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Perception and utilization of standardised electronic health records among nurses in JOS university teaching hospital Plateau State, Nigeria

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Abstract
Standardized electronic health record is becoming the global standard for clinical practice. This provides the needed data for healthcare planning. It can also improve quality of care, accuracy of patients' information and interdisciplinary communication among other benefits. The study therefore aimed at evaluating the perception and utilization of standardized electronic health records among nurses in Jos University Teaching Hospital (JUTH), Jos, Nigeria. The target population was 528 nurses in JUTH, Nigeria. A descriptive survey was adopted for the study. Data was collected using questionnaire as the instrument for the study, which was validated and found reliable with a Content Validity Index of 0.75 and a reliability coefficient of 0.98. Sample size of 228 was obtained using Slovin's formula. Participants were selected using stratified random sampling technique. 228 questionnaires were distributed and 228 were retrieved. This formed a response rate of 100%. Statistical Package for the Social Sciences (SPSS) version 22 and Microsoft excel 2013 version were used for the analysis in order to avoid errors due to manual calculations. Data generated from the study were analyzed and presented using descriptive statistics such as frequency tables, percentages, and mean; and inferential statistics such as chi-square to test hypotheses. Findings revealed that majority of the respondents (85.1%) were females between 31-52years with a mean age of 45.6years, with a working duration of 11-30 years (Mean working duration=18years). Further findings revealed that majority of the respondents (76.8%) had positive perceptions about standardized electronic health records. However, majority of the respondents (75.4%) were not utilizing standardized electronic health records. Chi-square analysis ($X2 = 0.812$, $df = 2$, significant level of 0.05, critical value of 5.991) revealed that there was no significant relationship between Nurses' perception and utilization of standardized electronic health records in Jos University Teaching Hospital. It is therefore recommended that the teaching hospital should adopt standardized electronic health record as a standard for documentation practice.

Keywords: Perception, Utilization, Standardized Nursing Language, Electronic Health Records

Introduction
The use of standardized electronic health records in the health care industry is becoming the standard [18]. A growing number of health care organizations are introducing and utilizing electronic systems to store patients' information [11] thus facilitating communication between Nurses and other care providers and between Nurses and patients [34]. The standardized electronic health record (EHR) is rapidly replacing paper documentation of health care activities in hospitals across the United States [12] and its adoption is a major reform component and cost saving tool [30]. The intent of initiating computerized documentation systems is to improve efficiency, safety and quality of patient care [18].

The care nurses provide to sustain life, enable recovery, alleviate suffering and promote health should be captured within the electronic health record (EHR). To share this information between clinical disciplines and care settings, data needs to be recorded and stored in a standardized form. Terminologies are one way to ensure standardization so patient care data can be stored in an unambiguous way. Nursing has numerous terminologies, each developed for a variety of care settings. Selecting the appropriate nursing terminology implementation for use in the EHR can be daunting or overwhelming [24].

Numerous benefits of standardized electronic health records exist amongst which are improved patient-centered care, improved quality, promotion of care coordination, greater efficiency, convenience of accessing patient's information by care givers and cost savings. It is also easy to keep track of what is happening with the patients. With electronic health records, the transfer of complete records from provider to provider or facility to facility happens electronically. That also means records don't get lost or delayed when patients change providers or providers make referrals [9].

The use of a standardized electronic health record is generally considered to be superior to paper documentation by virtue of being more accessible, more legible, and automatically author, time, and date stamped [12]. However, there are setbacks with standardized electronic health records. These include amongst others financial issues, changes in workflow, temporary loss of productivity associated with standardized EHR adoption, privacy and security concerns, and several unintended consequences [25]. In view of the foregoing, this research work is concerned with the perception and utilization of standardized electronic health records among nursing staff in Jos University Teaching Hospital, Jos, Nigeria and it validates both the diffusions of innovation theory and technology acceptance model.

Statement of Research Problem

Paper documentation systems often create fragmented and inconsistent health records that make it difficult to retrieve data and measure outcomes. In addition to the fragmentation of paper health records, the use of unstructured or narrative documentation limits the use of and ability to demonstrate the linkages or relationships between assessment findings, nursing diagnoses, interventions and expected outcomes in nursing care [28]. Despite advances in computerization in our society, majority of patients are given handwritten medication prescriptions, and very few patients are able to email their physician or health care givers [26] or even schedule an appointment to see a provider without speaking to a live receptionist [13]. Although there is a growing number of health care institutions world-wide who embrace and utilize standardized electronic health records in patient care, most hospitals in Nigeria including Jos University Teaching Hospital are still using paper based records for documentation.

Objectives of the Study

The objectives for this study are:

1. To evaluate perception of standardized electronic health records among Nurses in Jos University Teaching Hospital.
2. To assess utilization of standardized electronic health records among Nurses in Jos University Teaching Hospital.

Research Hypotheses

There is no significant relationship between Nurses' perceptions and utilization of standardized electronic health records in Jos University Teaching Hospital, Nigeria?

Significance of the Study

The findings of this study will provide a basis for the future adoption and utilization of standardized electronic health records in health care institutions. How Nurses perceive the benefits or disadvantages of this type of documentation might determine their readiness to practice it. The shift from paper-based records to electronic-based records will improve quality of care given to patients, ease documentation of care rendered to patients, reduce workload for nurses, and reduce the cumbersome nature of paper records. Communication between Nurses and other health care professionals will be enhanced.

Literature Review

Electronic health records (EHR) has become a global phenomenon because of its usefulness in health care. An electronic health record (EHR) is described as a repository that electronically maintains an individual's health information and health care for their lifetime and stores the information in a manner that it can serve multiple legitimate users of the record [32]. The purpose of the EHR is to collect, store, and process an individual's health information in a central location [17]. Since health information is in a central location, it is accessible to multiple providers to enhance continuity of care, efficiency and cost effectiveness of care. Care provided in healthcare settings must be documented for numerous reasons including developing health care service programs, monitoring ongoing care, evaluating the quality of care, measuring outcomes, reimbursement of services, and creating legal records [8].

According to Lee [23] 2008 some themes emerged regarding what nurses encountered or were concerned about. These include dissatisfaction with insufficient personal computers and printers in which nurses had to compete with other care providers for computer and printer use. Other issues identified included frequent breakdown of equipment, laptops not being connected to printers and increased time spent on charting. The slow response times which occurs as a result of changing from screen to screen and log in, log out processes leading to concerns about delay in care and patient safety.

Lee [23] asserted that by understanding issues that concern users of electronic medical records, strategies and policy requirements can be developed to support the end user. Provision of adequate computers, printers, and development of a network operation plan may improve documentation and nurse-nurse and nurse-physician relationships. Upgrading computer software and getting end user buy-in may improve charting quality. Encouraging communication with patients regarding documentation systems may improve nurse-patient relationships.

According to Thede and Schwirian [33] standardized nursing terminologies include Nursing specific terminologies and interdisciplinary terminologies. Most of the American Nurses Association (ANA) recognized standardized terminologies are nursing specific that is they have more in common with nursing than any of other health disciplines. This does not mean they cannot be used in other disciplines; rather it means that they address many specific nursing situations, not only the dependent functions of nursing but also independent nursing functions.

Some studies focused on nurses' perceptions of computer use. Darbyshire's [10] qualitative study found that nurses perceived an inability to capture the essence of nursing with computerized documentation. In contrast, Lee [22] found nurses' knowledge, experience, and judgments were enhanced through computer technology. Lee [23] studied nurses' perceptions of a nursing information system one year post implementation and found dissatisfaction with hardware, software, and interpersonal relationships. Moody *et al*. [27] studied nurses' attitudes and perceived effects of computerized documentation on patient care. The study revealed positive perceptions regarding decreased work load and improved quality of documentation. In contrast, nurses also reported environmental and system barriers.

Ajayi, Adeola, Daniel, Stephen and Gusen [4] conducted a study among nurses in Jos University Teaching Hospital and found that majority (73.2%) of the respondents had knowledge about standardized nursing language. They also adequately use NANDA-I diagnoses but have inadequate usage of Nursing Interventions Classification (NIC) and Nursing Outcomes Classification (NOC) in nursing documentation, for reasons such as inadequate manpower, lack of appropriate equipment, inadequate knowledge etc. More so, there was a significant relationship between knowledge and utilization of SNLs among nurses in JUTH.

Methods

Research Design

The study adopted a descriptive survey research method, and questionnaire was used to gather relevant data from 228 professional nurses in Jos University Teaching Hospital. The descriptive survey was chosen as the appropriate research design in other to find out the Nurses' perception and utilization of standardized electronic health records in Jos University Teaching Hospital, Jos, Nigeria.

Area/Location of study

The study was carried out in Jos University Teaching Hospital (JUTH), which was established in 1981 by the Federal Government of Nigeria for the purpose of providing tertiary health services to the populace, training facilities for medical students of the associated university of Jos and other medical personnel. Jos University Teaching Hospital has 31 departments, 22 wards and 620 bed capacities. The teaching hospital is located at Lamingo, Jos North Local Government Area of Plateau State, Nigeria. Jos is the capital city of Plateau State and it approximately lies between latitude 9.9N and longitude 8.9E. The study area was chosen for this research work because Jos University Teaching Hospital is a reference tertiary hospital in Jos committed to research and provision of quality health care to clients. Hence the hospital will serve as a standard and reference point for the adoption and practice of standardized electronic health records in the state

Population of the study

The target population was 528 Nurses in Jos University Teaching Hospital, Nigeria. These Nurses were at various ranks or cadres such as Chief Nursing Officers, Assistant Chief Nursing Officer, Principal Nursing Officers, Senior Nursing Officer, Nursing Officer 1 and Nursing Officer 2 with varied years of working experiences. Nurses who were on Maternity leave, annual leave, terminal leave, study leave or sick leave and excuse duty, were excluded from this study, while all nurses present and those who consented or agreed to participate in the study were included in the study.

Sample size/Sampling procedures

Stratified random sampling was used in selecting representative samples among Nurses across the wards/units in the institution. A list of nurses in the hospital was obtained from the office of the Director of Nursing Services (DNS) as the sampling frame. Out of 528 total number of Nurses in the hospital, 228 Nurses (43.2% of the target population) were selected using a stratified sampling frame. The Sample Size was calculated using Slovin's formula which was developed since 1960 [7].

$$n = \frac{N}{(1 + Ne^2)}$$

Where,

n = number of samples,

N = total population

e = Error tolerance (This is obtained depending on what choice of confidence level to be used e.g. 95% confidence level will give a margin error of 0.05 which is gotten by subtracting the confidence level from 1). Therefore, the Sample Size ≈ 228 Nurses

Research Instrument

The instrument used for data collection was a 26 point questionnaire. The questionnaire was developed from two questionnaires of previous researches on electronic health records. The two standardized questionnaires were National Electronic Health Records Survey Questionnaire and the final version of the Electronic Health Records Survey Questionnaire. The instrument used to collect data from the respondents was considered appropriate because the respondents were literates. The questionnaire consist of 3 sections. Section one consist socio-demographic characteristics of respondents. Section two consist questions on perception of standardized electronic health records. Section three consist questions on the utilization of standardized electronic health records.

Validation and Reliability of instrument

The pilot study of the instrument was done in which 10 Nurses in Jos University Teaching Hospital were given the questionnaire to answer. Observations were noted and corrections were effected so as to ensure construct validity of the instrument. Content validity was done in which the questionnaire was given to two experts in the field who went through the tool and a content validity index (CVI) of 0.75 was obtained, which ensured further validity of the instrument. The standardized electronic health records questionnaire was tested for reliability using the test-retest method. It was administered to some subjects within a period of three months during which the retest was done. The responses were compared for reliability. Pearson's correlation coefficient was used to determine the coefficient of correlation which was 0.9771 approximately 0.98. Hence the questionnaire had 98% reliability.

Data collection procedures

The questionnaires were given to the respondents through face to face distribution. Some were administered indirectly through the unit heads in the institution. The answered questionnaires were returned to the researcher through hand to hand collection with the assistance of the ward/unit heads.

Techniques of data analysis

The data collected was first coded by the researcher using Microsoft excel 2013 version. Inspection of the coded data was done to ensure coding accuracy. The data was later transferred to SPSS version 22. Descriptive statistical analysis such as simple frequency distribution tables, percentages and mean were implemented using SPSS. In order to test hypothesis, inferential statistics such as chi-square was used. The choice of Statistical Package for the Social Sciences (SPSS) in the data analysis was made to avoid errors due to manual calculations.

Ethical considerations

A written permission was obtained from the ethical committee of Jos University Teaching Hospital to conduct the study. The respondents' consent was sought and the purpose of the study was explained to them before they voluntarily filled the questionnaires. Data collected for the study was treated with utmost confidentiality and the names of the respondents was not required in order to ensure anonymity.

Results

Table 1: Socio-demographic Characteristics of Respondents

		Frequency	Percent (%)
Gender	Male	34	14.9
	Female	194	85.1
	Total	228	100.0
Age in years	20 to 30 years	8	3.5
	31 to 41 years	72	31.6
	42 to 52 years	108	47.4
	53 to 63 years	40	17.5
	Total (Mean age = 45.6years)	228	100.0
Marital status	Single	33	14.5
	Married	172	75.4
	Divorced	3	1.3
	Widow	18	7.9
	Widower	2	0.9
	Total	228	100.0
Religion	Christianity	225	98.7
	Islam	3	1.3
	Total	228	100.0
Ethnicity	Hausa	6	2.6
	Yoruba	24	10.5
	Igbo	22	9.6
	Plateau Ethnic Groups e.g. Berom, Mupun, Amo, Ngas etc.	141	61.8
	Others e.g. Tiv, Gwandara, Bura etc.	35	15.4
	Total	228	100.0

Table 1 shows that majority of the respondents (85.1%) were females while 14.9% were males. Some (17.5%) were between the ages of 53-63years. Majority (79%) of the respondents' age were between 31-52 years, while 3.5% were between 20-30 years. However, the mean age of the respondents was 45.6years. Majority (75.4%) of the respondents were married while 14.5% were single. Majority (98.7%) of the respondents were Christians, while only 4% of the respondents were Muslims. Most (61.8%) of the respondents were from various Plateau ethnic groups such as Berom, Mupun, Amo, Ngas etc. while 9.6% were Igbos and 2.6% were Hausas.

Table 2: Respondents' perception about standardized electronic health records

Perception about standardized electronic health records	Yes		No		Not sure		Total	
	F	%	F	%	F	%	F	%
Standardized EHR will help patients easily access and retrieve their health information	200	87.7	9	3.9	19	8.3	228	100.0
Standardized EHR improves quality of care	177	77.6	9	3.9	42	18.4	228	100.0
Standardized EHR improves communication with other healthcare providers	212	93.0	7	3.1	9	3.9	228	100.0
Standardized EHR reduces patient's cost of health services	142	62.3	64	28.1	22	9.6	228	100.0
Standardized EHR takes care of illegible handwriting of health care providers	199	87.3	13	5.7	16	7.0	228	100.0
Standardized EHR makes hospital statistics and analysis easier	216	94.7	3	1.3	9	1.3	228	100.0
Do you think Standardized EHR will improve the use of standardized nursing language?	171	75.0	10	4.4	47	20.6	228	100.0
Standardized EHR will take away most of the time I'm to give to patients	87	38.2	132	57.9	9	3.9	228	100.0
The introduction of Standardized EHR will create more work for me	49	21.5	167	73.2	12	5.3	228	100.0
Nurses duty roster will be easier with Standardized HER	167	73.2	48	21.1	13	5.7	228	100.0
Patients' privacy and confidentiality will be insecure with Standardized HER	89	39.0	84	36.8	55	24.1	228	100.0
Do you think paper-based records are better than standardized EHRs?	32	14.0	187	82.0	9	3.9	228	100.0
standardized EHRs should replace paper-based records	179	78.5	40	17.5	9	3.9	228	100.0
standardized EHRs should be used together with paper-based records	151	66.2	69	30.3	8	3.5	228	100.0

Table 2 showed that majority of the respondents (87.7%) perceived that standardized EHR would help patients easily access and retrieve their health information, improves quality of care (77.6%), improves communication with other healthcare providers (93%), reduces patients' cost of health services (62.3%). Majority of the respondents (87.3%) perceived that standardized EHR takes care of illegible handwriting of physicians and other healthcare providers, makes hospital statistics and analysis easier (94.7%), would improve the use of standardized nursing language (75%), would not take away most of the time they are to give to patients (57.9), would not create more work for them (73.2%). Similarly, most of the respondents (73.2%) perceived that Nurses duty roster would be easier with standardized EHR, patients' privacy and confidentiality of information would be insecure with standardized EHR (39%). Majority of the respondents (82%) perceived that standardized EHRs are better than paper based records, suggested that standardized EHRs should replace paper-based records (78.5%), and should be used together with paper-based records (66.2%)

Table 3: Respondents' Perceived impact of standardized electronic health records

Perceived impact of standardized EHR on patient care	Frequency	Percent (%)
Positive	175	76.8
Negative	3	1.3
Not sure	50	21.9
Total	228	100.0

Table 3 revealed that majority (76.8%) of the respondents had positive perception about the impact of standardized EHR on patient care, while a few (1.3%) of the respondents had negative perception about it.

Table 4: Respondents' utilization of standardized electronic health records

Utilization of electronic health records	Yes		No		Total	
	F	%	F	%	F	%
Do you document Standardized Nursing Languages in Electronic Health Records?	56	24.6	172	75.4	228	100.0
If yes, do you document the following Standardized Nursing Languages in Electronic Health Records?						
NANDA-I diagnoses, NIC & NOC	28	50	28	50	56	100.0
SNOMED-CT	7	12.5	49	87.5	56	100.0
PNDS	3	5.4	53	94.6	56	100.0
Omaha system	4	7.1	52	92.9	56	100.0
LOINC	2	3.6	54	96.4	56	100.0

Table 4 indicated that Majority of the respondents (75.4%) said they do not document Standardized Nursing Language (SNL) in electronic health records, while 24.6% were documenting it in electronic health records. Half (50%) of those respondents who document SNLs in EHRs were specifically documenting NANDA-I diagnoses, NIC and NOC in electronic health records. Similarly, majority (87.5%) of those respondents were not documenting SNOMED-CT in electronic health records, 94.6% were not documenting PNDS in electronic health records, 92.9% were not documenting Omaha system in electronic health records and 96.4% were not documenting LOINC in electronic health records.

Results of Hypotheses

This hypothesis was tested using contingency chi-square analysis as presented in table 5.

Table 5: Cross tabulation of Respondents' perception and utilization of standardized HER

Perceived impact of standardized EHR on patient care	Do you document standardized nursing languages in electronic health record?		Total
	Yes	No	
Positive	45 (19.7%)	130 (57.0%)	175 (76.8%)
Negative	1 (0.4%)	2 (0.9%)	3 (1.3%)
Not sure	10 (4.4%)	40 (17.5%)	50 (21.9%)
Total	56 (24.6%)	172 (75.4%)	228 (100.0%)

X^2 = 0.812, ***df*** = 2, at 0.05 **Significant level**, **Critical value** = 5.991, **P value** = 0.666

Table 8 showed that the calculated chi-square (X^2) value is less than the critical/table value and the P value is greater than 0.05 at the degree of freedom (df) = 1. Therefore, the null hypothesis is accepted. This implies that there is no significant relationship between perception and utilization of standardized electronic health record among Nurses in Jos University Teaching Hospital, Nigeria.

Discussion of Findings

The Socio-demographic findings revealed that majority of the respondents were females who were married and were between 31-52 years. However the mean age of the respondents was 45.6 years. Majority of them were Christians and were from Plateau ethnic groups such as Berom, Mupun, Ngas amongst others. Majority of the respondents have been working for about 11-30 years. However the mean years of working experience is about 18years. The explanation that can be given for these findings is that the dominant population in the nursing profession are females, although male nurses/midwives are still emerging in the profession. Furthermore, the teaching hospital is located in a state where majority of the residents are Christians and are Plateau indigenes.

The study found that majority of the respondents had positive perception about the impact of standardized electronic health record on patient care. This finding agrees with Adeleke, Lawal, Adio, and Adebisi [1] where most participants reported positive perceptions about the effects of IT on health information management and healthcare systems and decried the allusions that the emerging technology will dehumanize doctor-patient relationship. Similarly, majority of the respondents perceived that standardized electronic health records would help patients easily access and retrieve their health information. Similarly, Esters, Johnson and Harrahill [12] asserted that the use of a standardized electronic health record is generally considered to be more accessible and more legible. In the same vein, Roeder [30] identified some advantages of the use of standardized EHR which include organized information and easy accessibility among others.

Most of the respondents perceived that standardized EHR improves quality of care. This finding coincides with the findings of Adeleke *et al.* [2] in a study among healthcare providers at National Hospital, Abuja who reported that virtually, all healthcare professionals in the study, which included nurses indicated that Information Communication Technology (ICT) will improve medical care quality. Majority of the respondents perceived that standardized EHR improves communication with other Healthcare providers. This supports the assertion made by deVeer and Franke [11] that electronic systems containing patients' information facilitates communication between nurses and other care providers and between nurses and patients.

Most of the respondents perceived that standardized EHR reduces patients' cost of health services. This is similar to the opinion of Roeder [30] that the adoption of standardized EHR is a cost saving tool. Most of the respondents perceived that standardized EHR takes care of illegible handwriting of physicians and other healthcare providers. Similarly, Oroviogoicoechea, Elliott, and Watson [29] observed that electronic documentation systems can improve health professionals' access to more complete, accurate, legible and up-to-date patient data.

Majority of the respondents perceived that standardized EHR would improve the use of standardized nursing language. Similarly, Larrabee *et al*. [21] asserted that the implementation of EHRs integrated with standardized structure and language could improve the use of standardized languages. In the same vein, Adereti [3] stated that standardized nursing languages in an electronic health record facilitates appropriate selection of nursing diagnoses, outcome and interventions, and that improvements can be made by implementing standardized nursing language in the electronic health record. Furthermore, Häyrinen, Saranto, and Nykänen [15] posited that in the future it will be necessary to incorporate different kinds of standardized instruments, electronic interviews and nursing documentation systems in EHR systems.

Georgiou *et al*. [14] reported that there might be reluctance among nurses to use the standardized EHR system if they believe that it would take time away from patient care. Similarly, Kossman and Scheidenhelm [20] reported that nurses working in a community hospital felt that care was safer but quality decreased due to time spent on electronic records. On a contrary note, the study found that more than half of the respondents perceived that standardized EHR would not take away most of the time they are to give to patients. Most of the respondents perceived that the introduction of standardized EHR would not create more work for them. On the contrary, Lee [23] observed that Nurses created work around by developing word files, saving them, then retrieving files and revising for each patient.

Most of the respondents perceived that Nurses duty roster would be easier with standardized EHR. More than half of the respondents were not sure if patients' privacy and confidentiality of information would be insecure with standardized EHR. This could be because both paper and electronic storage systems are susceptible to security concerns. If a facility stores records electronically, they are vulnerable to access by unauthorized individuals, when the proper and effective security systems and controls are not in place and if records are in paper form, they are open to compromise resulting from a break in, the loss of a record due to human error, or damage as a result of natural disaster [7].

Majority of the respondents perceived that standardized EHRs were better than paper based records and should replace paper based records or they should be used together with paper based records. Similarly, Aquilino and Keenan [6] asserted that all standardized nursing languages are designed for use with both paper and computerized documentation. This could be as a result of its perceived benefits such as decreased costs, easy accessibility, and legibility of health records [7] among others. Moreso, Hicks [16] stated that one major concern with completely converting to electronic data is the threat to patient information. Providers and patients both worry about the implications of going digital. Hence, going digital could be scary. Many things could go wrong likewise keeping a paper records system. In the event of a natural disaster, paper records can be destroyed and can never be recovered.

Majority of the respondents were not documenting standardized nursing language in electronic health records. Out of those respondents who were documenting it in electronic health records, about half of those respondents were specifically documenting NANDA-I diagnoses, NIC and NOC (NNN) in electronic health records. Similarly, Ajayi, *et al*. [4] found that Nurses in Jos University Teaching Hospital adequately use NANDA-I but on the contrary inadequately utilize NIC and NOC in nursing documentation. However, majority of the respondents in this study who said they were documenting SNL in electronic health records were not documenting SNOMED-CT, Perioperative Nursing Data Set, Omaha system, and LOINC in electronic health records. It is not surprising that respondents who documented NNN in EHRs were more in number.

Yearous [35] provided some reasons for selection and application of standardized languages in electronic health records, which could be determined by a nursing specialty such as perioperative nurses utilizing the PNDS, or by healthcare organizations, such as hospitals adopting the use of SNOMED-CT, or the endorsement by a professional organization such as National Association of School Nurses (NASN) who support the use of NANDA to describe diagnoses, NIC to describe nursing interventions and NOC to describe nursing outcomes. This suggests that nurses in different specialty areas need to embrace these standardized terminologies and adapt it to their fields. More so, the hospital management could adopt the use of standardized nursing language in electronic health records i.e. standardized EHRs so that nurses would find it available for utilization.

This study found that there was no significant relationship between perception and utilization of standardized electronic health record among Nurses in Jos University Teaching Hospital, Nigeria. In other words, the utilization of standardized electronic health records among nurses in Jos University Teaching Hospital was not dependent on their perception on the subject matter. On a contrary note, Ajayi *et al*. [4] found that there was a significant relationship between knowledge and utilization of standardized nursing language among nurses in JUTH. This implies that in spite of the high percentage of respondents who had positive perception about standardized EHRs, they did not utilize it clinical nursing documentation, because of reasons excluding their perception about it.

Conclusion and Recommendations

The study concludes with the finding that Nurses in Jos University Teaching Hospital have positive perception about the impact of standardized electronic health records on patient care, yet have inadequate utilization of standardized electronic health records which might be due to identified barriers to its utilization such as lack of implementation by the hospital management and lack of provision of necessary resources such as computers among others. Hence, they need to be involved in the development and implementation of electronic health records (EHR) now, not after the EHR systems are fully implemented. Therefore, the study has successfully filled in the gap in what is known today about Nurses' perception and utilization of standardized EHR in Jos University Teaching

Hospital, hence contributing to the existing body of knowledge in nursing.

Based on the findings from the study, the following recommendations were made:

1. Hospital management of the teaching hospital should adopt standardized electronic health records as the standard for documentation practices among nurses and other healthcare providers and ensure regular training of the nursing workforce on this technology in order to ensure better quality of care.
2. Nursing and Midwifery Council of Nigeria together with Colleges of Nursing and Departments of Nursing should ensure that standardized electronic health record is incorporated within the nursing curriculum and implemented through teaching of students. This can be ensured through periodic supervision of the schools.

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