment tools; 83(28.9%) have average knowledge while the remaining 8(2.8%) have poor knowledge; also the study revealed that males 71(82.6%) are more knowledgeable than females 125(62.2%) in terms of pain assessment tools. The hypothesis tested reveal a significant relationship between level of knowledge and social demographic characteristics such as sex (^{2} = 11.540; p =0.001), age (^{2} = 0.527; p = 0.000), level of education (^{2} = 7.253; p =0.027) and Working experience (^{2}=19.315; p = 0.000). However, there was no difference in the knowledge of male and female nurses (t=1.353; p = 0.177). On the basis of these findings, recommendations were however made that there is need to design and implement a continuous professional education program on pain and its assessment with special focus on method of assessment.

Keyword: Knowledge, Pain assessment tool

INTRODUCTION

Each day, millions of people suffer from pain, whether they are in the hospital, their homes, or assisted living facilities. The experience of pain negatively influences their daily lives. As nurses and physicians interact with patients and families, they assess and treat their pain. Nurses and physician's knowledge and use of pain assessment tools can affect the management and treatment options of their patient's pain. Nurses are major players in pain management, especially in a country with inadequate number of doctors. It is estimated that Nigeria currently has a poor doctor-patient ratio of 1:3500 against the World Health Organization (WHO) standard of 1:600. This is grossly inadequate to cater for over 170 million populations. Maintaining an optimal level of comfort is a universal goal for physicians and nurses because pain is one of the major experiences that can minimize patients' comfort. These patients experience pain from preexisting diseases, invasive procedures, or trauma (Arif & Grap, 2009). Pain assessment is the first step in proper pain relief, an important goal in patients' care (Gelinas et al., 2006). According to the International Association for the Study of Pain (IASP) (2010), pain is a sensory and emotional experience associated with actual or potential damage or described in terms of such damage. It is a sensation that is strictly subjective in nature. Pasero and McAffery (2010) defined pain as whatever the experiencing person says it is, existing whenever the experiencing person says it does. This exemplifies the importance of the patient's perspective and input, which supports

the individual's self-report as the single most reliable indicator of the existence and severity of pain (Pasero, 2009). Pain assessment is crucial if pain management is to be effective. Nurses are in a unique position to assess pain as they have the most contact with the patient and their family in hospital. Pain is multidimensional therefore assessment must include the intensity, location, duration and description, the impact on activity and the factors that may influence the patient perception of pain (bio-psychosocial phenomenon). Failing to assess pain may affect quality of life, and increase the length of stay of hospitalized clients (Zanolin et al., 2007). There are several validated assessment tools in the literature to assess pain; for example, the Numeric Rating Scale (NRS), Visual Analog Scale (VAS), Verbal Descriptor Scale (VDS), and Wong-Baker Faces Scale (WBFS) (ACCN, 2013; Pasero and McCaffery, 2010). For critically ill adults who cannot communicate properly, there are also several validated tools including the, Behavioral Pain Scale (BPS), Critical-Care Pain Observation Tool (CCPO), and Face, Legs, Activity, Cry, and Consolability (FLACC) pain scale (ACCN, 2013). Untreated and undertreated pain has debilitating effects and significantly interferes with the patient's physical, emotional and spiritual well-being, thus can alter the patient's quality of life (Ho et al., 2013; Alexandrina de Jesus & Jacinta, 2013). Quality pain assessment requires nurses to be knowledgeable about pain, the scale/tool, its consequences, and the key principles embedded in the current best evidence (Polomano et al., 2011). Available studies show that a large number (50%) of nurses working in critical care settings such as emergency departments lacks knowledge on key aspects related to pain assessment and its tools (Moceri & Drevdahl, 2014). It was reported that the reasons for the inadequacies in pain management, include inadequate knowledge of pain assessment tool/scale, utilization, monitoring, and pharmacological treatment of pain especially frequently used opioids (Bernardi et al., 2007, 2006, Pediaditaki et al., 2010).

In another study by (Moceri & Drevdahl, 2014) on pain management in selected hospitals in Ilorin, the result showed that nurses were found to be deficient in knowledge of pain assessment, its tools and utilization. Wang & Tsai (2010) reported the analgesic knowledge and pain assessment tools for nurses were lower than 30%, which inferred nurses' ability to integrate pain knowledge into clinical scenarios needed strengthening. There were inconsistencies, as 85.4% of nurse respondents thought patients overestimated their pain, but research has established that nurses underestimate the pain (Rose et al., 2011). Moreover, there is the continued lack of knowledge about pain assessment tools and its documentation among nurses (Gelinas et al., 2004), for example, a study conducted in Quebec reported a pain assessment score was documented for only 3/183 pain episodes in 52 patients (Gelinas et al., 2004). This may have been attributed to a lack of knowledge of pain assessment and its tools.

A descriptive cross-sectional study conducted by Manwere, Chipfuwa, Mukwamba & Chironda (2012) on the knowledge of Registered Nurses toward pain assessment tools in adult medical patients at a provincial hospital in Zimbabwe, shows that registered nurses had inadequate knowledge and the knowledge of pain assessment tools was associated with years of experience in nursing profession. It states that 84% of the respondents failed to give correct tools used for pain assessment. 76% gave incorrect ideal time for pain assessment and 76% failed to identify the type of pain measuring scale.

Similarly, a descriptive exploratory study conducted by Mohamed, Morsy & Ali (2010) on Nurses' knowledge and practices regarding pain assessment tools at Cairo University Hospital Eygpt, using 60 nurses with different

educational categories. The result revealed that the majority of the studied sample (93.3% & 95%) had an unsatisfactory knowledge and practice level respectively. Also, a study conducted by Kituyio, Imbayo, Wambami, Sisenda & Kuremu (2011) aimed at determining the knowledge of pain assessment tools among 200 nurses at Moi Teaching and Referral Hospital in Kenya, the result shows that only 41% of nurses indicated that they had sufficient knowledge of pain assessment tools. In the same study, 21% of all the participants had never had any formal teaching in relation to knowledge of pain assessment tools. In addition, the findings showed that duration of service among all the health care providers (nurses) did not influence the respondents' knowledge of pain assessment tools. More also a descriptive and cross-sectional study conducted by Yava, Cicek, Tosun, Ozcan, Yildiz, Dizer (2010) on knowledge and attitude of nurses about pain management in Turkey using 246 nurses. The result shows that nurses did not did not have adequate knowledge of assessment tools and management.

Furthermore, a descriptive study to assess the knowledge and attitudes of registered nurses towards pain management of adult medical patients carried out in Bindura Provincial Hospital, South Africa by Ancia, Tirivanhu, Maceline and Geldine (2015), 50 consenting registered nurses was drawn using a systematic random sampling method. Forty-two (84%) of the respondents failed to give correct tools used for pain assessment, 38 (76%) gave incorrect ideal time for pain assessment and 39 (76%) failed to identify types of pain measuring scales.

Kizza and Muliira (2016) in a study aimed at describing the knowledge and practices related to pain assessment, and perceived barriers among nurses caring for critically ill - adult patients (CIAP) using a descriptive cross-sectional design among 170 nurses caring for CIAP in Uganda. Results shows that Nurses reported poor pain assessment practices, including lack of use of pain assessment tools and guidelines, which were significantly associated with workload and the low priority set to pain assessment and management

Despite the growing awareness on pain management, patients still suffer from unnecessary pain in many hospitals with the resultant negative effect on physical, emotional and spiritual health and quality of life (Lui & Fong, 2008, Kankkunen et al., 2009a; Kankkunen et al., 2009b). Research related to nurse's knowledge of pain assessment tools in clinical setting remains limited despite the increase awareness of the significance of pain among patients (Mohommed, 2010). Few empirical studies available focus on pain management using pharmacological approach, but there is dearth of studies on nurse's knowledge of pain assessment tool which is the bed rock of pain management especially in this part of the country and in Edo state in particular. This study was conducted to assess nurse's knowledge of pain assessment tool.

Purpose of the Study

The purpose of this study is to assess nurses' knowledge of pain assessment tools in University Benin Teaching Hospital Benin city Nigeria.

Specific objectives

The specific objectives of the proposed study include,

1. To assess the level of knowledge of pain assessment tools among nurses in University of Benin Teaching Hospital Benin city (UBTH).
2. To examine the relationship between level of knowledge of pain assessment tool and socio-demographic characteristics among nurses in UBTH.
3. To find out the differences in the level of knowledge on pain assessment tool

between male and female nurses in UBTH.

Hypothesis

There is no significant relationship between the level of knowledge of nurses on pain assessment tool and socio-demographic characteristic in university of Benin teaching hospital.

METHODOLOGY

Research design: The researcher uses a descriptive cross-sectional survey design.

Research setting; University of Benin Teaching Hospital, (UBTH) Benin City was purposely selected for this study as one of the first generational tertiary health institution in the country. It was established to compliment her sister institution, University of Benin and to provide secondary and tertiary care to them Midwestern region it has facilities for over 900 in patient. University of Benin Teaching Hospital has many departments including nursing service which is divided into seven (7) unit headed by an Assistant Director.

Target population; Target populations of the study were all nurses working in UBTH. According to data from the Director of Nursing Services University of Benin Teaching Hospital the total the number of nurses in UBTH is 928

Sample size; A sample size of 306 was used for this study and this was gotten from the target population of 928 using the Taro Yarmenes formula, with 10% attrition rate.

N= N/1+N(e)2 ; Where n=sample size, N= Target population, e is error (5%)

n= 928/1+928(0.05)2

= 279.51

10% attrition rate = 28

279 + 27= 306

The inclusion criteria**:** All must be registered nurse with the Nursing and midwifery council of Nigeria (NMCN), with more than one year of clinical experience in the clinical setting.

Sampling technique; Non-probability convenient sampling technique was used.

Instrument for data collection; A self-developed questionnaire consisting of two sections A and B. Section A consists of the demographic data of the respondents. Section B comprises knowledge on pain assessment tools.

Validity; Face and content validity of the instrument was done by two other senior clinicians who are experts in pain management in UBTH.

Reliability: Reliability of the instrument was tested in a pilot study with 20 respondents from similar institution; Irua Specialist Teaching Hospital, Ekpoma Edo state using test re-test method. The data was analysed using IBM SPSS version 20. The product moment reliability coefficient (r) was measured as 0.78. This showed that the instrument has a high internal consistency and can be used for the study.

Ethical Consideration; ethical approval for the study was obtained from UBTH Research and Ethical Committee. Administrative permit was also obtained from the Nursing Services Department of UBTH. Consent of the respondents was duly sort for before proceeding and confidentiality was held in high esteem.

Procedure for data collection; the researcher recruited three (3) registered nurses working in the hospital as research assistants. These research assistants were trained on how to administer the questionnaire. The researcher working closely with the research assistants administered the questionnaire to the different wards/units every day except on Sundays and this was done during each of the shift. After administering the questionnaire time will be giving to the respondents to fill, and then collect it immediately. A period of four (4) weeks was

used for the data collection.

Method of data analysis

Data generated was statistically analysed using descriptive statistics; arithmetic means, proportions, standard deviation and percentages. hypotheses were tested using t-test and chi-square at 5% level of significance.

RESULT

Out of a total of 306 copies of questionnaire distributed to the nurses, 287 copies of questionnaire were duly filled and returned, this is about 95.7% response rate. The remaining 4.3% that was not used in this research was as a result of incorrectly filled and multiple response in certain items in the questionnaire.

Table 1: Demographic characteristics of nurses

	Frequency	Percentage
Gender		
Male	86	30.0
Female	201	70.0
Age		
20 - 30yrs	102	35.5
31 - 40yrs	84	29.3
41 - 50yrs	43	15.0
50yrs and above	58	20.2
Mean /SD	37.49±11.31yrs	
Level of Education		
RN	131	45.6
B.Sc	135	47.0
M.Sc	21	7.3
Ph.D	0	0.0
Working Experience		
1 - 5yrs	100	34.8
6 - 10yrs	84	29.3
11 - 15yrs	48	16.7
16yrs and above	55	19.2
Mean (SD)	10.16±7.58yrs	
Have you attended workshop/Seminar on pain management		
Yes	175	61.0
No	112	39.0
Have you read any book or journal about pain?		
Yes	247	86.1
No	40	13.9

As presented in Table 1, the demographic characteristics of the nurses in UBTH. 86(30.0%) of the nurses are males; while 201(70.0%) of the nurses are females. The mean age of the nurse is 37.49±11.31yrs. 102(35.5%) are in the age group 20 - 30yrs; 84(29.3%) are within 31-40yrs; 43(15.0%) are within 41-50yrs; the remaining 58(20.2%) are 50yrs and above. In assess the nurses level of education, 131(45.6%) reported they have RN, 135(47.0%) have B.Sc, 21(7.3%) reported they have M.Sc. None of the nurses reported having a Ph.D. From the 100(34.8%) have worked for 1-5yrs; 84(29.3%) have worked for 6 - 10yrs; 48(16.7%) have been working for 11-15yrs; while the remaining 55(19.2%) are 16yrs and above. The mean years of experience are 10.16±7.58yrs. More than half 175(61.0%) of the nurses have attended workshop/seminar on pain management; while 112(39.0%) have never attended such exposure. Over three-quarter 247(86.1%) of the respondents have read books/journals about pain; while very few 40(13.9%) have not been exposed about pain.

Respondents' level of knowledge on pain assessment tool

Table 2: Knowledge of pain assessment tools

Items questions	Correct (%)	Wrong (%)	Mean±(SD)
Have you heard of pain assessment tools/scale?	287(100.0)	0(0.0)	1.00±0.00
Pain assessment tools/scale are used in measuring the level of pain a patient is experiencing	276(96.2)	11(3.8)	0.96±0.19
One of the following is not a pain assessment tool/scale	203(70.7)	84(29.3)	0.71±0.46
The best pain assessment tool/scale is____	165(57.5)	122(42.5)	0.57±0.50
Which of the following will the nurse not consider when using pain assessment tools?	177(61.7)	110(38.3)	0.62±0.49
The most commonly used one dimensional pain scale is	163(56.8)	124(43.2)	0.57±0.50
Which of the following pain assessment tools is used for children?	175(61.0)	112(39.0)	0.61±0.49
Pain assessment use for children who can talk.	114(39.7)	173(60.3)	0.40±0.49
In managing pain, it is compulsory to first assess the pain using pain assessment tool.	246(85.7)	41(14.3)	0.86±0.35
Pain assessment tool use in management should be documented	256(89.2)	31(10.8)	0.89±0.31

Also, Table 2 shows the nurses' knowledge of pain assessment tools. The table shows that all the nurses have heard of pain assessment tools/scale. 276(96.2%) have correct knowledge that pain assessment tools/scale are used in measuring the level of pain a patient is experiencing. 203(70.7%) were able to correctly identify a pain assessment tool/scale. 165(57.5%) of the nurses correctly got the best pain assessment tool/scale. 177(61.7%) correctly got the answer to what should not be considered when using pain assessment tools. 163(56.8%) correctly answered the most commonly used one dimensional pain scale. 175(61.0%) correctly answered the pain assessment tool suitable for children. 114(397%) of the nurses correctly answered the pain assessment used for children who can talk. 246(85.7%) of the nurses correctly answered if in managing pain, it is compulsory to first assess the pain using pain assessment tool. 256(89.2%) of the nurses correct answered that pain assessment tool used in management should be documented.

Table 2b: Level of Knowledge of Pain assessment tools among nurses in UBTH

Level of knowledge	Scores	Frequency	Percentage
Poor Knowledge	0-3	8	2.8
Average Knowledge	4-6	83	28.9
Good knowledge	7-10	196	68.3
Total		287	100.0

In a similar vain Table 2b shows the level of knowledge of pain assessment tools among nurses in UBTH. It shows that a very good number 196(68.3%) of the nurses have good knowledge of pain assessment tools; 83(28.9%) have average knowledge while the remaining 8(2.8%) have poor knowledge. This shows that the level of knowledge of pain assessment tools among nurses is UBTH is very high.

Table 3: relationship between Exposure and level of Knowledge on pain assessment tool

Have you attended workshop/Seminar on pain management	Knowledge				
	Poor	Average	Good	χ^2	**P**
Yes	2(1.1)	39(22.3)	134(76.6)	15.676	0.000
No	6(5.4)	44(39.3)	62(55.4)		
Have you read any book or journal about pain?					
Yes	6(2.4)	65(26.3)	176(71.3)	7.249	0.027
No	2(5.0)	18(45.0)	20(50.0)		

Table 3 shows that the association of knowledge with workshop/seminar is statistically significant (^{2} = 15.676; p = 0.000). Also, the proportion of level of knowledge increase with exposure to books/journal about pain. The association is statistically significant (^{2} = 7.249; p = 0.027). We therefore reject the null hypothesis which states that there is no significant relationship between exposure and knowledge of pain assessment tools.

Table 4: Independent t-test of gender and knowledge nurses

Grouping variable	N	Mean	SD	t-cal	Sig.
Male	86	7.4186	1.62673	1.353	.177
Female	201	7.0846	2.02677		

Not significant at .05 level; df = 285

Table 4 shows the mean comparison of knowledge score of male and female nurses in the knowledge of PAT. The mean score for male nurse is 7.42±1.63; while that of the female nurses is 7.08±2.03. This shows that the male has higher knowledge of PAT. This difference is mean is however not statistically significant (t=1.353; p = 0.177). We therefore accept the null hypothesis which states that there is no significant difference between male and female nurses in the knowledge of PAT

Table 5: Relationship between socio-demographic characteristics and level of knowledge of Pain

Variables	Poor/Fair	Good	χ^2	p
Gender				
Male	15(17.4)	71(82.6)	11.540	0.001
Female	76(37.8)	125(62.2)		
Age				
20 - 30yrs	49(48.0)	53(52.0)	20.527	0.000
31 - 40yrs	18(21.4)	66(78.6)		
41 - 50yrs	8(18.6)	35(81.4)		
50yrs and above	16(27.6)	42(72.4)		
Level of Education				
RN	51(38.9)	80(61.1)	7.253	0.027
B.Sc	37(27.4)	98(72.6)		
M.Sc	3(14.3)	18(85.7)		
Working Experience				
1 - 5yrs	47(47.0)	53(53.0)	19.315	0.000
6 - 10yrs	25(29.8)	59(70.2)		
11 - 15yrs	9(18.8)	39(81.2)		
16yrs and above	10(18.2)	45(81.8)		

Table shows 5 that Males 71 (82.6%) are more knowledgeable than females 125 (62.2%) in terms of pain assessment tools. This difference in proportion is statistically significant (^{2} = 11.540; p =0.001). It also shows that as age increases, the level of good knowledge of pain assessment tools also increases. The test of association also shows that age is significantly associated (^{2} = 0.527; p = 0.000) with level of knowledge of pain. There was also a significant association (^{2} = 7.253; p =0.027) between level of education and level of knowledge of pain.

The table shows that as level of education increases, there was also increase in the level of good knowledge of pain. Working experience of the nurses shows that nurses with higher working experience have higher level of good knowledge of pain assessment tools than those who have lower working experience. This association is statistically significant (^{2}=19.315; p = 0.000) indicative that working experience is associated with level of knowledge of pain assessment tools.

Table 6: Multivariate logistic regression analysis assessing the relationship between demographic characteristics and level of knowledge of pain assessment tools

	P	OR	95% confidence interval
Gender			
Female (Reference)		1.000	
Male	0.002	2.995	1.49-3.94
Age			
20 - 30yrs (Reference)		1.000	
31 - 40yrs	0.098	1.872	0.89-3.94
41 - 50yrs	0.996	1.003	0.30-3.34
50yrs and above	0.160	0.426	0.13-1.40
Level of Education			
RN (Reference)		1.000	
B.Sc	0.369	1.317	0.72-2.40
M.Sc	0.526	1.558	0.40-6.14
Working Experience			
1 - 5yrs (Reference)		1.000	
6 - 10yrs	0.024	2.333	1.12-4.87
11 - 15yrs	0.081	2.786	0.88-8.79
16yrs and above	0.001	10.054	2.53-39.97

The multivariate logistic regression shows that gender and working experience are the only significant demographic characteristics associated with level of knowledge of pain assessment tools. Males are three times more likely to have good knowledge of pain assessment tools than females (OR = 2.995; C.I. = 1.49 – 3.94). For the working experience, nurses in the profession for 6 – 10yrs are twice more likely to have good knowledge than those 1 – 5yrs in the profession, those that have spent 11 – 15yrs in the progression are three times more likely to have good knowledge than the reference category, while those who have spent 16yrs and above are ten times more likely to have good knowledge than the reference category.

DISCUSSION OF FINDINGS

The research work assessed the knowledge of pain assessment tools among nurses in University of Benin Teaching Hospital, Benin City, Edo State, Nigeria.

Findings from the study show that 86(30.0%) of the nurses are males; while 201(70.0%) of the nurses are females. The mean age of the nurse is 37.49±11.31yrs. 102(35.5%) are in the age group 20 - 30yrs; 84(29.3%) are within 31-40yrs; 43(15.0%) are within 41-50yrs; the remaining 58(20.2%) are 50yrs and above. In assess the nurses level of education, 131(45.6%) reported they have RN, 135(47.0%) have B.Sc, 21(7.3%) reported they have M.Sc in other health related field. None of the nurses reported having a Ph.D. From the working experience part of the demographics, 100(34.8%) have worked for 1-5yrs; 84(29.3%) have worked for 6 - 10yrs;

48(16.7%) have been working for 11-15yrs; while the remaining 55(19.2%) are 16yrs and above. The mean years of experience are 10.16±7.58yrs. More than half 175(61.0%) of the nurses have attended workshop/seminar on pain management; while 112(39.0%) have never attended such exposure. Over three-quarter 247(86.1%) of the respondents have read books/journals about pain; while very few 40(13.9%) have not been exposed about pain. From this study it has been observed that majority of the respondent has been expose to workshop and seminar on pain assessment and management, this percentage is far higher than that reported in the Kenyan study by Kituyi et al., 2011 who reported that only 21% of the nurses have had formal training on pain assessment tools. This development is commendable of the respondent in this index study, however this might not be far from the high level of educational status attained by the respondents in this index study as many of them had bachelor of science degree in addition to master degree, also this may not be unconnected to the status of the hospital as one of the first generation hospital in the country which also houses the famous university of Benin with a college of medical sciences. With these, there are a lot of opportunities for the respondent to go for in-service training and also acquire higher degree as noted in the findings of this study.

The study also reveals that the respondents' level of knowledge on pain assessment tools was high as a very good number 196(68.3%) of the nurses have good knowledge of pain assessment tools; 83(28.9%) have average knowledge while the remaining 8(2.8%) have poor knowledge. Worthy of note from the findings is that 276(96.2%) have correct knowledge that pain assessment tools/scale are used in measuring the level of pain a patient is experiencing. 203(70.7%) were able to correctly identify a pain assessment tool/scale. 165(57.5%) of the nurses correctly got the best pain assessment tool/scale. this is in contrast with the study Manwere, Chipfuwa, Mukwamba & Chironda (2012) on the knowledge of Registered Nurses toward pain assessment tools in adult medical patients at a provincial hospital in Zimbabwe, which shows that registered nurses had inadequate knowledge of pain assessment tools, the same study also noted that 84% of the respondents failed to give correct tools used for pain assessment. 76% gave incorrect ideal time for pain assessment and 76% failed to identify type of pain measuring scale. Similarly, the level of good knowledge of nurses reported in this present study is higher than the 43% reported by Kituyi et al., (2011) in Kenya among clinicians where they reported that poor knowledge of pain assessment tool leads to poor pain management. Furthermore, Tirivanhu, Maceline and Geldine (2015) in Bindura Provincial Hospital South Africa reported that 42(84%) of the respondents failed to give correct tools used for pain assessment, 38 (76%) gave incorrect ideal time for pain assessment and 39 (76%) failed to identify types of pain measuring scales.

Similar result was also reported by Kizza and Muliira (2016) in Uganda, where nurses reported poor pain assessment practices, including lack of use of pain assessment tools and guidelines, however this poor result in Uganda was significantly associated with workload and the low priority set to pain assessment and management. Other studies which differ from the finding of this index study are that of Mohamed Naeem Bard, Morsy& Ali (2010) which reported that the majority of the studied sample (93.3% & 95%) had an unsatisfactory knowledge of pain assessment tool and practices level respectively. Similar finding was also reported in Turkey by Yava, Cicek, Tosun, Ozcan, Yildiz, Dizer (2010) among 246 nurses. The result shows that nurses did not did not have adequate knowledge on

pain assessment tools and management. Also, Kituyio, Imbayo, Wambami, Sisenda & Kuremu (2011), posited that only 41% of nurses indicated that they had sufficient knowledge of pain assessment tools and that 21% of all the participants had never had any formal teaching in relation to knowledge of pain assessment tools. It is pertinent to note that this lack of training in the aforementioned studies may have accounted for the poor knowledge on pain assessment tool recorded in Kenya as against this present study where majority of the participant had under gone courses and training on pain assessment and management. This assertion was validated in this present study as the proportion of level of knowledge increases with attendance to workshop/seminar on pain management as shown that 134(76.6%) of the nurses that attended workshop/seminar on pain management have good knowledge of PAT; 39(22.3%) of them have average knowledge; while only 2(1.1%) of these nurses have poor knowledge of PAT. Association between exposure and level of knowledge is statistically significant (^{2} = 15.676; p = 0.000). The finding also shows that the proportion of level of knowledge increase with exposure to books/journal about pain. The association is statistically significant (^{2} = 7.249; p = 0.027).

However finding from this present study supports that of Niamh (2011) who reported 75.5% level of good knowledge which was based on their self-rating. According to Jablonski & Ersek, (2009), the level of knowledge of pain assessment tool affects the ability to effectively manage pain; which according to them includes reducing pain to a reasonable point and assuring that one's ability to function is to lead a comfortable life is sustained or enhance and nurses tends to have more knowledge as they are mostly close to the patient. Therefore, the high level of knowledge reported by these nurses in the present study shows they may also have better experience and knowledge of pain management.

Furthermore, findings from this study reveals males 71(82.6%) are more knowledgeable than females 125(62.2%) in terms of pain assessment tools. This association in proportion is statistically significant (^{2} = 11.540; p =0.001). It also shows that as age increases, the level of good knowledge of pain assessment tools also increases. The test of association also shows that age is significantly associated (^{2} = 0.527; p = 0.000) with level of knowledge of pain assessment tool. There was also a significant association (^{2} = 7.253; p =0.027) between level of education and level of knowledge of pain assessment tool. It shows that as level of education increases, there was also increase in the level of good knowledge of pain. Working experience of the nurses shows that nurses with higher working experience have higher level of good knowledge of pain assessment tools than those who have lower working experience. This association is statistically significant (^{2}=19.315; p = 0.000) indicative that working experience is associated with level of knowledge of pain assessment tools. This finding agrees with that of Ancia, Tirivanhu, Maceline and Geldine (2015), who reported association between Knowledge of pain assessment tool and management with the age of the respondents (p=.001; p = . 0 0 5) with those of older (40 years and above) scoring high on the knowledge of pain assessment tool/scale, same study also find association between knowledge of pain management and one's years of experience in the nursing profession (p=.003; p = . 0 0 5). Furthermore, the study shows the mean score for male nurse is 7.42±1.63; while that of the female nurses is 7.08±2.03. This shows that the male have higher knowledge of PAT. This difference in mean is however not statistically significant (t=1.353; p = 0.177). This finding however, does not corroborate the finding of ***Khalid*** *and*

Majed (2015) who found significant difference between the mean knowledge score of male and female health care providers on knowledge of pain assessment tool. The findings of this present study has further strengthen the relevance and need for continuous education and training among health care professional especially nurses who are the frontline health care professionals.

Implication for Nursing

Management of pain is a critical issue for patients; and nurses are the first point of call as one of the core function and responsibility of the nurse is to ensure the comfort of the patient by alleviating his/her pain. For this to be possible in this contemporary time, the nurses has to be versatile in her knowledge of pain management and skill, however this will not be possible if the nurses did not have adequate knowledge of pain assessment tool, as the panacea to effective pain management is a good knowledge of pain assessment tool. Without the pain assessment tool the nurse will be deficient in his /her assessment which can lead to wrong and inadequate pain management leaving the patient in perpetual pain. Therefore, there is need for more proactive action from all stalk holders in health sector especially nursing profession to continuously roll out programmes aim at updating and training of nurses on the latest skill and tools in pain assessment and management.

Conclusion and Recommendations

This study provided important information about the knowledge of pain assessment tools among nurses in University of Benin Teaching Hospital, Benin City, Edo State, Nigeria. The results demonstrated that majority of the respondents have very good knowledge of PAT. However, there is need for more improvement.

Based on the findings from this study, the following are recommended:

There is need to design and implement a continuous professional education program on pain and its assessment with special focus on methods of assessment, guidelines, how to use assessment tools, protocols and charts for proper documentation for all patients

In addition, introduction of tools, charts and protocols suitable in the settings is equally important. Implementation of these recommendations will require a multifaceted approach with combined input of the hospital and nurse leaders nursing and midwifery council of Nigeria, practicing nurses and nurse-educators in conjunction with Ministry of Health.

To ensure proper and continued use of tools, protocols and charts, there is need for a supportive environment which can be attained through improving staffing, provision of support supervision by experienced and skilled nurses and presence of a dedicated pain management team to provide leadership on prioritizing of pain and its management, and champion the changes needed.

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