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BENEFITS AND CHALLENGES OF USING ICTS IN HEALTH INFORMATION MANAGEMENT AT OLABISI ONABANJO UNIVERSITY TEACHING HOSPITAL, SAGAMU, OGUN STATE, NIGERIA

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Abstract

Purpose: *This study was carried out to investigate ICT use in health information management at the Olabisi Onabanjo University Teaching Hospital, Sagamu, Ogun State, Nigeria.*

Design/Methodology/Approach: *The descriptive survey research design was adopted for this study. Three objectives and seven research questions were formulated to guide the study. A census technique was used to select the entire 78 staff of the Health Information Management Department of the Hospital. Instruments for data collection was a well-structured questionnaire. The study used frequency counts, percentages, mean and standard deviation as statistical measures for data analysis.*

Findings: *The results revealed that barriers to ICT use in health information management included: poor internet availability (mean = 3.72), the secondly highly ranked construct was inadequate funding (mean 3.65), the third construct with the high mean score was unstable electricity supply (mean = 3.58) while the least ranked barrier was the cost of internet installation and maintenance (mean = 3.31).*

Implication: *Suggested solutions to barriers to ICT use in health information implies that the hospital should ensure sustainable internet connectivity in the hospital for effective health information processing, storage, and retrieval.*

Originality/Value: *It was recommended that the hospital should develop electronic health information management system for effective health information services which is central to medical research and training; also that, the health authorities in the state should provide more funds for effective health service delivery in the hospital.*

Keywords: *ICT Use, Barriers to ICT Use, Health Information, Management*

Paper type*: Empirical research*

Introduction

In Nigeria and the rest of the world, the health sector is one of the key sectors of the economy where human existence largely depends. A major reason for this dependence boils on the fact that health care alleviates suffering and elongate human life. Scholars (Amjeriya & Malviya, 2012) have claimed that quality healthcare data play a vital role in the planning, development, and maintenance of optimal healthcare for the citizenry (Sakowska, Thomas, Connor, & Roberts, 2017).

The introduction of ICT in health care has improved the performance of the health care sector greatly. ICT now represents a key driver of a good health care delivery system all over the world. Besides, ICT helps in planning, monitoring, controlling, and improving health services as well as encouraging the exchange of information among the stakeholders in the sector (Kimaro, 2006). The use of ICT in hospital services also extended to patients' health information management system. A system that occupies the central place in the entire health service delivery structure concerning health data collection, storage, and

retrieval (Adeleke et al., 2015); (Plomp, Batenburg, & Verheij, 2011); (Pyper, Amery, Watson, & Crook, 2004).

Kimaro surveyed the strategies for developing human resource capacity to support the sustainability of ICT-based health information systems in Tanzania; he found in his research that introducing ICT in health care helps to manage resources, increase efficiency, increase work productivity and reduce the workload of health care workforce (Kimaro, 2006).

In many hospital settings in Nigeria, the organization of medical information has improved when compared with what obtains in the past (Jungwirth & Haluza, 2019), this is due to the introduction of ICT in the health care system in the country. Patients' health information is now driven by an electronic health records system. Electronic Health Information Management Systems (EHIMs) guarantees increasing accessibility and effective management of medical information in all levels of health delivery systems (i.e primary – tertiary) levels.

Brief historical records of health informatics in Nigeria

Records show that the history of health informatics in Nigeria can be traced to the late 1980s when a collaborative research project between the Computing Centre of the University of Kuopio, Finland; the Obafemi Awolowo University and the Obafemi Awolowo University Teaching Hospitals Complex (OAUTHC). The joint project produced the first reference to the hospital information system in the country and this led to the expansion of the then rudimentary hospital information system intending to develop a comprehensive system suitable for use in all Nigerian Teaching Hospitals and medical centers.

The team proposed that by 2001 all the Teaching Hospitals in Nigeria would have established health informatics units which will encourage the use of standardized software. Unfortunately, the system was not tested at OAUTHC and only five teaching hospitals and medical centers use the system as in 2007, this was due to limited resources to purchase the commercial software needed to drive the proposed system.

It was also gathered that, in 2003, a non-commercial software package called the State Hospital Network (SHONET) was developed for sharing of hospital resources over the computer network in Nigeria to minimize the cost of running state hospitals in the country. In 2004, another system was developed at the Department of Computer Science & Engineering, Obafemi Awolowo University, Nigeria for referral of patients from one hospital to another such that patient's case file, referral note and medical examination result that were transferred manually from one hospital to another could be transferred over a computer network.

To date, Nigerians have witnessed continuing advocacy and an increasing number of individuals yearning for computerization of health information and healthcare processes in addition to the Government efforts putting in place strategies for the adoption and implementation of health informatics (Adeleke et al., 2015).

Above all, while it is difficult to ascertain the extent of ICT utilization in patient care, it cannot be overemphasized that ICT remains critical to sustainable health service delivery in the country.

Statement of Problem

Sustainable health service delivery in Nigeria has the potential to benefit not only the masses but all citizenry regardless of their socio-political status. It is however worrisome that hardly can one find a public hospital in all the 36 states of Nigeria where the health information management system is fully computerized. This implies that many public hospitals in the country are yet to fully embrace the power of ICT in the provision of basic medical services despite the upsurge in the number of patients seeking quality and timely health care services.

Besides, it has been reported that most health care organizations in developing countries including Nigeria are overloaded with information but cannot manage and analyze this information using ICTs (Kimaro, 2006); (Shivute, Maumbe, & Owei, 2008). Also, studies (Kalusopa, 2017) have shown that governments and donors have made a giant stride to design and implement electronic health information

management systems. Nonetheless, the extent of this is difficult to determine. The current study examined the extent of ICT use in Health Information Management at the Olabisi Onabanjo University Teaching Hospital, Sagamu, Ogun State, Nigeria.

Objectives of the Study

The main objective of this study is to examine the benefits and challenges facing use of ICTs in health information management at Olabisi Onabanjo University Teaching Hospital (OOUTH**)**, Sagamu, Ogun State. This study was guided by the following specific objectives:

1. Determine the benefits of ICT use in Health Information Management practices at OOUTH.
2. Investigate the challenges to ICT use in Health Information Management practices at OOUTH.

Research Questions

The following related questions were answered in this study

1. What are the benefit of ICT use by Health Information Management Officers in OOUTH?
2. What are the challenges militating against ICT use in Health Information Management practices in OOUTH?.

Review of Related Literature

The health care industry is a multi-disciplinary sector that embraces professionals from both medical and paramedical disciplines (Jamal, McKenzie, & Clark, 2009); (Adeloye et al., 2017);

(Shivute, Owei, & Maumbe, 2008). One of the best ways to deliver in such a diverse industry is through the adoption of ICT. However, the level of ICT literacy among care providers will go a long way to impacting the overall health care structure of any given country. It has been established in the literature that telemedicine is one of the fastest-growing areas of ICT applications in the health sector for services enhancement in different countries.

ICT Use in Health Care

The use of ICT in patient care is well documented in the literature (Shivute, Maumbe, et al., 2008);(Plomp et al., 2011); (Robert et al., 2014); (Shivute, Owei, et al., 2008); (Omotosho, Ayegba, & Emuoyibofarhe, 2019). Robert *et al* described ICT as a means of coping with the increasing number of patients with chronic diseases in this aging society.

In the study of Shivute et al who assessed the emerging ICT use patterns for health service delivery in Africa, it was found that capability to use ICT among care providers will subsequently influence how they deliver services to their patients now and in the future (Shivute, Maumbe, et al., 2008).

I another study by Vroman who examined ''who over 65 is online?'', their study showed that the majority of participants used ICT to maintain family and social connections and to access information on health and routine activities. However, those aged 65–70 with higher education and are living with a spouse were more likely to use ICT (Vroman, Arthanat, & Lysack, 2015).

Braa, et al. (2004) presents the result from a study on the use of information and communication technologies (ICT) in Mozambique with a focus on the health sector. They found that development of ICT capacity and information systems at district and provincial levels in Mozambique needs to be an integrated effort across sectors since the level of ICT use among the workforce was somewhat low (Braa, Monteiro, & Sahay, 2004);(Braa, Hanseth, Heywood, & Mohammed, 2016).

Readings have shown that recent innovations in ICT have led to a new era in health care delivery and medical data management especially regarding the security of sensitive medical information (Giakoumaki, Pavlopoulos, & Koutsouris, 2006). Several benefits of ICT have been well documented in many clinical studies (Jamal et al., 2009).

Health Information Management

Experts in the health sector depend primarily on patient health records to discharge their duties efficiently. Patients' health records thus represent the central slate upon which clinical investigations are recorded and preserved for planning, research, monitoring, and policymaking purposes (Murphy, 2010). One importance of keeping accurate patients' health information is the fact that when human memory fails, accurate patients' records bring to mind what has been written even for millenniums ago (Sherer, 2010).

A Health Information Management System (HIMS) refers to a combination of people, tools (e.g. ICTs), and routine procedures to provide and use patients' health information (Kimaro, 2006). It has been argued that health information systems aim to contribute to high-quality, efficient patient care (Haux, 2006). Studies have shown that greater access to health information may improve health status by enhancing the quality of health-related decisions; in turn, health care costs may be reduced (Cline, 2001).

Information from the patient's health records is critical for a quality health-related decision making (Ramez, 2012); (Kasapoğlu, 2016) (Venugopala, Jinkab, & Priyac, 2016). Accurate health information also enhances timely access to patient information (Mony & Nagaraj, 2007). It has been argued that the purpose of a patient record is to recall observations, to inform others, to instruct students, to gain knowledge, to monitor performance, and to justify interventions (Haux, 2006); (Venugopala et al., 2016).

Collected works have shown that the introduction of ICT to ease the exchange of information among doctors and patients is likely to radically modify the perception of the activities carried out by the latter, creating a new arena of visibility for those practices.

Record keeping in healthcare delivery is germane. Health records can either be kept manually or electronically (Leung, 2016). The electronic health record (HER) has been defined as a longitudinal health record with entries by healthcare practitioners in multiple sites where care is provided (Poncelet & Hudson, 2015). An electronic health record (EHR) is designed to overcome many of the limitations created by a manual health records system and can provide additional benefits that cannot be attained by a static view of events.

The global shift from curative to preventive care, from hospital care to community and public health care, from centralized to decentralized health care, from a specific project approach to a comprehensive sectoral approach, has necessitated the restructuring of fragmented health information systems in many countries into single comprehensive health and management information systems begging for total transformation. The restructuring of health information systems, in particular, has become an important trend in the entire developing world since the adoption of the electronic health records system (Chaulagai et al., 2005).

The electronic health record has been acknowledged as an important driving force for modern healthcare delivery (Huaynoca, Svanemyr, Chandra-mouli, Jeaneth, & Lopez, 2015). It is used primarily to set objectives and plan patient care, documenting the delivery of care, and assessing the outcomes of care (Jha et al., 2006).

Academics examined the role of mobile health technology which is a bye product of the health information management system (Doukas, Pliakas, & Maglogiannis, 2010). Besides, the arrival of electronic health records management has equally enhanced personal health information management of the diverse patients' visiting health service centers in many developing nations(Pratt, Unruh, Civan, & Skeels, 2006)

In the study conducted by (Jamal et al., 2009), on the importance of technology on the quality of care, they recommended that it is important to identify any technical difficulties as early as possible from the respective users. In a similar study by Haakalaki, et al (2018), it was discovered that there is a need to improve the performance of the current system to integrate the Electronic Health Records system for improved efficiency (Bennett & Doub, 2011).

In an investigation conducted by Zhang, et al (2017) on information communication technology (ICT) use among PLHIV in China: A promising but underutilized venue for HIV prevention and care, the findings from this study is that there was an imbalance in the participants' ICT device ownership and choices of media platform. Social media appeared to be a potential platform for health intervention among this group. There was a low penetration of computer use among rural participants and a large disparity between the urban and rural participants, which indicated a need to expand the current infrastructure related to ICTs and increase people's health literacy.

Afolayan & Oyekunle, (2014) from their study conducted on availability, accessibility, and

frequency of use of ICT tools by health professionals in Ilorin metropolis it was found that there were superior availability and use of computers, projectors, e-mails and Internet by health professionals in private hospitals than those in public hospitals. This is a result of the financial implications of the procurement and installation of these facilities. According to the authors, interestingly, the level of awareness of users on the numerous benefits of ICTs on their job and productivity is quite impressive. It is, therefore, concluded that hospitals' regulatory agencies should collaborate with international agencies such as World Health Organization (WHO), United Nations Organization (UNO) and the European Union, among others, to aid in the successful implementation and funding for the procurement of sophisticated ICTs to facilitate the dissemination of up to date health information to the public and private hospitals.

Outcomes from a study on ICT and health system performance in Africa: a multimethod approach, by (Mimbi & Bankole, 2015), indicated that ICT significantly improves life expectancy at birth and reduces infant mortality rate. African countries must significantly invest in ICT to improve their health systems to achieve socio-economic development. The current study has theoretical, methodological, and policy implications.

The study on knowledge and use of information and communication technology by health sciences students of the University of Ghana indicated that students have adequate knowledge and use of computers. It brings about an opportunity to introduce ICT in healthcare delivery to them. This will ensure their adequate preparedness to embrace new ways of delivering care to improve service delivery (Dery et al, 2016).

A comprehensive knowledge management process framework for healthcare information systems in the healthcare industry of Pakistan, findings from the study indicated that there is always an opportunity to improve and enhance the way the knowledge is handled in healthcare organizations (Arshad, Noordin & Othman 2016). Due to technological innovations and procedural improvements, healthcare organizations in Pakistan are striving to expand and increase dependency on integrated Knowledge Management Process Models and Frameworks that not only improve the effectiveness and efficiency of Healthcare Information Systems in Healthcare Organizations of Pakistan but also save time and effort to manage knowledge.

Usang et al. (2015), from their study conducted on Assessment of influence of student perception, knowledge, and area of specialization on ICT utilization for academic purposes in College of Health Technology, Calabar. The findings of the study revealed that the use of ICT for teaching and learning and the greater awareness of the benefits of ICT use in academics is recommended.

In another study by Protti, Johansen & Perez-Torres (2009),

Comparing the application of Health Information Technology in primary care in Denmark and Andalucía, Spain, the study revealed that although similar in many respects, there are significant differences between these two relatively autonomous health systems which have led to the rates of uptake of physician office computing. Particularly notable is the reality that the Danish primary care physicians have individual "Electronic Medical Records" while in Andalucía, the primary care physicians share a common record which when secondary care is fully implemented will indeed be an "Electronic Health Record".

From the reading of Adeleke, et al, (2015) who examined computer and internet use among tertiary healthcare providers and trainees in a Nigerian public hospital, it was found that healthcare providers and trainees at Federal Medical Centre, Bida has a good disposition towards computer and Internet use especially for the enhancement of their professional practice and improvement of patient care quality. Any effort at enriching their sources of information and enhancing their usability of these technologies would be worthwhile.

Even though organizations are always looking for ICT in general or specifically Information System as an enabler for them to improve their services and products Carroll et al (2014), "Visualization and analytics tools for infectious

disease epidemiology: a systematic review," studies reported that technological barriers still cause a major roadblock to HIS implementation and adoption. In a study by McGinn et al, (2011) on "comparison of user groups' perspectives of barriers and facilitators to implementing electronic health records: a systematic review," results revealed that technological barriers cause an obstacle in the implementation of a HIS in 16 European countries and 14 US states, which includes; ineffective design, data loss caused by different errors that the system may have and the usefulness of the IT, an issue that has a big impact on their willingness on the adoption of a new HIS. However, despite HIS importance Einbinder et al, (2010), on Transforming health care through information: Case studies, study results revealed technological issues experienced by the medical team in adopting HIS in practice, in Malaysia. Their study explained that although generally, physicians believed that using HIS would bring many benefits over a paper-based method to the physician, most especially improved efficiency of the clinical process. But, if HIS is unstable and not user friendly, it will demand increased mental effort to operate and staff will likely feel negatively toward it.

Ouma & Herselman (2008) investigated E-health in Rural Areas: Case of Developing Countries, ICT infrastructures, and e-health technologies in place in five rural hospitals in Kenya. A technology assessment was carried out within the five rural hospitals focusing on the access level of ICT, the current condition of ICT infrastructure, and the barriers militating against the use of ICT. The findings from their study revealed that ICT infrastructures that existed include computers, the Internet, and information systems in the pharmacy and finance offices respectively. However, Electronic Health Records (EHR) and telemedicine were not in place. Barriers to the successful implementation of ICT in these rural hospitals include a lack of computer equipment, a lack of computer skills, and the cost of the computer. These barriers affected the reliability, accessibility, and sustainability of ICTs in rural hospitals.

Another study by Adedoyin, Imam and Oladapo (2009) investigated the ICT literacy among the health workers of Igbinedion University Teaching Hospital (IUTH) Okada, using a survey method to elicit information from the respondents for the study. Among other things, the study revealed that a greater number of respondents which represents 74.5% of the sampled population are aware of the use of ICT equipment in health institutions; though media and friends were the major sources of awareness to the respondents. The study also revealed that 66% of the respondents were aware of telemedicine but unfortunately, 76.6% do not have ICT equipment in their various departments. The study also investigated the attitude of health workers in IUTH to the use of ICT and it was revealed that the non-availability of ICT equipment had hindered the health workers from showing serious interest, leading to widespread apathy towards ICT because of lack of facilities for their use. The study concluded from its findings that a greater number of health workers in the developing nations are becoming aware of the use of ICT in health institutions to increase the effectiveness of health care services delivery.

Moule et al.'s (2010) study on Nursing and health care students' experiences and use of E-learning in higher education, found that the staff had very little time to undertake any E-learning development and the majority of E-learning was in the form of instruction and did not involve any student group collaboration (Moule et al., 2010).

An Australian study on Information literacy skill development and life long learning: exploring nursing students' and academics' understandings, (Nayda and Rankin, 2009) highlighted that collaboration between nursing faculty and librarian staff was one approach in addressing the need for staff development to use digital technologies. Staff development was also needed to develop an online assessment.

Childs et al. (2005) surveyed the effective e-learning for health professionals and students; barriers and their solutions. A systematic review of the literature, also found that the staff lacked the required ICT skills but indicated that there were many barriers to effective E-learning including financial burden to update

and acquire new technology; lack of training; poorly designed courses; the time-intensive nature of E-learning and the lack of learner and trainer interest in online learning.

Shah et al. in their study titled "The role of Mobile Health intervention in improving knowledge and skills of accredited social health activists in tribal areas of Gujarat, India: a nested study within an implementation research trial" concluded mobile Health to be a beneficial intervention for improving accredited social health activists knowledge and skills related to maternal and child health (Shah et al. 2018)

Sharma et al. conducted a study in the state of Rajasthan in India to explore the role of ICT in the improvement of the government health system and suggested that ICT would be highly beneficial for the population in scattered areas and further proposed an ICT based electronic health information model (Sharma et al. 2017).

Factors influencing ICT use in Health Information Management practices

ICT use in Health Information Management is confronted with a lot of factors ranging from poor funding to inadequate infrastructural facilities. Literature has shown that ICT use in patient care general can be affected by the inadequate understanding of the socio-technical aspects of IT, particularly the understanding of how people and organizations adopt information technology (Kijsanayotin, Pannarunothai, & Speedie, 2009). These scholars also documented that intention to use health IT is a function of the perception that health IT is useful (performance expectancy), that it exhibits ease of use (effort expectancy), that important other believed that he/she should use health IT (social influence) and the perception that one has a choice in the use of IT (voluntariness).accoridng to Kijsanayotin et al, the predictive power of these four factors was substantial and accounted for more than half of the variance in the intention to use IT. Among these four influencing factors, performance expectancy was by far the strongest predicting factor (Kijsanayotin et al., 2009).

Methodology

This study employed a descriptive design to survey ICT use in health information management. The study was conducted among the entire 78 staff of the Health Information Management Department of the Hospital using census technique with no need for sampling. A structured questionnaire was used for data collection. The questionnaire comprised a five-point Likert scale (where 1 has a score = low, 2= slightly high 3 = somewhat high, 4 = moderately high, 5 = extremely high) was used to measure the level of ICT use in HIM practices in OOUTH. A four-point Likert scale (where 1= Extremely low 2 = Low, 3 = moderately high, 4 = extremely high) was used to measure the level of awareness of technology application in HIM practices in OOUTH. A four-point Likert scale (where 1= not a barrier 2 = some barrier 3 = moderately barrier 4 = extremely barrier) was used to assess the barriers to ICT application in HIM practices in OOUTH.

The questionnaire was tested for validity and reliability (see table 1) using Cronbach's alpha test. The reliability test revealed a high level of inter-item consistencies. Data generated for the study were analyzed using descriptive statistics such as percentage distribution, mean and standard deviation with the aid of statistical package for social science (SPSS) version 23.

Table 1: Reliability Test

Variables measured	Number of Items	Cronbach's alpha scores based on standardized items
Level of ICT use	10	0.93
ICT used in HIM	6	0.80
Barriers to ICT use	8	0.78

Results and Discussion

Research Question 1: What are the benefits of ICT use by Health Information Management Officers in OOUTH?

Survey items	Disagree	Strongly disagree	Neutral	agree	Strongly agree	Mean	SD
ICT aids statistical presentation and reporting	10(12.8)	2(2.6)	1(1.3)	17(21.8)	48(61.5)	4.87	1.427
ICT has made it possible to quickly find and distribute health information	1(1.3)	9(11.5)	1(1.3)	14(17.9)	53(67.9)	4.50	.849
ICT helps in the registration of patients	4(5.1)	6(7.7)	2(2.6)	22(28.2)	44(56.4)	4.37	0.927
Misfiling and mislaying of patients' records will be laid to rest through ICT	6(7.7)	6(7.7)	0(0.0)	19(24.4)	47(60.3)	4.33	1.136
ICT aids effective statistical collation	4(5.1)	5(6.4)	4(5.1)	14(17.9)	51(65.4)	4.33	1.040
ICT safe hospital cost of paper stationary	6(7.7)	3(3.8)	2(2.6)	20(25.6)	47(60.3)	4.33	1.040
The use of technology eliminate time currently spent looking for and pulling records	5(6.4)	6(7.7)	2(2.6)	17(21.8)	48(61.5)	4.29	1.094
ICT enhances access to patients' clinical information	10(12.8)	5(6.4)	4(5.1)	25(32.1)	34(43.6)	4.26	1.200
ICT supports hospital and physicians practice	5(6.4)	3(3.8)	5(6.4)	17(21.8)	48(61.5)	4.24	1.034
ICT improves communication among health care provides	1(1.3)	7(9.0)	4(5.1)	26(33.3)	40(51.3)	3.96	1.221
Weighted mean and SD						**4.35**	**1.097**

Table 2a: Benefit of ICT use by Health Information Management Officers in OOUTH
Source: Field survey 2019

On one hand, when interpreting from top to bottom, table 2a provide the readers with a total number of responses per construct. On the other hand, when reading the table horizontally, the results provide the readers with frequency and percentage distribution, mean and standard deviation. Overall, the study revealed that there were no low mean scores for all the recorded constructs of ICT use by use by Health Information Management Officers in the study area. However, the construct with the highest mean score was ICT aids statistical presentation and reporting (mean = 4.87); closely followed by the second construct with the highest mean - ICT has made it possible to quickly find and distribute health information (mean 4.50). Others include ICT helps in the registration of patients (mean = 4.37); Misfiling and mislaying of patients' records will be laid to rest through ICT (mean = 4.33); ICT aids effective statistical collation (mean = 4.33); ICT safe hospital cost of paper stationery (mean = 4.33); while the construct with the lowest mean as recorded by the respondents was ICT improves communication among health care provides (mean = 3.96).

A critical assessment of these responses pointed to the fact that the Health Information Management Officers in the study area had a good knowledge of ICT use. It can also be said that these Officers will make effective use of related ICTs in their field of study for effective health information service delivery in the hospital.

Table 2b: Benefit of ICT use by Health Information Management Officers in OOUTH

Statement	Strongly agree	Agree	Disagree	Strongly disagree	Mean`	SD
ICT helps in day to day activities of health information services	54(69.2)	24(30.8)	0(0.0)	0(0.0)	4.50	0.85
ICT helps in maintenance and records keeping of patients	50(64.1)	28(35.9)	0(0.0)	0(0.0)	4.37	0.93
ICT helps in coping and indexing of clinical diagnosis	45(57.7)	30(38.5)	0(0.0)	3(3.8)	4.33	1.04
ICT supports information processing, decision making and record keeping	42(53.8)	33(42.3)	3(3.8)	0(0.0)	4.33	1.04
ICT enhances patients' care and delivery	44(56.4)	29(37.2)	3(3.8)	2(2.6)	4.33	1.14
ICT helps to reduce health care and medical cost	37(47.4)	30(38.5)	7(9.0)	4(5.1)	4.31	1.00
Overall mean and SD					**4.29**	**1.05**

Source: Field survey 2019

As shown in Table 2b, overall, there was a high level of ICT use in Health Information Management practices in OOUTH. The table shows that the construct with the highest mean score was ICT helps in day to day activities of health information services (mean = 4.50). Also, the construct with the second highest mean was ICT helps in maintenance and records keeping of patients (mean = 4.37). The means of other constructs include; ICT helps in coping and indexing of clinical diagnosis (mean =4.33); ICT supports information processing, decision making and record keeping (mean = 4.33); ICT enhances patients' care and delivery (mean = 4.33); while ICT helps to reduce health care and medical cost (mean = 4.31) has the least mean score.

The high means of all the aforementioned constructs which range from 4.50-4.31 with an overall mean score of 4.29 on the scale of 5 points indicates that the use of ICT in Health Information Management practices in Olabisi Onabanjo University Teaching Hospital is very high.

Research Question 3: What are the challenges militating against ICT use in Health Information Management practices in OOUTH?

Table 3: The challenges to ICT application in HIM practices in OOUTH

Statements	extreme barrier	moderate barrier	some barrier	not a barrier	Mean`	SD
Poor internet availability	63(80.8)	9(11.5)	5(6.4)	1(1.3)	3.72	.643
Inadequate funding	56(71.8)	17(21.8)	5(6.4)		*3.65*	*.599*
Unstable electricity supply	53(67.9)	18(23.1)	6(7.7)	1(1.3)	3.58	.694
ICT literacy	49(62.8)	19(24.4)	8(10.3)	2(2.6)	3.47	.785
Lack of constant support	43(55.1)	22(28.2)	9(11.5)	4(5.1)	3.37	.791
Slowness of the internet	42(53.8)	25(32.1)	9(11.5)	2(2.6)	3.33	.878
Cost of training	40(51.3)	23(29.5)	14(17.9)	1(1.3)	3.32	.747
Cost of internet installation and maintenance	37(47.4)	30(38.5)	10(12.8)	1(1.3)	3.31	.811
Overall mean and SD					**3.47**	**0.744**

Source: Field survey 2019

The results in table 3 indicated that the first ranked barriers to ICT application in HIM practices in OOUTH were poor internet availability (mean = 3.72), the secondly highly ranked construct was inadequate funding (mean 3.65), the third construct with the high mean score was unstable electricity supply (mean = 3.58) while the least ranked barrier was the cost of internet installation and maintenance (mean = 3.31). Overall, the rating of these barriers on ICT use in health information management at Olabisi Onabanjo University Teaching Hospital was high with an overall mean of 3.47 on the scale of 4points.

out that major barriers to ICT use in Health Information Management included Poor internet availability, inadequate funding, and poor electricity supply to the hospital

Summary of findings

First, findings from this study indicate that the officers had good knowledge of ICT and its potential positive impacts on health information management practices in the hospital.

Second, the findings show that a number of the identified ICTs are being used in the selected hospital.

Third, the outcome of this study underlined the fact that the hospital still has a lot of ICT issues to contend with such as poor internet connectivity, inadequate funding, unstable electricity supply to mention a few.

Conclusion

The study underscored the fact that the Health Information Management Officers at the Olabisi Onabanjo University Teaching Hospital, Sagamu have good knowledge of ICT use in health Information Management. The study established that more ICTs need to be deployed for effective health service delivery to the citizenry. From the study, it was found

Recommendations

1. The hospital should ensure sustainable internet connectivity in the hospital for effective health information processing, storage, and retrieval;
2. The hospital management should sustain the training of Health Information Management Officers in the hospital on the effective use of ICT in their day-to-day activities ;
3. The hospital should develop electronic health information management system for effective health information services which is central to medical research and training;
4. The health authorities in the state should provide more funds for effective health service delivery in the hospital.

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