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January 2020

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IMPROVING CLINICAL DIAGNOSIS IN PUBLIC HOSPITALS IN NIGERIA: INFLUENCE OF HEALTH INFORMATION USE IN DECISION-MAKING.

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ABSTRACT

The aim of the study was to determine health information use in the decision-making process in clinical practice by physicians in public hospitals, South West, Nigeria. To achieve the objectives of the study, two research questions raised and answered in the study were; What are the health information sources used by physicians in public secondary hospitals in Lagos State Nigeria? What is the purpose of health information use among physicians in public secondary hospitals in Lagos State Nigeria? This study is a hospital-based survey conducted across 10 public secondary hospitals in a State in South West, Nigeria. A total of 107 physicians were sampled, adopting a proportionate sampling technique to select relative proportional samples of physicians in ten (10) secondary hospitals. A structured questionnaire was used to collect quantitative data from the study respondents. Results showed that physicians under-use scientific evidence-based biomedical health information sources in making informed clinical decisions. Improving clinical safety practices was the most important purpose for which physicians make use of health information. The study recommended that physicians need to be motivated towards making regular use of scientific through workshops to emphasize the importance of evidence-based and informed decision making in ensuring quality and safety of patient care. In addition, hospital management implementation of point-of-care electronic medical records/health information systems and subscribe regularly to online biomedical databases, peer-review e-journals.

Keywords: clinical diagnosis, clinical decision-making, health information sources, health information use

Introduction

Clinical diagnosis is the major fundamental task undertaken by physicians, and it forms the basis for quality and safer care. Clinical diagnosis is a cognitive, fact finding and decision-making process. In making a diagnosis, it is not usual for physicians to encounter uncertainties in decision making or judgment of the patient case at hand. As such, clinical diagnosis must be adequately supported by facts, information, or knowledge of the patient's condition. Otherwise, information or knowledge gaps may lead to a wrong diagnosis, decisions and treatment of the patient. When a physician makes a wrong decision, the treatment is invariably wrong, and treatment could result in harmful medication or procedures that may complicate, prolong morbidity, or lead to the untimely death of patients. Hence, physicians are bound by moral obligations to exercise caution and diligence in clinical diagnosis practice by seeking adequate knowledge to diagnose and treat a patient (Chukwuneke, 2015). Effective and safe treatment of a patient is impossible without an accurate analysis of the root causes of a patient's illness through in-depth information gathering.

Physicians ordinarily are confronted daily with complex and diverse potential life-threatening conditions of patients they encounter in hospitals. It is believed that a patient may likely experience one or two wrong diagnoses in their lifetime. Challenges in clinical diagnosis are more or less the reflections of human cognitive inadequacies or knowledge gaps. Professional medical training apart, the human mind is fallible and making a wrong judgment or decision is a natural part of human nature to err. The ability of a physician to distinguish and interpret causative factors associated with signs and symptoms of patient ailment and digging information or knowledge where necessary to ensure an accurate diagnosis denotes his level of expertise. Physicians can avoid wrong diagnosis and inappropriate treatment of patients by relying more on proven empirical evidences to confirm diagnostic suspicions and take appropriate clinical decisions and treatment opinions. Clinical diagnosis must be scientifically sound and in congruence with current opinions, evidence, methods and standards in healthcare. This is why physicians are compelled to be lifelong learners constantly updating their professional knowledge.

In making sound clinical diagnosis and treatment decisions in especially difficult and complex cases, it is important for physicians to adopt systematically and decision matrix strategy to identify, analyze and map out both situational and rational evidences on the causative factors associated with an individual patient's sign and symptoms through information gathering. Information gathering and the integration process in decision making involve hypothesis generation and updating previous possibilities as more information is learned. Interpretation of patient condition is critical in clinical diagnosis. Typically, physicians need to establish a working diagnosis from a list of potential differential diagnoses as the possible explanation of the patient's symptoms and conditions. As more information is gained, the working diagnosis is refined to reduce the level of uncertainty diagnosis and treatment (Balogh, Miller, & Ball,

2015). Elstein (1994) proposed hypothetico-deductive model reasoning as a scientific method in clinical reasoning which physicians can adopt when confronted with difficulties in clinical diagnosis (Elstein, 1994). Hypothetical-deductive reasoning approach involves formulation of initial diagnostic hypothesis based the narratives of patient medical history, followed by several phases of information gathering and several hypotheses formulation until a definitive and verified working hypothesis emerges as the basis for treatment options for patient (Elstein, and Schwarz, 2002). Adopting in hypothetical-deductive diagnostic reasoning process in clinical diagnostic decision-making process would prevent bias or premature judgment particularly if physicians' intuitive cognition is nebulous and there is uncertainty. Hypothetical-deductive diagnostic reasoning process helps a physician's reasoning progresses from intuitive to more analytic and scientific methodological conclusions based on empirical evidences (Elstein, 1999). Physicians must continue to explore expert, empirical and evidence-based health information sources in making the most accurate decision to improve quality and safe patient care.

Statement of the Problem

Clinical diagnostic decisions making have important implications for health outcome. It is crucial that physicians seeking and use scientific information or evidences to support clinical decision. Reducing level of uncertainty and making informed decisions ensures accurate and safe care of patient. However, increasing complexities associated with clinical settings such as overbooked clinics, low doctor-patient ratio, time constraints and fatigues are constituting challenges to improving informed decision-making in especially public clinical settings in Nigeria. Physicians when confronted with challenging patient situations and decision making are not able to adequately engage in finding evidence to improve decisions. There are reports of wrong clinical decisions and treatments which subject patients to injuries, physical damages, prolong morbidity and hospitalization, and premature deaths which could have been avoided. Patients with chronic diseases such as cancer, kidney and heart problems are particularly wrongly diagnosed and suffer painful deaths. Postmortem result sometimes indicate that patients died from diseases different from what they were receiving treatment for prior death. For example, a patient may be receiving treatment for stomach ulcer, but found to have died from an ovarian cyst after postmortem examination. Obviously, knowledge gap can lead to decline in professional acumen of physicians and portends negative implications in clinical diagnosis, informed decisions and patient safety. This study therefore aim to examine health information use and purpose among physicians in public secondary hospitals in Lagos State, South-West, Nigeria.

Objectives of the Study

The following are the objectives of this study:

To examine health information sources used by healthcare physicians in public secondary hospitals in Lagos State Nigeria;

To determine the purpose of health information use among physicians in public secondary hospitals in Lagos State Nigeria.

Research Questions

The following research questions are raised for this study:

What are the health information sources used by physicians in public secondary hospitals in Lagos State Nigeria?

What is the purpose of health information use among physicians in public secondary hospitals in Lagos State Nigeria?

Health Information Use

Information use is as old as the human attempt to find out more about sustaining life. Thus, efficient and effective clinical performance of physicians rests on the richness of health information and knowledge they possess to manage patient diseases (Anker, Reinhart & Feeley, 2011). Informed decisions in clinical care have been linked to increased positive patient health outcomes in healthcare delivery. The concept of health information use encapsulate formal and informal actions of healthcare physicians in interacting and applying facts, figures, or ideas, gained from information multiple biomedical sources to make accurate clinical judgments or decisions. It is presumed that a physician would need to read about 20 articles a day all year round to maintain current knowledge of his profession (Shaneyfelt, 2001). Ultimately, the quality and safety of clinical care received by a patient is determined by the professional prowess of the caregiver. Physicians need health information to broaden their knowledge to provide quality and safe manner.

Floridi (2010) defined information as accurate, timely, and data specifically organized for a purpose; to give meaning and relevance; or decreases uncertainty. Essentially, information is a vital strategic resource that pervades our thinking to shape our decisions and actions. Information translates into knowledge and knowledge translates to better decisions and actions. Regular use of health information will improve the capacity of physicians to manage patients in

hospitals. In order for physicians to be well informed, it is necessary for them to be equipped with the requisite health information that can enrich their decisions.

According to Hansen and Wood (2011), successful delivery of medical practice requires the use of health information to improve the healthcare outcomes of patients. Inevitably, physicians, pharmacists and nurses cannot practice successfully without regularly updating their knowledge on issues bordering on current and emerging diseases, rare medical conditions, and emergency and trauma managements. Furthermore, during clinical consultations, physicians usually encounter more questions from patients on how to manage their health conditions than they may be able to provide immediate answers for. Physicians must be vastly knowledgeable to respond to such questions. Gathering scientific biomedical evidence to support clinical care is very important.

Abajebel, Jira, and Beyene (2011) posit that poor level of health information use among physicians in African is due to lack of sound health information systems in health hospital. Developing and managing point-of-care health information systems in hospitals should constitute the backbone for effective and efficient health service planning and patient management. In agreement, Nutley and Reynolds (2013) noted that the value of health information systems is to provide evidence-based database for decision-making, rather than merely generating data for reports that will be left on the shelves rather than using it to improve healthcare.

Shabi, Akewukereke and Udofia (2011) found that physicians in Nigeria underutilized the internet because of their belief that health information obtained from the internet may not be scientifically proven or professionally authoritative. Developing health information systems at hospital level is very important to encourage use of hospital-based health information. Wyatt (2005) identified important databases for physicians to include PubMed, MEDLINE, GENBANK, HIHARY, Embase, Maternity & Infant Care, and WEB of Science, COCHRAN and WHO Global Health Library.

Purpose of Health Information Use

The purpose of health information use among physicians is related to their responsibilities and challenges ranging from decision-making, diagnosis, treatment, surgery, education, research, training, and maintain safety standard practices in hospitals. Therefore, health information use in healthcare delivery should be a continuous practice. It is mandatory for physicians to keep updating their knowledge for efficient practice (Moja & Kwag, 2015). The process of making a clinical judgment should not be taken at face value but weighted based on sound evidence-based health information. Physicians, for example, should be up-to-date with health information on disease conditions, preventive measures, diagnosis, and treatment options built upon a systematic

assembly of evidence. Clinical decision making by physicians should involve using the appropriate evidence to manage patients efficiently.

Adeleke, Asiru, Oweghoro, Jimoh and Ndana, (2015), stressed that physicians must keep abreast new developments in medicine and continue to update their knowledge for making better clinical decisions. Diagnoses, treatment and care of patients must be devoid of mistakes or assumptions due to uncertainty in the decision-making process. Quality patient care requires sound, expert and evidence-based decisions. Access to health information by the physicians has been directly linked to efficient healthcare delivery and increased positive health outcomes (Assem & Pabbi, 2016).

Anker, Reinhart, and Feeley (2011) opined that efficient and effective performance of physicians rest on the richness of health information and knowledge they possessed in effectively comprehending, evaluating and successfully managing and preventing patient diseases. Thus, health information use is critical in providing quality patient care that can guarantee patients' well-being. However, lack of trained health information system managers constitutes obstacles to the development of functional health information systems in health institutions in Nigeria.

Ali (2011) found out that ambiguity, uncertainty, rare diseases and having the multiplicity of treatment options, answering patient questions and writing research papers were the purposes for which the physicians use health information. Norbert and woga (2012) found that physicians' purpose for seeking health information is to enhance their professional practicing knowledge on a daily basis. They particularly need information on patient care, in addition to needing information for research and further education purposes.

Wrong Clinical Diagnosis Decision Making

Igwegbe, Eleje, and Okpala, (2013) in a study determine the incidence and associated risk factors for morbidity and mortality of ectopic pregnancy and treatment modalities reported wrong diagnosis rate of 16.1% of the 93 cases of ectopic pregnancies among first trimester pregnant women in a Nigerian tertiary hospital. Another study undertaken to analyze prostatectomy specimen of patients diagnosed as with prostate cancer reported wrong diagnoses of 9 out of 28 specimens (Onyiaorah, Ukah, Anyiam, Onwukamuche & Efobi, 2016). Similarly, a study reported that 2.8% of the patients aged 60 years and above admitted to non-psychiatric wards of a teaching hospital in Nigeria were wrongly diagnosed for mental disorder (Uwakwe, 2000). In a retrospective study to analysis histology record patients who had a biopsy done between 2008 and 2017, 11.2% of 433 biopsies were wrong diagnosed for cancers (Gbolahan, Lawal & Akinyamoju, 2019).

A retrospective analysis of 100 post-mortem examinations indicated 36.36% rate wrong diagnosis which included 4 cases of missed congenital disorders, 11 cases of missed infections, 8

cases of missed malignancies, 1 case of missed cystic lesion and 1 case of missed head injury. There were two cases misdiagnosed as malignancies, 14 cases of missed infections, 4 cases of cancers wrongly diagnosed, and 6 cases missed complications of hypertension. In additions, physicians did not pick life-threatening case of elective induction of labour which resulted in ruptured uterus with an associated massive intra-abdominal haemorrhage and intrauterine fetal death (Komolafe, Adefidiye, Akinyemi & Ogunrinde, 2018).

Methodology

Study Design and Sampling. This is a hospital-based survey conducted across 10 public secondary hospitals in a State in South West, Nigeria. A sample of 112 physicians were drawn from the population of physicians adopting a proportionate sampling technique to select relative proportional samples of physicians in ten (10) secondary health facilities. At each hospital, convenience sampling was adopted to enroll physicians on duties in five general outpatient departments (GOPDs): obstetrics and gynaecology, oncology, internal medicine, ophthalmology and HIV/AIDS clinics of the hospitals

Research Instrument. Data were collected using the questionnaire. The questionnaire was designed based on an in-depth literature review. The survey instrument consists of 30 items structured into three sections labeled A: demographic information (8) items. The demographic items included participant's age, gender, marital status, qualification, length of practice, professional designation.

Section B elicited information on the level of use of sources of health information such as evidence-based, online-electronic databases, empirical work, search engine and social media platforms. The 17 items on sources of information were measured using a four-point Likert scales (highly used=4, used=3, fairly used=3 and not used=1).

Section C consists of 5 items on the purpose of health information use. These were measured by 4 points Likert scales (always=4, sometimes=3, occasional=3 and rarely=1).

Validity and reliability of the questionnaire In order to ensure the content validity of the questionnaire, two statistician and two a professor on information resource management and a physician reviewed the questionnaire. In addition, the reliability of the questionnaire was ensured through a pilot test with a sample of 30 physicians, and few modifications were made based on the comments from the pretesting. Internal consistency was ensured by calculating Cronbach's alpha coefficient of internal consistency. A value of 0.83 and 0.89 respectively were obtained as Cronbach's alpha coefficient, indicating an acceptable level of internal consistency in the questionnaire.

Data Collection. The questionnaires were administered by the researchers with the assistance of three trained undergraduate students. Participation in the study was voluntary, and informed consent was obtained before the questionnaire was administered. The questionnaire was de-identified and there were no other indicators linking the respondents.

Data Analysis. The data were analyzed using frequencies and percentages, as well as means and standard deviations. Descriptive statistics in frequencies and percentages were calculated for socio-demographics; frequencies, percentages, means and standard deviations were calculated for the sources of information used in clinical practice. Data analysis was done using the IBMSPSS Statistics version 20. A p value of <0.05 was considered statistically significant.

Ethical Approval. Approval was obtained before the questionnaire was administered. The questionnaire was de-identified and there were no other indicators linking the respondents. The questionnaire was distributed to 112 physicians and 107 returned the questionnaire with a response rate of 89%. Ethical approval was obtained from Babcock University Health Research Ethics, Nigerian Institute of Medical Research. Other approvals were obtained from the State Ministry of Health, State Health Service Commission.

Response Rate

Out of the 112 questionnaires distributed to the respondents in ten (10) secondary hospitals, 107 (95.5%) were correctly filled and returned. The significant response and return rate could be credited to the relationship that was established between the researcher and the respondents during questionnaire administration. Also, owing to ethical approvals and official permissions obtained from necessary authorities before commencing the study.

Results

Characteristics (Physicians) Respondent

Physicians ages ranged from 25 to 55 years with a mean age of 26.75 (1.9) years. The peak age was 36-45 years. The majority of the physician 77.5% were between 36 – 55 years of age and 1.9% above 55 years. Sixty of the 107 physicians (56.1%) are male and 43.9% female. Physicians with married status were 80.4%, singles 18.7% and 1.9% have separated from their spouses. Ninety-seven of the 107 physicians (91.7%) had only basic first degree qualification of MBBS, and 10 (9.3%) had fellowship degree. The mean length of service is 11-15 yrs (31.1%). In terms of professional designation, 57.4% are Chief Physicians, 12.1% Senior Medical Officers, 6.5% Medical Officers, 5.6% Senior Registers 5.6% and 9.3% are Consultants.

Research Question 1: What are the health information sources used by Physicians Professionals in public secondary hospitals in Lagos State Nigeria?

Table 1: Sources of Health Information Used by Physicians

Health Information Sources Used	Highly Used Frequency (%)	Fairly Used Frequency (%)	Used Frequency (%)	Not Used Frequency (%)	Mean	Rank
(n=107)						
Consultants	57 (53.3)	32 (29.9)	8 (7.5)	10 (9.3)	3.27	2 nd
Professional Colleague	65 (60.7)	32 (29.9)	8 (7.5)	2 (1.9)	3.50	1 st
Average weighted mean				5.03		
Online Network of clinics and hospitals Experts	4 (3.7)	14 (13.1)	32 (29.9)	57 (53.3)	1.67	17 th
WHO Virtual Biomedical Collection	5 (4.7)	25 (23.4)	34 (31.8)	43 (40.2)	1.93	13 th
Biomedical Databases	11 (10.3)	27 (23.0)	36 (33.6)	33 (30.8)	2.15	9 th
Hospital Information Systems	11 (10.3)	35 (32.7)	19 (17.8)	42 (39.3)	2.14	10 th
Average weighted mean				1.97		
Google Scholar	21 (19.6)	23 (21.5)	26 (24.3)	37 (34.6)	2.26	8 th
Biomedical Dissertations / Thesis	2 (1.9)	24 (22.4)	40 (37.7)	41 (38.3)	1.88	16 th
Biomedical Peer Review Journals	12 (11.2)	33 (25.2)	36 (33.6)	26 (24.3)	2.29	6 th
Average weighted mean				2.14		
Biomedical Books	20 (18.7)	33 (30.8)	15 (14.0)	37 (34.6)	2.34	5 th
Biomedical Reference Materials	19 (17.8)	25 (23.4)	23 (21.5)	38 (35.5)	2.24	7 th
Biomedical Magazines	10 (9.3)	17 (15.9)	32 (29.9)	48 (44.9)	1.90	14 th
Biomedical Newsletters	8 (7.5)	20 (18.7)	29 (27.1)	50 (46.7)	1.87	15 th
Average weighted mean				2.09		
Professional online chat rooms	16 (15.0)	17 (15.9)	23 (21.5)	51 (47.7)	1.98	11 th
Search engines	21 (19.0)	32 (29.9)	27 (25.2)	27 (25.2)	2.44	4 th
Biomedical Blogs	35 (32.7)	26 (24.3)	26 (24.3)	23 (21.5)	2.65	3 rd
Average weighted mean				2.36		

Result presented in Table 1 showed that in clinical diagnosis of patients a significant percentage of physicians' highly use consultant/specialist 52.5% and professional colleagues 60.7%. 53.3% do not use of telemedicine sources (web-based online sessions with human). Also, from Table 1 above, 40.2% of the physicians do not use WHO biomedical virtual collection/archives to support evidence decision making in clinical diagnosis. Biomedical databases are fairly used by

28.0% and are not used by 34.6% of physicians when in doubt of clinical diagnosis of their patients. Biomedical dissertations/thesis are used by 37.7% and not used by 38.3% of the physicians. Hospital Information Systems/electronic medical records are fairly used by 32.7% physicians and not used by 39.3% of them. Biomedical peer review journals are highly used by only 11.2%, fairly used by 25.2% and not used by 24.3% of the physicians.

In addition, Table 1 shows that only 9.3% of physicians highly use biomedical evidence-based sources and 56% fairly use it. Biomedical peer review journals are used regularly by 11.2%, fairly used by 25.2% and used by 33.6%. Google Scholar is highly used by just 19.6%, used by 24.3% and not used by 36.6% of the physicians. Biomedical reference materials are fairly used by 23.4% physicians and not used by 35.5%. Biomedical magazines and newsletters are not used by 44.9% and 46.7% of the physicians. Professional online chat rooms are regularly used by 21.5% of physicians, search engines are fairly used by 29.9%, and 32.7% of the physicians highly use biomedical blogs as their source of health information.

Research Question 2: What is the purpose of health information use among Physicians in public secondary hospitals in Lagos State Nigeria?

Table 2: Purpose of Health Information Use by Physicians

Variables	Always Frequency (%)	Sometimes Frequency (%)	Occasionally Frequency (%)	Rarely Frequency (%)	Mean	SD
Physicians (n=107)						
To improve safety practice	73 (68.2)	21 (19.6)	9 (8.4)	4 (3.7)	3.52	.805
For teaching and training	52 (48.6)	32 (29.9)	10 (9.3)	13 (21.1)	3.15	1.026
For educational pursuit	62 (57.9)	34 (31.8)	4 (3.7)	7 (6.5)	3.41	.846
For continued professional capacity building	67 (62.6)	29 (27.1)	9 (8.4)	2 (1.9)	3.50	.732
For research publication	51 (47.7)	34 (31.8)	6 (5.6)	16 (15.0)	3.12	1.061
Average weighted mean					3.34	
Average weighted SD						0.89

Findings

The result findings as highlighted data in Table 2 indicate that the most preferred and highly used sources of health information by physicians were consultants and professional colleagues with the attainment of the highest average weighted mean 5.03. The result is consistent with some earliest findings reported by several studies from different parts of the world. It also conform to a study in Nigeria which reported physician's reliance on colleagues by 100% (Nwfor-Orizu, Anyaoku, Onwudinjo, 2015). Further findings from this study indicated that electronic and online sources, biomedical databases, hospital information systems, online network of clinics and hospital experts and WHO Virtual collection were fairly used with an average weighted mean of 1.97. This finding is similar to findings of another study which reported low percentages of 20.0% and 13.8% among UK and Canadian physicians and 1.3% of US physicians' use of electronic resources for diagnosis (Melly, Torregrossa, Lee, Jansens and Puskas 2018). Other evidence from this research finding indicated fair use of empirical and evidence-based health information sources, theses/dissertation, and peer review journals, biomedical databases, Google Scholar by physicians with an average weighted mean of 2.14.

The finding is however dissimilar to a study in Tanzania which reported a 100% journal use among physicians (Norbert and Lwoga, 2018) and also in variance with a reported 50.5% thesis/abstract preference among physicians in South East, Nigeria (Melly, Torregrossa, Lee, Jansens and Puskas, 2018) and also not in agreement with a reported 87% of physicians who naturally consult a peer-reviewed journal when in need of information to treat a patient. Furthermore, findings from this study showed fair use of books, reference materials, magazines and newsletters by physicians with an average weighted mean of 2.09; and fair use search engines, professional chart rooms and blogs physicians with an average weighted mean of 2.36. In agreement with this finding, a similar study reported fair use of social media platforms by physicians (Campbell, Evans, Pumper, and Moreno, 2018).

Conclusion

According to the above findings, the study concluded that physicians basically under-use scientific evidence-based biomedical health information sources in making informed clinical decisions. Rather, they depend on their colleagues for support when confronted with uncertainty during clinical diagnosis. This suggests that physicians may not always have adequate scientific, evidenced based information or knowledge to inform clinical diagnostic decisions. This practice may continue to widen the gap between empirical scientific findings and medical practice; also create a wide physician's knowledge gap in contemporary diagnostic and treatment methods or options for quality and safe of patient care. The study therefore concluded that physicians are not adequately motivated to utilize evidence-based scientific health information sources in clinical diagnosis.

Recommendations

Based on the findings of this study, the following recommendations are submitted:

1. Physicians need to be motivated towards making regular use of scientific through workshops to emphasize the importance of evidence-based and informed decision making in ensuring quality and safety of patient care.
2. Hospital management implementation of point-of-care electronic medical records/health information systems and subscribe regularly to online biomedical databases, peer-review e-journals.

Acknowledgments

We also acknowledge Mr. Oba Abdulrasheed and Miss Ugochi Mojolaoluwa for assistance in field work, data collection, entry, cleaning and analysis.

Declaration of interest statement

The authors declare no conflicts of interest. No sponsorship or funding was received for the study.

Word Count: 4384

References

1. Abajebel, S., Jira, C. & Beyene, W. (2011). Utilization of health information system at district level in jimma zone oromia regional state, South west Ethiopia. *Ethiopian Journal of health sciences*, 21(1), 65-76.
2. Adeleke, I. T., Asiru, M. A. Oweghoro, B. M., Jimoh, A. B. & Ndana, A. M. (2015) Computer and Internet Use among Tertiary Healthcare Providers and Trainees in a Nigerian Public Hospital. *American Journal of Health Research*, 3, 1-10.
3. Ali, S. K. M. (2011). Information needs and information seeking behaviour of Libyan Physicians working in Libyan hospitals (Unpublished physician dissertation). Loughborough University. Retrieved from <https://dspace.lboro.ac.uk/2134/8791>.
4. Anker, A.E., Reinhart, A.M., & Feeley, T.H., (2011). Health information seeking: A review of measures and methods. *Patient Education and Counseling*, 82(3), 346-54. Doi: 10.1016/j.pec.2010.12.008.
5. Assem, P. B. & Pabbi, K. A. (2016) "Knowledge sharing among healthcare professionals in Ghana", *VINE Journal of Information and Knowledge Management Systems*, 46 (4), 479-491, <https://doi.org/10.1108/VJKMS-08-2015-0048>

6. Balogh, E.P., Miller, B.T., & Ball, J.R. (2015). *Improving Diagnosis in Health Care*. Washington, DC: National Academies Press, US.
<http://unmhospitalist.pbworks.com/w/file/etch/101052265/21794.pdf>
7. Campbell, L.L., Evans, Y., Pumper, M., & Moreno, M.A. (2016). "Social media use by physicians: a qualitative study of the new frontier of medicine". *BMC Medical Informatics and Decision Making*, 16 (1), 91
8. Chukwuneke, F.N. (2015). Medical incidents in developing countries: A few case studies from Nigeria. *Nigerian Journal of Clinical Practice*, 18 (7), 20-24.
9. Elstein, A.S (1994). What goes around comes around: Return of the hypothetico-deductive strategy. *Teaching and Learning in Medicine*, 6 (2). 121-123.
doi: 10.1080/10401339409539658
10. Elstein, A.S., & Schwarz, A (2002) Clinical problem solving and diagnostic decision making: selective review of the cognitive literature. *British Medical Journal*, 324, 729-732: doi: 10.1136/bmj.324.7339.729
11. Hansen, C. I., & Wood, J. A. (2011). Graduate medical education issues. Retrieved from <http://search.ebscohost.com/login.aspx?direct=true&scope=site&db=nlebk&db=nlabk&AN=380518> Accessed 6/7/2012.
12. Igwegbe, A.O., Eleje, G., & Okpala, B.C. (2013). An appraisal of the management of ectopic pregnancy in a Nigerian tertiary hospital *Annals of Medical and Health Sciences Research*. Doi:10.4103/2141-9248.113655.
13. Komolafe, A.O., Adefidipe, A.A., Akinyemi, H. A.M., & Ogunrinde, O.V. (2018). "Medical Errors Detected at the Autopsy: A Prelude to Avoiding Malpractice Litigations". *Journal of Advances in Medicine and Medical Research*, 27(7), 1-8.
<https://doi.org/10.9734/JAMMR/2018/43384>
14. Lighthall, G.K., & Vazquez-Guillamet, C (2015). "Understanding Decision Making in Critical Care". *Clinical Medical Research*, 13 (3-4), 156–168.
doi: 10.3121/cmr.2015.1289
15. Moja, L. & Kwag, K. H. (2015). Point of care health information services: a platform for self-directed continuing medical education for front line decision makers. *Postgrad Med J*; 91, 83–91. Doi:10.1136/postgradmedj-2014-132965
16. Melly, L., Torregrossa, G., Timothy Lee, Jansens, J., & Puskas, J.D. (2018) "Fifty years of coronary artery bypass grafting". *Journal of Thoracic Disease*, 10 (3), 1960-1967.
doi: 10.21037/jtd.2018.02.43

17. Norbert, L.G., & Lwoga, E.T. (2013). "Information seeking behaviour of physicians in Tanzania" *Information Development*, (29) 2, 172-182.
18. Nwfor-Orizu, O. E., Anyaoku, E.N., & Onwudinjo, O.T. (2015) "Where Doctors Read Health Information Resources and Their Information Resources Media Preferences" *Journal of information and Knowledge Management*, 6 (12), 117-126
19. Gbolahan, O.O., Lawal, A.O., Akinyamoju, C.A. (2019). Clinical and histological diagnosis of oral pathologic lesions, any concordance?" *African Journal of Oral Health*, 8(2)
20. Onyiaorah, I.V., Ukah, C.O., Anyiam, D.C., Onwukamuche, M.E., & Efobi, C.C. (2015). Accuracy of clinical diagnosis of prostate cancer: Implications for patients' management. *Trop J Med Res*, 18(2), 61-67
21. Shabi, I. N., Shabi, O. M., Akewukereke, M. A. & Udofia, E. P. (2011). Physicians' utilization of internet medical databases at the tertiary health institutions in Osun State, south-west, Nigeria. *Health Information and Libraries Journal*, 28(4), 313-320.
22. Shaneyfelt, T.M. (2001). Building bridges to quality. *JAMA*; 286(20), 2600–01
23. Uwakwe, R. (2000). Psychiatric morbidity in elderly patients admitted to non-psychiatric wards in a general/teaching hospital in Nigeria. *International Journal of Geriatric Psychiatry*, 15 (4), 2-9