ISSN 2643-6388

IJCSS

INTERNATIONAL JOURNAL OF COMMUNICATION & SOCIAL SCIENCES

VOLUME 1 NO. 2

PUBLISHED BY THE DEAN OF GRADUATE SCHOOL
BOWIE STATE UNIVERSITY, BOWIE, MD, USA
in collaboration with
THE DEPARTMENT OF MASS COMMUNICATION
GODFREY OKOYE UNIVERSITY, ENUGU, NIGERIA

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AWARENESS AND USAGE OF INTERNET-BASED HEALTH INFORMATION FOR SELF CARE AMONG UNDERGRADUATE STUDENTS IN ENUGU: IMPLICATIONS FOR HEALTHCARE IMPROVEMENT

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ABSTRACT

Governments and stakeholders across the continent are tirelessly researching new and innovative ways of ensuring that basic health care is available to all at the fastest and most affordable way. Some of these innovations capture the introduction of the ICT and Telemedicine in the health care sector given its availability and affordability. The objectives of this study are to examine the extent of Internet usage among students for health purposes, to determine the means through which students use the Internet for health purposes, to determine whether the availability and accessibility of the Internet influence users' use of ICT for health purposes, to ascertain users' reasons for the use of the Internet for health purposes and to examine the perceived outcomes of using the Internet for health purposes. The study is anchored on Technology acceptance theory. It found among other things that undergraduate students' use of internet for health related purposes is high with a total of 305 (97%) out of 315 questionnaire distributed. Furthermore, it concluded and recommended that government and stakeholders should

tap into the potentials of the internet as a medium of healthcare delivery to help improve healthcare in Nigeria.

Keywords: Self-care, Internet-based health information, Telemedicine, Information and communication Technology

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INTRODUCTION

The advent of information and communication technologies influenced every sector of life, ranging from the banking sector, educational sector and most importantly, the health care sector. In Nigeria, there has been a steady increase in the number of people that have access to the Internet. According to the latest report of Internet World Stats, cited in Oyelami, Okuboyejo and Ebiye, (2016), Nigeria has joined the top 20 Internet users in the world and is the first in Africa. It has been observed that the Internet has become an imperative tool for disseminating health information (Vance, Howe and Dellavalle 2009). As a result, the Medical Library Association (MLA) based in the United States of America has recommended some websites consumers can visit to access useful health information (MLA 2012).

Internet-based health information has the capability to appeal to consumers with different learning styles (Richards, Coleman and Hollingsworth, 1998). It combines the expansive reach merits of mass communication channels with the persuasion features of interpersonal channels by giving room for feedbacks between the message sender and receiver (Cassell, Jackson and Cheuvront, 1998). It has been recommended that the Internet has greater ability than other mass media to apply principles of health behaviour. Consumers can also access health information in the privacy of their homes at convenient times on the Internet. Consumers want information about prevention, both for self-care and to participate in a more informed way in their healthcare (Yuri et al, 2001). People with the greatest health risks often have had the least access to healthcare, social services, health information, and communication technologies (Kreps, 2006).

Nigeria has an estimated population of one hundred and eighty (180) million people and the ratio of doctors to the population is about 1 to 4,444 (Ogunrin, Ogunrin and Akerele, 2007). The density of physicians per 10, 000 population is four (4), that of dentistry is .5, 16 for nurses and midwives, and 1 for pharmaceutical personnel (Ogunrin, Ogunrin and Akerele, 2007). According to the World Health Organization (WHO) (2010) report, in Nigeria, current life expectancy is 49 years. People die of minor illnesses that could have been prevented with simple medications and healthy lifestyles (Acho, 2005). The situation however, can be different if the populace are aware of the availability of health information on the Internet and take advantage of it.

In an attempt to address some of these challenges, it will be prudent for stakeholders to consider finding alternative means of addressing the basic health needs of its citizens. One of the many approaches to address the challenge is through

empowering the people to take care of their health, by making health information accessible to all on a platform which can be reached by people irrespective of location, gender, age, etc., and that can be through the Internet. Also, the people can be sensitized through various health awareness programs created by the Government and stakeholders in order to help curb the situation. Currently, more people in Africa have access to the Internet today than as to having access to clean water, or even good sanitation (Lazuta, 2013). This may be due to the influx of giant telecommunication companies on the African markets with lots of enticing packages including Internet access. The availability of Internet across the country can be capitalized upon by students who have access to smart phones or other devices for accessing the Internet in their respective institutions, for health purposes.

STATEMENT OF PROBLEM

Governments and stakeholders across the continent are tirelessly searching new and innovative ways of ensuring that basic health care is available to all at the fastest and most affordable way. Some of these innovations capture the introduction of the ICT in the health care sector, due to its ability to serve as a medium in addressing the health issues of its users irrespective of users' location, provided there is Internet access available. Although anecdotal evidence suggests that recent advancements and infiltrations of ICT have resulted in the use of the Internet for health purposes in Sub-Saharan Africa, few studies have examined these developments.

The extant literature on the use of the Internet for health purposes is overwhelmingly dominated by studies conducted in developed or western countries (see Andreassen et al., 2007; Santana et al., 2011; Kummervold & Wynn, 2012; Vambheim et al., 2014). While some studies have been conducted on Internet use, among other Sub-Saharan African countries (see Awoleye, Oladipo, & Siyanbola, 2008; Batane, 2013; Oyeyemi et al., 2014), the study by Oyelami, Okuboyejo and Ebiye (2013) appeared to be among the few studies that has examined this topical issue in Nigeria. They also limited their study to the whole of Lagos with no specific reference to age, educational background and so on.

For this reason, it is not clear how tertiary students, who presumably have technologies (mobile phones, desktop computers, laptops, and tablets) to access the Internet, use it for health purposes. The current study, therefore, seeks to contribute to the literature by examining the use of the Internet for health purposes among tertiary students in Enugu. It is hoped that this study will add to the ways in which the Internet can contribute to the country's health care delivery approach, using students at the Godfrey Okoye University.

OBJECTIVE OF THE STUDY

To examine the extent of Internet usage among students for health purposes.
To determine the means through which students use the Internet for health purposes.

To determine whether the availability and accessibility of the Internet influence users' for the use for health purposes.

To ascertain users' reasons for the use of the Internet for health purposes.
To examine the perceived outcomes of using the Internet for health purposes.

RESEARCH QUESTIONS

1. How often do the students use the Internet for health purposes?
2. By what means do students access the Internet for health purposes?
3. Does the availability and accessibility to the Internet influence users' use for health purposes.
4. What are the students' reasons for the use of the Internet for health purposes?
5. What are the perceived outcomes of using the Internet for health purposes?

SIGNIFICANCE OF STUDY

By understanding the usability of the internet among undergraduate students in the selected University, ICT developers and health care providers in Nigeria will come up with new Innovative ways of empowering people to take proper care of their health, thereby increasing basic health care accessibility across the country. It will also serve as a framework on which health experts, researchers, and other health managers can develop strategic policies in addressing the health needs of students. Furthermore, it can serve as a reference material or source of information to all stakeholders in the health sector of Nigeria. It would also serve as an information resource to various international stakeholders in health, including the World Health Organization (W.H.O) as well as contribute to the existing knowledge already in the field.

THEORETICAL FRAMEWORK

This study is anchored on the Technology Acceptance Model (TAM) propounded by Davis in 1986. The Technology Acceptance Model is a theory modelled from the Theory of Reasoned Action (TRA) and argued to be one of the accepted models when it comes to technology acceptance and use (Park, 2009). The theory states that peoples' decision to use a piece of technology is influenced by their intentions to use the technology, which eventually influence the actual use. Relating this theory to the study, peoples thirst for health information is the driving force towards their acceptance and usage of internet technology for health information purposes.

THE REVIEW

INTERNET — AN OVERVIEW

The insurgence of Telemedicine, Telehealth, eHealth, Mobile Health, etc., has come to stay and contributed in making sure that life becomes easier for all across the world, by facilitating the provision of health services through the use of telecommunication devices and the Internet. The internet as a tool is gaining dominance in all facets of human lives. This can be attributed to the fact that the Internet provides people with

the opportunity to seek for a wide range of information on relevant issues, including health related issues and services. The Internet first came to light in the early part of the 1960s. It was basically used by the United States Department of Defense in facilitating its military operations. However, it was later commercialized and widely accepted as evidenced by the rapid use of the Internet, which can be traced back to the "information revolution of unprecedented magnitude" (Jadad & Gaghari, 1998, p. 611). This movement gained roots in the era of widespread use of Personal Computers (PC); and Internet use "exploded" in the fall of 1994 Before the commercialization of the Internet, magazines, newspaper, books and information offered by health professionals and loved ones, served as sources of health information for people in need (Kummervold & Wynn, 2012). Although these sources of information still exist today and remains important, it has been acknowledged that the Internet has been embraced and rapidly becoming the central source of Health information across the globe (Andreassen et al., 2007). Therefore, it is not uncommon for people in Western and Sub-Saharan African countries, to consult the Internet on health related issues (Borzekowski, Fobil, & Asante, 2006).

USE OF THE INTERNET FOR HEALTH PURPOSES

The internet is a tool considered by many to facilitate the accessibility of some health services that hitherto would have required one to be present in a health facility, in the comfort of users home. According to Harrison, Barlow and Williams (2007), the Internet serves as a rich source of health information, hence, considered the largest online medical library with more than 100,000 health-related websites. Notably, It does not only functions as a rich source of health information, but also, facilitate interactivity between professionals and health seekers through an electronic or communication tools to gain and relay health information (Cline and Haynes, 2001), which Fox and Raine (2000) believe, influences the health decisions and improves the self-care of users. Street (2003) also cemented the assertions of Fox and Raine (2000), by adding that using the Internet has the potential to empower users and stimulate them to participate in their own health care. It may also offer support for interpersonal and social interaction, and it can offer tailored information and anonymity (Cline and Haynes, 2001; Rice and Katz, 2001, Gabarron et al., 2012; Gabarron et al., 2014).

Furthermore, it is assumed that using the internet, helps users' make important health care decisions by connecting with other users who have access to health information, and interacting with health professionals and social support groups (Boase et al., 2006). The interactive features of the Internet include; emailing, chatting, and discussion forums. These features provide users with the opportunity to engage in activities such as, leave their health-related questions and establish contact with others, exchanging and sharing experiences about a disease, and making inquiries from best physicians available in the field to address their health issues (Hale et al., 2010). Using the Internet for health purposes has no discrimination. Both the rich and the poor, old and young are entitled to use it, provided they can access the Internet. According to Fox and Duggan (2013), one-third of all adults have engaged in the use of the Internet for diagnosing a medical condition. Furthermore, one-third of Internet users also access

blogs, online newsgroups, and web sites regarding the medical experiences of others when they get access to the Internet (Fox, 2011). Some users with chronic diseases such as hypertension or diabetes are also able to take part in online patient support groups, where they share experiences and treatment options, establish contacts with physicians and other patients, and obtain meticulous information regarding their conditions (Fox, 2011).

The use of social media via the Internet is another wave that is propelling the health industry towards a new paradigm shift. The Social media is a form of electronic communication intended to create online communities where the users share information, ideas, personal messages, and other content. Brockman, Christakis and Moreno (2014), argue that some users also use social networking platforms such as Facebook, Twitter and WhatsApp, as a place for making health research. Social media are also considered as easy to use, access and exchange important information, hence, extensively being used in medicine. Currently, health information, that is available through the social media platform are now being used as reference guides for sensitive health issues by non-medical professionals, physicians, and students in Health (Denecke and Nejdl, 2009). However, the use of social media for health purposes, has the potential of breaking or eliminating barriers or distinctions between health professionals and non-professionals, patient relations and medical ethics when patronized and used by students and health professionals.

Mansfield et al., (2011) even reported that Physicians are also increasingly using social media, both professionally and in their daily lives. A study by Chretien, Azar, and Kind, (2011), also revealed that 48% of physicians on Twitter have posted links to their blogs. Some doctors with the passion of reaching out to patients via the Internet have also created an all-inclusive wikis, web pages and platforms, such as AskDrWiki.com where patients can receive information about various diseases and pose questions to specialists (Denecke and Nejdl, 2009). It has also been acknowledged that some physicians use social media to exchange information about professional problems and clinical experiences.

Without the Internet, it will be very difficult to carry out all the enumerated communication based health activities above, through other media forms such as newspapers, radio, or television. Using the Internet for health purposes can be said to have both advantages and disadvantages. The advantages as above cannot totally overshadow the disadvantages associated with using the Internet. In considering some of the disadvantages of the Internet like any other technology include; high costs (for many potential users), the need for skills and knowledge in accessing and using the Internet, technical language that might be difficult to understand for many, and uneven access (Cline and Haynes, 2001; Rice and Katz 2001). Additionally, the use of the Internet can also pose users with some obstacles such as overload, disorganization, complex searching commands, medical language (terminologies). Also, Internet use can pose as a danger to users due to the lack of peer review, erroneous or disingenuous information, risk-promoting messages and Internet addiction (Cline and Haynes, 2001; Rice and Katz, 2001).

In order to address some of these obstacles and dangers associated with the use of the Internet; it may require special knowledge in computing and the use of the Internet.

Regardless of these challenges, Lemire, et al. (2008) argue that the public's involvement in managing their own health through the Internet keeps growing and has become a strategic issue in the field of health. This shift in the public's desire is a positive one and may be attributed to different factors, such as changing knowledge, attitudes, technologies, the availability of Internet access, and approaches to care (Williams, 2002).

METHODOLOGY

The study adopted the Survey Research method of Study. According to Owuamalam (2012), survey enables the researcher to deal with the characteristics of the chosen set of people whose opinion, behaviour and attitudes are essential for the collection of information required by the study.

POPULATION OF STUDY

The population of study is 1,500 students drawn from 4 Faculties within Godfrey Okoye University. This is arrived through;

Faculty of Management and Social Sciences	- 700
Faculty of Arts	- 200
Faculty of Basic Natural Sciences	- 450
Faculty of Environmental	- 150

Source: Admissions Unit (2018)

SAMPLE SIZE

The sample size was determined using the Taro Yamani, thus;

$$S = \frac{N}{1+N(e)^2}$$

$$\frac{1500}{1+1500*0.0025}$$

$$\frac{1500}{1+3.7}$$

$$=315.$$

SAMPLING TECHNIQUE

The multi-stage sampling technique will be used. The sample was categorized into smaller units at each stage faculty by faculty.

DESCRIPTION OF RESEARCH INSTRUMENT

The questionnaire was the main instrument for data collection. It consists of two sections, with the first section containing information about the respondents, while the second section addresses the research questions.

VALIDITY

A pre-testing was done with a class of 17 students to determine if the respondents understood clearly the questions in the questionnaire before being sent out.

FINDINGS

Research question one: how often do the students use the internet for health purposes?

To find the answer to this question, item No. 2i, 2ii, 3i, 3ii, 3iii on the questionnaire (Have you used the Internet before? How many times in the last 7 days? How often do you use the Internet to interact with health professionals they had met face to face, participate in forum or self groups (focusing on health and illness), read about health and illness?) proved helpful.

From the data gathered, all 305 questionnaires returned (the remaining 10 wasn't returned as at the time of compilation) acknowledged using the internet before 295 (93%) respondents had used it once in the last 7 days, and, 293 (92.7%) had used it three or more times.

More so, 187 (59%) out of the 305 respondents indicated that they had used the Internet to interact with health professionals face to face whilst the remaining 128 (41%) respondents stated otherwise. Out of the 187 respondents who had interacted with health professionals on the Internet, 19 acknowledged having done so on a weekly basis, 59, monthly and 218 less often.

On the question of participating in forum or self-help groups (focusing on health and illness), 12 (4 %) out of the 305 respondents indicated that they had never used the Internet in that regard. However, the remaining 293 (92%) respondents acknowledged using the Internet to participate in forums or self-help groups. 14 had done so weekly, 53 monthly, and 82 less often.

On the subject of reading about health and illness, 297 (96.3% respondents stated that they had used the Internet for that purpose whilst the remaining 5 (1.4%) indicated otherwise. The usage was as follows; 228 (weekly), 63 (monthly), 67 (less often).

Research Question Two: By what means do the students access the Internet for health purposes?

In order to answer the above question, item 2iii on the questionnaire was used to generate the needed response. The majority of the respondents 305 (100%) had used smart phones in accessing the Internet for health purposes. This was followed by the use of laptops (69, 19%), tablets (41, 11.3%), and desktop computers (6, 1.7%).

Research Question Three: Does the availability and accessibility to the Internet influence users' use for health purposes?

In order to answer the above question, items 2v, 2vi, and 3i, 3ii, 3ii in the questionnaire were used. The data showed that nearly all the respondents 305 (100%) owned one or more devices (Smartphone, laptop, tablet or desktop computer) by which they could access the Internet. 269 (74.1%) of the 305 had access to the Internet in their hostels.

Research Question Four: What are the students' reasons for the use of the Internet for health purposes?

To answer this very research question, items 4i, 4ii and 4iii from the questionnaire were used. From the collected data, 289 respondents claimed to have used the Internet to purposely find information that can help them decide whether to consult a health professional. 38 respondents stated they were using it always, 125 Often, and 176 Sometimes. However, 24 respondents claimed Never to have done so.

In another item, 253 (82.8%) out of the 363 respondents indicated that they had used the Internet to find health information prior to an appointment. Also, 259 out of 305 respondents acknowledged using the Internet to purposely search for health information after an appointment with their health professional. 70 respondents indicated using it Always, 114 Often and 129 Sometimes.

Research Question Five: What are the perceived outcomes of using the Internet for health purposes?

To address this question, items 6i to 6vi, and 7i to 7iv in the questionnaire were used. I asked the students how they had reacted after having used the Internet for health purposes. 102 (28.1%) students had made, changed or cancelled an appointment with their doctor, while 261 (71.9%) had not. 168 (46.3%) had discussed the information with their doctor, while 195 (53.7%) had not.

FURTHER DISCUSSIONS

From the findings, the use of the Internet for Health purposes among students at the Godfrey Okoye University is impressive with a total of 305 returned questionnaires out of 315 stating that they have used the internet for health purpose. It even revealed a 100% response rate. The respondents also acknowledged that they had used the

Internet for health purposes. The majority of the respondents, 293 (80.7%) stated that they had used the Internet for such purposes 3 to 4 times in a week.

The study revealed that all the respondents 305 (100%) owned electronic devices such as Desktop computers, laptops, iPads and smart phones, which they used in accessing the Internet for health purposes.

On the issue of availability and accessibility to the Internet, all 305 respondents stated that they access to the Internet. The Internet could be beneficial to users in three primary ways, with respect to their health needs; searching for health information directly online, participating in support groups and consulting with health professionals.

187 (59%) out of the 305 respondents indicated that they had used the Internet to interact with health professionals face to face whilst the remaining 128 (41%) respondents stated otherwise. Out of the 187 respondents who had interacted with health professionals on the Internet, 19 acknowledged having done so on a weekly basis, 59, monthly and 218, more seldom.

SUMMARY AND CONCLUSION

Meeting the basic health services has been an uphill task for governments. However, certain factors are serving as obstacles to achieving this goal. They include the limited number of health professionals to citizen ratio, misappropriation of funds and brain drain (migration of health professionals to Developed countries). The aim of this study was therefore to assess the use of the Internet for health purposes among university students specifically Godfrey Okoye University and suggest probable alternatives to addressing this problem.

This study explored and addressed the possible use of the Internet in providing basic health services to Internet users in the country using students (305). The findings revealed that all the 305 students who took part in the study at the university were using the Internet for health purposes. Also, these students owned 2 or more sophisticated devices such as Laptops, Smartphone and iPads which were being used to access the Internet.

Another revelation from my findings was the fact that the majority of the users had also used the Internet to interact with health professionals through social media platforms such as WhatsApp and Facebook. Considering the fact that there are a limited number of health professionals to patient ratio, the findings from this study is suggestive that the Internet could be exploited as an alternative in providing basic health services to users in the country.

RECOMMENDATION

From the findings, it has been deduced that the social media platform could be explored as a health promotion channel by experts in providing some basic health services not just to students, but to other members of the society.

Furthermore, policy makers and IT programmers could also utilize the findings in this study to harness the use of this platform to create health awareness programs that will target users and help solve the healthcare challenges in our society.

It is also important that more studies are carried out to explore the use of the Internet for health purpose among other age groups and educational level in the society in order to draw a comparison.

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