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PERCEIVED USEFULNESS OF ELECTRONIC HEALTH RECORDS SYSTEM BY MEDICAL DOCTORS IN PRIVATE UNIVERSITY TEACHING HOSPITALS IN SOUTH-WEST, NIGERIA

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Abstract
Electronic health records (EHR) system is a digitized system that accepts, collects, stores and displays health-related matters of patients. This study examined the perceived usefulness and perceived ease of use of electronic health records systems by medical doctors in private university teaching hospitals in South-west, Nigeria. Four research questions and one null hypothesis guided the study. The study adopted a descriptive survey research design. Population of the study comprised 219 medical doctors in private university teaching hospitals in South-west, Nigeria. The entire population was studied hence there was no sampling. Questionnaire was the instrument used for data collection. A total of 219 copies of the questionnaire were distributed but only 182 copies, representing 83.2% response rate was returned and found usable for analysis. Descriptive statistics of mean and standard deviation was used for analysis, while the hypothesis was tested at 0.05 level of significance using Pearson Product Moment Correlation. Findings revealed that most of the medical doctors used Eclinical Works, NextGen Healthcare and Allscripts. The frequency of use of the electronic health records system was to solve diagnostic problems daily while electronic health records systems were used primarily to establish proper communication among healthcare providers, timely access to information, and better documentation. A significant relationship was found between perceived usefulness and the use of electronic health records systems ($r = 0.122; p = 0.000;\ p < 0.05$). Perceived usefulness was found to be the significant factor contributing to the use of electronic health records systems by medical doctors in private university teaching hospitals in South-west, Nigeria. The need for an electronic health records system vendor to work in synergy with medical doctors, librarians, and information professionals to ensure the combination of relevant contents and sustained use of the electronic health records system in private university teaching hospitals was recommended.

Keywords: *Electronic Health Records, Perceived Usefulness, Medical Doctors, Private University Teaching Hospitals, South-West, Nigeria*

Introduction

The Introduction of Information and Communication Technology (ICT) in the healthcare system in Nigeria has brought about changes in effective health service delivery. As a result, significant transformation such as access to timely and accurate information by medical doctors have been noticed as a *sine qua non* for proper clinical decisions, diagnosis, prescriptions and improved health care. As the paradigm shift from manual filing to electronic systems, the integration of electronic health

records system in health sectors has shaped and changed the way healthcare services is delivered. For this reason, hospitals have adopted the use of electronic health records (EHR) systems in improving effective health service delivery.

Electronic health records systems as described by Waithera et al. (2017) are digital information of and about the health status gathered, collected, processed, used, and distributed over time in digital format. It could be seen as patient data, such as diagnosed conditions, medical history, prescribed medication and allergies, immunization status, laboratory results, radiology images, vital signs, and personal statistics such as age, blood pressure and weight. An electronic health records system is described as longitudinal digital patient health information created by one or more encounters in any care delivery conditions.

Jeyakodi and Herath(2016) explained that electronic health record system has a great potential for improving quality, continuity, safety and efficiency in healthcare, they are being implemented across the world. In the context of this study, electronic health record systems have the potential of improving quality, continuity, safety and efficiency in healthcare delivery if they are implemented across the world. Medical doctors like other personnel in the hospitals are expected to embrace electronic health record systems in health centres. The involvement of this personnel as a stakeholder in the acceptance could influence the optimal use of the electronic health record system. Medical doctors are professionals who are concerned with promoting, restoring, maintaining and treatment of diseases and other physical and mental impairments. Medical doctors are proportionally the largest workforce in the healthcare system. Their dealing with the clinical work and interaction with electronic health records daily is maximal. They deliver an important link to patient diagnoses, noting vital signs, as well as checking and transcribing physician's orders.

The use of electronic health records system could be as a result of its vigorous supply to enhance organisation’s ability in making decisions, enabling access to patient records, improving quality and reducing errors in drug prescription. However, despite the benefits and purpose in the use of electronic health records systems for health service delivery by medical doctors, the report indicated that these systems have not been used as expected among medical doctors, particularly in a developing country like Nigeria. The reasons attributed for the low usage were largely connected to their behaviours regarding the use of new technology like electronic health records systems which determine the user's behavioural intention to use the technology (Gagnon et al., 2016).

Over time, several models have been employed to predict the acceptance of EHR systems in hospitals. Prominent among these models is Technology Acceptance Model (TAM). According to the TAM model, the aim is to identify what factors would cause people to accept or reject any information technology system. The theorist emphasised perceived usefulness and perceived ease of use as possible motivating factors. This study is, however, limited to the perceived usefulness of electronic health record systems. Perceived usefulness is defined as the level of users' belief that using a particular technology will help them in achieving better work performance. Gillian (2015) defined perceived usefulness as the prospective user's subjective probability that using a specific technology system will increase his/her job performance within an organisation. In an electronic health records system, perceived usefulness focuses solely on job performance efficiency.

Therefore, three dimensions were proposed for assessing the perceived usefulness of the EHRs system, namely: relative advantages, compatibility, and timeliness. Relative advantage is defined as the degree to which medical doctors perceived the use of the EHRs system as better than the idea that it supersedes. Medical doctors' relative advantage may include improving the quality of work, increasing the speed of accomplishing tasks, and enhancing job effectiveness using the EHR system (Yu et al., 2016). On the other hand, compatibility refers to medical doctors' perception of how applicable and supportive the new technology is to their job. This implies that when an electronic

health records system supports key job tasks and works demand, medical doctors are likely to believe that, by using the system, their performance will increase. Timeliness refers to an appropriate time in which information regarding an event must be used before it loses its ability to influence the decision-making process.

Therefore, the essence of deploying an electronic health records system may be to facilitate efficient service delivery in the hospital. Despite this assertion, the anecdotal report indicated that this system has not been used as expected particularly among medical doctors, in a developing country like Nigeria. It is against this backdrop, that this study examined the perceived usefulness of electronic health records system by medical doctors in private university teaching hospitals in South-West, Nigeria.

Statement of the Problem

The acceptance and use of electronic health records systems have been established as a means of facilitating effective and quality health care service. Electronic health records systems contain information on patients' health-related issues. The acceptance and use of electronic health records systems are supposed to address clinically related issues in terms of prescription, therapy, referral, and overall quality health care delivery. However, anecdotal evidence showed that the use of the EHR system by medical doctors is not as high as expected due to several factors. Factors identified include technical, social, organisational, environmental and financial aspects without recourse to the role of perceived usefulness. It is based on this premise that this study sought to investigate the perceived usefulness of electronic health records systems by medical doctors in private university teaching hospitals in South-West, Nigeria.

Objectives of the Study

The broad objective of the study was to examine the perceived usefulness and perceived ease of use of electronic health records systems by medical doctors in private university teaching hospitals in South-West, Nigeria. Specifically, the study sought to:

i. ascertain the types of electronic health records systems used by medical doctors in private university teaching hospitals in South-West, Nigeria;
ii. investigate the purposes of using electronic health records system by medical doctors in private university teaching hospitals in South-West, Nigeria
iii. determine the frequency of use of electronic health records systems by medical doctors in private university teaching hospitals in South-West, Nigeria;
iv. ascertain the perceived usefulness of electronic health records system to medical doctors in private university teaching hospitals in South-West, Nigeria;

Research Questions

The following questions were designed to guide this study

i. What are the types of electronic health records systems used by medical doctors in private university teaching hospitals in South-West, Nigeria?
ii. What are the purposes of using electronic health records systems by medical doctors in private university teaching hospitals in South-West, Nigeria?
iii. What is the frequency of use of electronic health records systems by medical doctors in private university teaching hospitals in South-West, Nigeria?
iv. What is the perceived usefulness of electronic health records system to medical doctors in private university teaching hospitals in South-West, Nigeria?

Hypotheses

The following null hypothesis was tested at a 0.05 level of significance:

Ho_1: Perceived usefulness has no significant relationship with the use of electronic health records systems by medical

doctors in private university teaching hospitals in South-West, Nigeria.

Method

The study adopted descriptive survey research design whose purpose was to describe the relevant aspects of the phenomena of interest. The study population consisted of two hundred and nineteen (219) medical doctors in three private university teaching hospitals in South-West, Nigeria. The three private university teaching hospitals were Bowen University Teaching Hospital Ogbomoso, Afe-Babalola University Teaching Hospital Ado-Ekiti and Babcock University Teaching Hospital Ilishan-Remo. The medical doctors studied were practicing doctors. Total enumeration sampling technique was employed hence there was no sampling as the population was manageable. Instrument for data collection was a questionnaire. Descriptive statistics such as frequency counts, percentages, mean and standard deviation scores were used to measure research questions 1-4. Inferential statistics were used to test the formulated hypotheses using Pearson Product Moment Correlation (PPMC) to analyze the hypothesis.

Result and Discussions

The analysis of the data was presented in Tables 1-7

Research Question 1: What are the types of electronic health records systems used by medical doctors in private university teaching hospitals in South-West, Nigeria? The types of electronic health records systems used are presented in Table 3

Table 1: Types of electronic health records systems used in respective private university teaching hospitals

S/N	Electronic Health record Systems	ABUADTH (=31)				BTH (n=97)				BUTH (n=54)			
		Yes		No		Yes		No		Yes		No	
		N	%	N	%	N	%	N	%	N	%	N	%
I	Eclinical Works	9	29.0	22	71.0	22	22.7	75	77.3	18	33.3	36	66.7
Ii	Allsripts	5	16.1	26	83.9	14	14.4	83	85.6	17	31.5	37	68.5
Iii	Epic systems	5	16.1	26	83.9	14	14.4	83	85.6	17	31.5	37	68.5
Iv	Practice fusion	4	12.9	27	87.1	13	13.4	84	86.6	14	25.9	40	74.1
V	NextGen healthcare	8	25.8	23	74.2	15	15.5	82	84.5	19	35.2	35	64.8
Vi	Cerner	3	9.7	28	90.3	12	12.4	85	87.6	11	20.4	43	79.6
Vi	Athenahealth	4	12.9	27	87.1	13	13.4	84	86.6	14	25.9	40	74.1

The result in Table 1 revealed that in AfeBabalola University Teaching Hospital (ABUDTH), Eclinal Works and NextGen health were sparingly available as indicated by 29.0% and 25.8% of the respondents in ABUADTH. On the other hand, Allsripts, Epic systems, Practice fusion, Athenahealth and Cerner were indicated by the majority of respondents in ABUATH as not available. This trend is also recorded in the two other teaching hospitals investigated namely Bowen Teaching Hospital and Babcock University Teaching Hospitals as E-clinical and NextGen health care were the types of electronic health records systems used by most of the doctors. Generally, it could be observed that although majority of the respondents claimed that most electronic health records systems were not available for use, some of the doctors still believed that all types of electronic health record systems were available in the private university

teaching hospitals in the south-west, Nigeria but their availability was not prominent. It could be concluded that there were different types of electronic health record systems in private university teaching hospitals but EclinicalWorks, NextGen healthcare and Allsripts were the types mostly used by medical doctors and only a few medical doctors used the other electronic health records system Athenahealth, Epic system, Cerner and Practice fusion respectively. The overall weighted mean recorded was 1.19 which was below the threshold mean point.

The findings on the types of electronic health records systems indicated that the medical doctors in private university hospitals in South-West, Nigeria were well informed about the available electronic health records system in their respective teaching hospitals. There were different types of electronic health records systems in private university teaching hospitals but EclinicalWorks, NextGen healthcare and Allsripts were the types mostly used by the doctors. Only a few medical doctors used the other electronic health records system which includes Athenahealth, Cerner and Practice fusion respectively. This finding corroborates the finding of previous studies by Endalev (2020), Sewell (2015) and Waithera et al., (2017) that an electronic health records system is a computerised clinical information system or application that can be used to collect, store, and display patients' information throughout their many encounters with a healthcare provider system. Also, the finding of the present study is not farther from the position of Mohammad and Yunus (2017) that electronic health records systems such as Eclincal works contained patient medical details including demographic information, history, physical examination, and investigation and treatment of medication in digital format. It includes a repository of information regarding the health status of a patient in computer-readable form, stored, transmitted securely and made accessible to multi-authorised users.

On the other hand, the finding of this study does not agree with Gagnon et al., (2016) who identified four categories of electronic patient records. The categories identified include stand-alone EPR which allows the collection of health information on a portable media device that enables viewing and managing the data by the patient only; the tethered EPR access and updates patient health information from the hospital electronic medical record with various degrees of control; an untethered EPR allows patients and healthcare providers to have access to the record and integrated EPR gather and view data from multiple sources.

Research Question 2: What are the purposes for which medical doctors use electronic health records systems in private university teaching hospitals in South-West Nigeria?

Table 2: Purposes for the use of electronic health records system by medical doctors

SN	I use EHRs to:	VT		T		ST		NT		Mean	S.D
		N	%	N	%	N	%	N	%		
I	promote the quality of care	88	48.4	49	26.9	34	18.7	11	6.0	3.18	0.941
Ii	establish proper communication among healthcare providers	124	68.1	36	19.8	16	8.8	6	3.3	3.53	0.791
Iii	prevent medical errors using alerts and reminders	72	39.6	53	29.1	23	12.6	34	18.7	2.90	1.125
Iv	high security and confidentiality in the EHR regarding the paper-based records	46	25.3	119	65.4	11	6.0	6	3.3	3.24	0.657
V	help better documentation	94	51.6	59	32.4	23	12.6	6	3.3	3.33	1.004
Vi	disclose weakness and incompetency of the employee	61	33.5	45	24.7	36	19.8	40	22.0	2.70	1.152
Vii	Timely access to information	118	64.8	53	29.1	5	2.7	6	3.3	3.49	0.709
Viii	increase the need to acquire new skills	48	26.4	73	40.1	31	17.0	30	16.5	2.76	1.021
Ix	improve workflow	59	32.4	64	35.2	18	9.9	41	22.5	2.77	1.132
X	make the work most satisfactory and simplified	99	54.4	37	20.3	34	18.7	12	6.6	3.23	0.974

Weighted Mean = 3.11, Arithmetic mean = 31.13, Standard Deviation = 9.506

Key: Very True (VT=4); True (T=3); Seldomly True (ST=2); Not True (NT=1).
Negative rating = VT (Very True). The criteria mean =2.50 that is 4+3+2+1=10 ÷ 4 = 2.5. This implies that any score below 2.5 was considered low.

Result of the analysis on purposes for the use of electronic health records systems in private university teaching hospitals by medical doctors was shown in Table 2. The result revealed that majority of the respondents used electronic health records to establish proper communication among healthcare providers as indicated by 124 (68.1%) who claimed that the statement was very true while only 6(3.3%) of the respondents countered that this statement was not true. The statement received the highest mean rating of $3.53,\ \delta = 0.791$). Similarly, most doctors made use of electronic health records systems to timely access information. In fact, timely access to information was rated second with a mean score of 3.49 and a standard deviation of 0.709. Specifically, 118(64.8%) of the respondents indicated that the statement was very true, 53(29.1%) .e. Another prominent purpose for which medical doctors used electronic health records was to help better documentation ($\bar{x} = 3.33, \delta = 1.004$). This is because 94(51.6%) of the respondents pointed out that they made use of electronic health records to help better documentation in the most affirmative form of very true, 59 (32.4%) claimed this was true and only 6(3.3%) said it was not true. Other

prominent purposes for which medical doctors in private university teaching hospitals used electronic health records were for high security and confidentiality in the EHR regarding the paper-based records ($\bar{x} = 3.24, \delta = 0.657$) and to make the work most satisfactory and simplify ($\bar{x} = 3.23, \delta = 0.974$). The overall weighted mean recorded was 3.11, an indication that medical doctors in private university teaching hospitals in South-West, Nigeria made use of electronic health records mainly to establish proper communication among healthcare providers, timely access to information and better documentation.

This finding supports the submission of Sewell (2015) and Nematollahi et al., (2017) that electronic record systems can be used to collect, store, and display patients' information throughout their many encounters with a healthcare provider system. The finding of the present study also agrees partly with Gusen et al., (2016) that the EHRs system is deployed to improve patient-centred care, quality, promotion of care coordination, greater efficiency, and convenience of accessing patient information by caregivers and cost savings. Conversely, the finding deviates a little from Adedeji et al., (2018) who found that effective use of electronic health records systems by healthcare professionals has great potential of optimizing the process of healthcare service delivery, especially in clinical sites. Additionally, the finding supports Mohammad and Yunus (2017); Pera et al. (2019) and Garcia-Febo (2016) that the purpose of deploying an EHR system includes the provision of access to information; management of diseases; decision making; knowledge sharing and improvement of effective service delivery.

Research Question 3: How often do medical doctors use electronic health records systems in private university teaching hospitals in South-West, Nigeria?

Table 3: Frequency of use of electronic health records system by medical doctors

SN	Items	D (%)	W (%)	M (%)	O (%)	N (%)	Mean	S.D
I	I make use of the electronic health records system during ward round	20 (11.0)	28(15.4)	34(18.7)	47(25.8)	53 (29.1)	2.19	1.602
Ii	I make use of the electronic health records system during consultation	22(12.1)	35(19.2)	56(30.8)	22(12.1)	47(25.8)	2.14	1.780
Iii	I make use of an electronic health records system to solve diagnostics problem	56(30.8	32(17.6)	33(18.1)	35(19.2)	26(14.3)	2.38	1.281
Iv	I make use of the electronic health records system for medical care daily	36(19.8)	21(11.5)	48(26.4)	30(16.5)	47(25.8)	2.33	1.505
	Weighted mean = 2.26, Arithmetic mean = 9.04, Standard deviation = 6.168							

Key: Daily (D=5); Weekly (W=4); Monthly (M=3); Occasionally (O=2); Never (N=1)
Decision Rule:0.10.-1.33= LF (Low Frequency), 1.33-2.67= MF (Moderate Frequency), 2.68-4.00= HF (High Frequency).

Result on the frequency of use of electronic health records system by medical doctors in private university teaching hospitals in South-West, Nigeria, revealed that 56 (30.8%) of the respondents claimed that they made use of electronic health records system to solve a

diagnostic problem. A total of 32 (17.6%) used electronic health records system to solve diagnostic problem on weekly basis whereas 33(18.1%) used it monthly while 35(19.2%) used electronic health records occasionally. Twenty six of them representing 14.3% indicated that they never used electronic health records system to solve a diagnostic problem. Similarly, 36 (19.8%) of the respondents indicated that they make use of electronic health records system for medical care on daily basis while 21(11.5%) claimed they used electronic health records weekly for medical care, 48(26.4%) used it monthly while 47(25.8%) of the respondents never used electronic health records for medical care. From these results, it could be noted that the frequency of use of electronic health records by medical doctors in private university teaching hospitals was used to solve diagnostics problems daily.

However, to further determine the frequency of use of electronic health records systems by medical doctors in private university teaching hospitals, the use of .test norm was adopted where the maximum obtainable weighted mean score was 4.00. As such, the lower bound of 0.10.-1.33 represents a low frequency of use; the middle bound of 1.33 – 2.67 represents moderate frequency of use and the upper bound of 2.68 – 4.00 represent a high frequency of use of electronic health records. It could be observed from Table 5 that the arithmetic mean recorded was 2.26 which falls within the moderate range. Therefore, the frequency of use of electronic health records systems by medical doctors in private university teaching hospitals was moderate.

The frequency of use of electronic health records systems by medical doctors in private university teaching hospitals was moderate. The finding agrees with Englebright et al. (2014) that frequent use of EHR systems will help medical doctors to analyse, document and communicate basic care elements to improve uptake among healthcare providers. It can be said that regular use of electronic health records system provides a complete record of a clinical patient and support medical doctor's knowledge. This finding agrees with Assis-Hassid et al (2019) who reported that there is a high degree of variance in the ways care teams use EHRs systems during morning rounds. The findings of the present study do not agree with Cholo, et al., 2015 that inadequate ICT skills by medical doctors would not fully embrace the regular use of e-health technologies and will make the application of electronic health records systems more complex. Finally, the finding of the present study supports Ayeni and Oladoyinbo (2014) that there is poor patronage of the EHRs system in hospitals because only 10% of Nigerians can afford it.

Research Question 4: What is the perceived usefulness of electronic health records system by medical doctors in private university teaching hospitals in South-West, Nigeria?

Table 4: Perceived usefulness of electronic health records system by medical doctors

Relative Advantage ($\bar{x}$ = 12.86, δ = 2.885) Weighted Mean =3.22											
S/N	**Statement**	**SA**		**A**		**D**		**SD**		**Mean**	**S.D**
		Freq.	**%**	**Freq.**	**%**	**Freq.**	**%**	**Freq.**	**%**		
I	EHR system improves the quality of my work.	68	37.4	70	38.5	21	11.5	23	12.6	3.30	0.995
Ii	Using an EHR system improves my job performance.	49	26.9	80	44.0	38	20.9	15	8.2	3.16	0.657
Iii	EHR system causes enhances the effectiveness of my job.	57	31.3	82	45.1	19	10.4	24	13.2	3.29	0.613
iv.	Use of the EHR system gives me greater control over my work.	38	20.9	52	28.6	49	26.9	43	23.6	3.11	0.620
Compatibility ($\bar{x}$ = 12.10, δ = 2.852)Weighted Mean =3.03											
S/N	**Statement**	**SA**		**A**		**D**		**SD**		**Mean**	**S.D**
		Freq.	**%**	**Freq.**	**%**	**Freq.**	**%**	**Freq.**	**%**		
V	Using EHRS is compatible with all aspects of my work.	41	22.5	73	40.1	53	29.1	15	8.2	2.93	0.825
Vi	Using EHRS is completely compatible with my current situation.	37	20.3	65	35.7	44	24.2	36	19.8	3.01	0.762
Vii	Using EHRS fits into my work style.	60	33.0	81	44.5	29	15.9	12	6.6	3.17	0.680
Viii	It addresses my job-related need	40	22.0	99	54.4	22	12.1	21	11.5	2.99	0.585

Key: Strongly Agree (SA=4); Agree (A=3); Disagree (D=2); Strongly Disagree (SD=1).

4b: Perceived usefulness of electronic health records system by medical doctors (Timeliness) $\bar{x}$ = 13.33, δ = 3.094, Weighted Mean = 3.33											
S/N	**Statement**	**SA**		**A**		**D**		**SD**		**Mean**	**S.D**
		Freq.	**%**	**Freq.**	**%**	**Freq.**	**%**	**Freq.**	**%**		
Ix	EHRs system enables me to accomplish tasks more quickly	98	53.8	48	26.4	20	11.0	16	8.8	3.42	0.815
X	It enables an increase in my productivity	65	35.7	54	29.7	33	18.1	30	16.5	3.40	0.783
Xi	Using EHRs reduces the time spent on unproductive activities	58	31.9	58	31.9	45	24.7	21	11.5	2.96	0.827
Xii	Using EHRs saves time	103	56.6	46	25.3	18	9.9	15	8.2	3.55	0.669
Overall Weighted Mean = 3.19, Overall all mean score= 38.29, Standard deviation = 8.831											

Decision Rule: 1-1.49 = SD (Strongly Disagree), 1.5-2.49 = D (Disagree), 2.5-3.49 = A (Agree), while 3.5-4 = SA (Strongly Agree). The criteria mean =2.50 that is 4+3+2+1=10 ÷ 4 = 2.5. This implies that any score less than 2.5 is consider Disagree

The information presented in Table 4b on the perceived usefulness of electronic health records system by medical doctors in private university teaching hospitals in South-West, Nigeria, showed the results under three indicators of relative advantage, compatibility and timeliness. On the relative advantage, 68(37.4%) of the respondents strongly agreed with the statement that the EHR system improves the quality of my work, 70(38.5%) also agreed with this statement while a total of 44(24.1%) disagreed at the varying extent with the statement. the highest mean of 3.30 was recorded under relative advantage. In the same vein, 57(31.3%) and 82(45.1%) of the respondents strongly agreed and agreed respectively with the statement that the EHRs system causes enhances effectiveness in my job while 19(10.4%) disagreed and 24(13.2%) strongly disagreed with this statement. in terms of mean ranking, the statement EHRs system causes enhance effectiveness in my job had a mean score of 3.29.

On compatibility, the statement "using EHRs system fits into my work style" ranked first in terms of mean score with a mean of 3.17 as 60(33.0%) strongly agreed with the statement, 81(44.5%) agreed with the statement that using EHRs system, fits into my work style while only 41(22.5%) disagreed with the statement at varying extent. Another statement given prominence in terms of agreement and mean score was Using the EHRs system is completely compatible with my current situation. (SA: 37, 20.3%; A: 65, 35.7%; D: 44, 24.2%; SD: 36, 19.8%; mean=3.01, St.D= 0.762).

Further, the result on timeliness showed that the majority of respondents agreed that the electronic health records system saves time with 149(81.9%) agreeing at varying extents with only 33(18.1%) disagreement score and a mean score of 3.55. Also, 98(53.8%) of the respondents with the statement that EHRs system enables me to accomplish tasks more quickly, 48(26.4%) agreed while 20(11.0%) and 16(8.8%) disagreed and strongly disagreed with this statement (mean=3.42, St.D=0.815). It could be observed that timeliness had the highest weighted mean score of 3.33. From these results, it could be concluded that most of the doctors in private university teaching hospitals in South-West,

Nigeria actually perceived electronic medical records to be very useful, especially in terms of timeliness and relative advantage.

Some medical doctors in private university teaching hospitals in South-West, Nigeria actually perceived the electronic health records system to be very useful, especially in terms of its timeliness and relative advantage. A significant positive influence exists between perceived usefulness and the use of electronic health records by medical doctors in private university teaching hospitals in South-West, Nigeria. This finding supports Gyamfi et al (2017); Evans et al. (2014); Assis-Hassid et al. (2019) and Taiwo et al. (2016) that the EHR system is very useful as it includes patient demographics, problem lists, financial data, clinical documentation, order information, laboratory and diagnostic test results, medications and allergies, clinical events monitors, preventive care recommendations and decision support tools that enhance the efficiency and effectiveness of patient care. Similarly, the finding corroborates Vitari and Ologeanu-Taddei (2018); Crampton et al. (2016) that perceived usefulness and perceived ease of use as the two main antecedents and actual use of electronic health records systems. It also lends credence to the truthfulness of the findings reported by Mathai et al. (2017) that the use of EHR software has a significant impact on the productivity of health providers.

Hypotheses

The null hypothesis formulated to guide the study was tested at 0.05 level of significance.

Hypothesis: Perceived usefulness has no significant relationship with the use of electronic health records systems by medical doctors in private university teaching hospitals in South-West, Nigeria.

Table 5: PPMC showing relationship between perceived usefulness and use of electronic health records system by medical doctors

Variables	Mean	SD	N	Df	R	Sig p	Remark
Perceived usefulness	38.29	8.831					
Electronic health records system	40.17	15.674	182	2	0.122	.000	Sig

Sig at 0.05 level

It could be deduced from Table 5 that the Correlation Coefficient (r=0.122) indicated a positive correlation between perceived usefulness and the electronic health records system used by medical doctors in private university teaching hospitals in South-West, Nigeria is 0.122; P=0.000; < 0.05. Thus, there was a significant relationship between perceived usefulness and the electronic health records system used by medical doctors in private university teaching hospitals in South-West, Nigeria. Thus, the hypothesis was not accepted as a significant positive relationship existing between perceived usefulness and the use of electronic health records by medical doctors in private universities teaching hospitals in South-West, Nigeria. In other words, when medical doctors perceived electronic health records to be useful, there is a tendency that they would use the electronic health records system.

This finding agrees with the submission of Kivekas et al. (2018) on physicians' estimate of electronic prescribing impact on patient safety and quality of care. The finding revealed that physicians' perceived usefulness of e-prescribing was significantly associated with patient safety and quality of care. The finding also support Taiwo et al. (2016) that the EHR system is very useful as it includes patient demographics, problem lists, financial data, clinical documentation, order information, laboratory and diagnostic test results, medications and allergies, clinical events monitors, preventive care recommendations and decision

support tools that enhance the efficiency and effectiveness of patient care. However, the finding of the present study did not agree with Asan, et al (2015) that experienced physicians tend to use EHRs systems less often, while physicians in training tend to increase their use as they gain clinical experience.

Conclusion and Recommendation

1. The study concluded that relative advantages, compatibility and timeliness as indicators of perceived usefulness influenced the use of electronic health records systems among medical doctors in private university teaching hospitals in South-West, Nigeria. Under the perceived usefulness, the study found timeliness and relative advantage to be more significant in using electronic health records systems. Perceived usefulness influences medical doctors to use electronic health records systems in private university teaching hospitals in South-West, Nigeria. There is therefore a need for electronic databases compiler/designers to intensify efforts towards ensuring the combination of relevant software that will be compatible with the routine services of medical doctors in teaching hospitals.
2. Conscious effort should be made at creating awareness through periodic training for medical doctors on the importance and applicability of electronic health record systems for medical services. A major limitation of this study is that it was carried out among medical doctors in private university teaching hospitals, in South-West, Nigeria. A comparative study of relative advantages and compatibility of electronic health record systems could be considered among medical doctors in public and private university teaching hospitals in South-west, Nigeria.

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