

Online Health Information Seeking Pattern Among Undergraduates in a Nigerian University

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Abstract

Based on a cross-sectional design, this study investigates online health seeking and its possible influence on decision making among 400 university undergraduates in Nigeria. From the results, it was found that daily Internet use was on the average (33.7%), and use was constrained by the poor power supply, the high cost of the Internet access, and poor delivery of services. Health information sought covers nutrition, fitness/exercise, HIV/AIDS, malaria, sore throat, mental health, menstrual pain, and sexual/reproductive health. The majority (72.7%) who perceived available health information as accurate and dependable had an opportunity to seek similar information on their health conditions from different online sources. A high proportion (202) claimed that they consulted a physician after that, just a few (54) of the respondents consulted a traditional healer, and a few others relied on self-medication (10%) or asked friends for suggestions (11%). Thus, there is a need to provide reliable Internet connection and enlighten the Nigerian youth on criteria for assessing quality online health information.

Keywords

Internet, health, information, health information, students, university, Nigeria

Introduction

The Internet is revolutionizing interpersonal relations with the availability and growing acceptance of online social networks. These networks provide rich and versatile platforms for diverse interactions and sharing of information (Antoci, Sabatini, & Sodini, 2013; Montesano, 2013). Youth from different cultures subscribe and access all sorts of information from these platforms. Through this process of networking and information sharing, knowledge is developed and possibly deployed as individuals or group members may deem fit. These include acquiring and sharing of information on health and other topical issues. The speed at which information spread and the possible implications for individuals and society are overwhelming. As such, some countries have called for censoring and restricted access, and some have argued in favor of unrestricted access (Warf, 2011). To the latter group, unlimited Internet access is indispensable for information dissemination as it has the potential of promoting the health and well-being of different social groups, especially the youth.

In terms of disease burden, young people are among the most affected by the various social categories. A possible implication is a need for self-care practices and searches for health information, especially on socially stigmatizing conditions, like sexual and mental health problems. This possibility may become complicated by an established culture of

self-medication and poor health systems performance. Over the decades, efforts have been made to address the poor health performance as well as discourage self-medication as a healthy practice. Despite these efforts, marginal achievements have been obtained, thereby calling for more attention and understanding. Self-care practices (ability to purchase prescribed drugs without a prescription sheet from a qualified physician) are widespread among undergraduates in Nigeria (Fadare & Tamuno, 2011; Osemene & Lamikanra, 2012). Against this backdrop, the possibility of abusing some drugs remains high as shown in the abuse of antibiotics (Fadare & Tamuno, 2011; Famuyiwa, Aina, & Bankole-Oki, 2011). Thus, this article investigates online health seeking and its possible influence on decision making among Nigerian undergraduates.

With the challenges of regulating and maintaining prompt access to quality and trustworthy health information, there is a need to focus on the implications of this development in health care service delivery and consumption among young

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people (Cline & Haynes, 2001; Minichiello, Rahman, Dune, Scott, & Dowsett, 2013; Murero & Rice, 2013; Siliquini et al., 2011). Similarly, improved access to health information could also prompt help seeking from informal sources and self-medication, depending on context and nature of health or disease conditions. As a result, studies on where individuals get health information and whether they use online resources have become a major research focus in recent times (Percheski & Hargittai, 2010). Nonetheless, Kam, Stanszus, Cheah, Heerasing, and Yi Tie (2010) noted that studies with a primary emphasis on the use of Internet by university students as a source of health information are not common. Hence, exploring the utilization of the Internet by this unique group is important. Young people represent the most active Internet users among all ages who are using the platform daily for information seeking and communication (Kim, Park, & Bozeman, 2011; Singh & Brown, 2014).

Nigeria, the most populous African country, has a teeming population of young people who are mobile phone users, with increasing access to the Internet (Stork, Calandro, & Gillwald, 2013). The Internet access and usage in Nigeria are on the rise with the advent of telecommunication companies providing wider access through mobile phones (Kadiri & Alabi, 2014). With this development comes higher exposure to different kinds of information, including those relating to health and disease conditions (Amaugo, Papadopoulos, Ochieng, & Ali, 2014). This article proceeds with a focus on the relevant literature on online health seeking among youth. The context through which empirical evidence was generated came next and was followed by a presentation of the results. The discussion of the findings in relation to existing knowledge on online health seeking was followed with the conclusion.

Youth and the Use of the Internet for Health Information

Online health information seeking has its benefits and shortcomings. Parts of the benefits include timeliness and a broad range of information on specific and different health and disease conditions. Through this process, health information becomes readily available in a way that patients' knowledge becomes widened and relevant for more participation in therapeutic relationships (Sillence, Briggs, Harris, & Fishwick, 2007). It could also promote the making of more informed decisions and compliance with medications. However, online access to health information also raises debates about the quality, trustworthiness, and applicability of the enormous volume of health information among different social categories (Cline & Haynes, 2001).

Esoffery et al. (2005) in a study among college students in the United States showed that the use of the Internet among students is rising. Specifically, the study showed that more than 70% of the respondents had used online health information, and more than 40% reported using it frequently.

This increase is similar to Kitikannakorn and Sitthiworanan's (2009) findings among students in Thailand. In both studies, about 70% of the students with access to online health information sought information on general health, disease treatment, and nutrition. Reasons for using the Internet include easy access and availability of updated information. Youth's involvement and active consumption of online health information also reflected in Horgan and Sweeney's (2012) findings in Ireland. The Horgan and Sweeney's (2012) study showed that more than 66% of the students use the Internet to search for health information on a specific illness, social health fitness, and nutrition information. Shaikh, Shaikh, Kamal, and Masood (2008) also indicated that 43.4% of the students in Islamabad used the Internet for seeking health information. In contrast, a survey in India by Birpreet, Singh, and Kumar (2011) indicates a low (14%) usage of the platform for health information, despite the number of students using the platform for other things. Infrastructural developments, availability of quality Internet access, and ownership of the computer or mobile phones with the Internet access accounted for significant variations in terms of access. This is vital to improving Internet access, especially among rural dwellers. Beyond the structural constraints and benefits, the quality of health information, adequacy, and trustworthiness remains paramount to the information seeker and the society.

The quality of health information provided through the Internet has emerged as a major issue, especially with the growing rate of utilizing this platform for firsthand and snappy information (Scott, Gilmour, & Fielden, 2008). This, according to Birpreet et al. (2011), led to the evolution of the Internet Healthcare Coalition (IHC), a group of private and not-for-profit organizations regulating health care sites and services on the Internet. Thus, there is a need for more studies on perceived usefulness and trustworthiness of the quality and quantity of health information that is accessible to the youth, in particular, who are early adopters of new things, including health information.

Available evidence indicates that access to the Internet is increasing among tertiary institution students in Nigeria (Ajuwon, 2015), Ghana (Owusu-Acheaw & Larson, 2015), and South Africa (Oyedemi, 2012); yet, few studies have examined online health seeking patterns among this category of young people (Marful & Winter, 2015). In Nigeria, a few exceptions of studies with similar focus exist (Ajuwon, 2003; Nwagwu, 2007; Stork et al., 2013). Nonetheless, these studies did not focus on the patterns, quality, perceived trustworthiness, and utilization of online health information in making health-related decisions.

Hence, this study investigates the use of the Internet among undergraduates in a Nigerian University. Particular focus is on the use of the Internet as a source of health information, the type of health information sought, and their perceptions of the quality of online health information. Online health seeking is becoming widespread among young people

Table 1. The Population for the Study.

Faculties	Undergraduate enrollment
Arts	1,816
Science	2,334
Law	578
Social sciences	1,464
Agriculture and forestry	1,361
Technology	1,328
Education	1,710
Veterinary medicine	445
Total	11,036

Source. University of Ibadan (2012).

in particular. This may have serious implications for well-being and health outcomes, especially in social contexts where health system performance is poor and self-medication is common. It is envisaged that this study would be valuable in the development of online health information interventions that may better reach this group, as well as address prevailing health information needs or challenges among young people in Nigeria.

Method

With the use of a cross-sectional research design, the study concentrated on undergraduate students at the University of Ibadan, the premier university in Nigeria. Cross-sectional design is useful in investigating online health information seeking among students (Nwagwu, 2007). Attention was purposively focused on recruiting male and female undergraduates from cognate faculties. These were faculties where students were exposed to courses with little or inadequate information on health-related matters. The eight faculties were arts, sciences, law, the social sciences, education, agriculture and forestry, technology, and veterinary medicine (see Table 1 for details). The faculties excluded were public health, pharmacy, clinical sciences, dentistry, and basic medical sciences. Students from these colleges were deemed more knowledgeable about health-related issues than those in the other faculties included in this study.

Recruitment of survey participants involved word of mouth and posting of handbills and posters in conspicuous locations and lecture theaters within the eight targeted faculties. The handbills and posters contained information on the study objectives and contact details of the lead author. Also, eight field-workers with relevant experience on the social survey were trained with the research instrument for data collection. The field-workers were undergraduates in the targeted faculties, and they informed eligible study participants about the research and the voluntariness of participation.

The available statistics on student population showed that there were 11,036 undergraduate students in the eight

faculties (University of Ibadan, 2012). With the aim of focusing on undergraduates with limited knowledge of health-related matters, a nonprobability sampling technique was adopted in the selection of 400 respondents. An average of 50 students was recruited from the eight faculties. The purposive selection of the respondents helped in targeting a category of respondents from the sampling frame. Nonprobability sampling approaches are compatible with cross-sectional designs. In similar study populations, such sampling approach has produced useful results from studies investigating health behaviors among undergraduates (Iliyasu, Galadanci, Abubakar, Ismail, & Aliyu, 2012; Imaledo, Peter-Kio, & Asuquo, 2013; Oppong & Oti-Boadi, 2013).

The data collection period was from January to March 2014. Voluntary participation of all respondents was sought through verbal consent and filling of informed consent forms. All the students were briefed on nature and purpose of the study, and were encouraged to ask questions before participation. Only those who were willing to participate and gave their verbal and written consent were given copies of the questionnaire. Adequate time was taken to explain to the respondents their right to withdraw from the study, and that the result of the study had no personal implications.

Data Collection

The survey instrument used in eliciting information from students was anonymous, and it included detailed questions about respondents' demographic characteristics, use of the Internet, frequency of use of the platform, type of health information sought, their assessment of online health information, and decisions taken after accessing health information online. The survey questions were based on evidence from the literature and cues from previous studies that have examined online health information seeking (Leung, 2008; Yan, 2010). All the questions were close ended. The respondents were asked to specify the frequency of use, quality of health information sourced from the Internet, and the perceived trustworthiness of the information, using a 4-point scale with, 1 = *unreliable*, 2 = *fairly reliable*, 3 = *very reliable*, and 4 = *accurate*.

To ascertain the validity of the questionnaire, it was given to experts in demography and statistics at the University of Ibadan to review. Feedbacks from the reviewers were used to improve the draft questionnaire. The questionnaire was also pretested at another tertiary institution (the Polytechnic of Ibadan, Oyo State, Nigeria) among 30 students. Based on the findings from the pretest, some questions in the instrument were adjusted to make them easy to complete. Using Cronbach's alpha, a reliability coefficient was calculated for the questionnaire, and a value of .71 was obtained. A total of 500 copies of the questionnaire were self-administered. However, only 400 were found valid for the analysis. This represents a response rate of 80%.

Table 2. Characteristics of the Respondents (*N* = 400).

Variables	Frequency	%
Age		
17-20	129	32.3
21-23	132	33.0
24-26	76	19.0
27	63	15.8
Level		
100	90	22.5
200	127	31.5
300	96	24.0
400	45	11.3
500	42	10.5
Gender		
Female	207	51.7
Male	193	48.3
Frequency of Internet use		
Daily basis	103	25.7
Up to 5 days in a week	68	17.0
Once or twice in a week	82	20.5
Less than 5 times in a month	42	10.5
Never	5	1.3
Total	306	100

M age = 21.9 years. *SD* = 11.51

Data Analysis

The quantitative data were analyzed using SPSS for Windows Version 17.0. Descriptive statistics, such as frequency counts, percentages, mean, and standard deviation, were used to analyze the demographic details of the respondents. Using chi-square, the bivariate analysis was focused on gender differentials in terms of access to online health information, the frequency of its use, perceived trustworthiness, and decisions made about online health information.

Ethical Consideration

Voluntary participation of all respondents was sought through verbal consent. All the students were briefed on nature and purpose of the study, and were encouraged to ask questions before participation. Only voluntary respondents who gave both written and verbal consent were given the questionnaire. Adequate time was also taken to explain to the respondents their right to withdraw from the study, and that the result of the study had no personal implications.

Results

The age range of the 400 respondents was between 17 and 27 years. The average age of the respondents was 21.9 years. Table 2 reveals that majority of the students were between age 17 and 23 years. Less than 16% were above 27 years. The predominant group among the respondents was the

second-year students (31.5%), and the least represented were those in their final year (10.5%). A similar proportion of males (48.8%) and females (51.7%) participated in the study. The frequency of Internet use on a daily basis was on the average (25.7%) when compared with those who access the Internet for health-related information on a weekly basis (22.2%) (see Table 2).

The frequency of the Internet use and volume of data accessed per time depend on some factors. These include structural factors, such as access to the computer system at school or at home, availability of high-speed Internet Service Providers, and affordability of the available services among different social categories of students. With the relatively low frequency of daily Internet access among the respondents (as shown in Table 2), it was important to observe further how sources of access influence the frequency of the Internet use within the study population (see Table 3). Ownership of a computer system or mobile phone with the Internet access is an important determinant of the frequency of use and the proportion of the time individuals allocate to online information seeking. Among the respondents, 39.8% claim having accessed the Internet in cybercafes. More than 50% of the respondents accessed the Internet through a personal computer (37%) and mobile phones (16.5%). Access to the Internet through school was low, as only 6.8% (27) used their school computer laboratory to access the platform.

Table 4 contains a summary of reported constraints to Internet access. A probe into some of the prevailing constraints to frequent Internet access showed that 42% of the respondents perceived the cost of the Internet access as a major constraint. This was followed by epileptic power (33%).

Furthermore, with the financial constraints on the Internet access to the respondents, we probed further to understand the implications regarding the volume of data accessible per time. This is important for young people who would like to engage in online activities, including seeking health-related information. As contained in Table 5, more than 50% of the respondents reported a bill of more than 1,000 Naira, an average of US\$6.5 to access data plan of about 200 megabits on a mobile phone or personal computer system. Accessing the Internet at cybercafes and the university's computer laboratory provided the users more volume of data as against personal and mobile phones.

Figure 1 depicts the health information requested by the respondents. The information covered included nutrition, fitness/exercise, HIV/AIDS, malaria, sore throat, mental health, menstrual pain, and sexual/reproductive health. The most sought among the options mentioned by the respondents is information about HIV/AIDS. A reasonable proportion of the respondents also sought information on diet, sexual/reproductive health, and mental health.

The Internet as a fountain of information also carries the possibility of spreading adequate and inadequate health information. This exposes health information seekers to the

Table 3. Sources of Access and Frequency of the Internet Use for Health Information Seeking.

Variables	Male	Female	Total	p value
Sources of access to the Internet				$\chi^2 = 2.152$; $df = 3$; $p > .005$
Cybercafes	83 (20.8%)	76 (19.0%)	159 (39.75%)	
Personal computer system	67 (16.8%)	81 (20.2%)	148 (37.0%)	
Mobile phones	29 (7.2%)	37 (9.2%)	66 (16.5%)	
School computer laboratory	14 (3.5%)	13 (3.2%)	27 (6.8%)	
Total	193 (48.2%)	207 (51.8%)	400 (100%)	

Table 4. Constraints to the Internet Access for Health Information Seeking.

Gender	What are the barriers to accessing online health information?			Total	p value
	Slow connection	Cost of access	Epileptic power supply		
Male	54 (13.5%)	87 (21.8%)	52 (13%)	193 (48.2%)	$\chi^2 = 12.652$; $df = 3$; $p > .05$
Female	43 (10.8%)	84 (21%)	80 (20%)	207 (51.8%)	
Total	97 (24.2%)	171 (42.8%)	132 (33%)	400 (100%)	

Table 5. Sources of the Internet Access and Average Data Volume Available to Users.

Source of the Internet access	Average data volume available to users			Total	p value
	>100 MB	101-200 MB	>200 MB		
Cybercafes	74 (18.5%)	37 (9.2%)	48 (12.1%)	159 (39.8%)	$\chi^2 = 27.257$; $df = 6$; $p < .005$
Personal computer system	67 (16.8%)	40 (10.0%)	41 (10.2%)	148 (37.0%)	
Mobile phones	41 (10.2%)	20 (5.0%)	5 (1.2%)	66 (37.0%)	
School computer laboratory	22 (5.5%)	5 (1.2%)	0 (0.0%)	27 (6.8%)	
Total	204 (100.0%)	102 (100.0%)	94 (100.0%)	400 (100.0%)	

benefits and dangers associated with the use of such information. Hence, we assessed respondents' perceptions of the quality of online health information accessed. Based on the perceived usefulness and trustworthiness of online health information, about 40% of the respondents considered information sought as quite reliable. A similar proportion also felt that the available information was accurate and dependable. As shown in Table 6, the majority (72.7%) of the respondents who perceived available health information as accurate and reliable also had an opportunity to seek similar information on their health conditions from different online sources. This might have influenced their perception of the information accessed. However, from a bivariate analysis, no significant difference was observed between male and female respondents about the perceived accuracy and dependability of information sought.

Online health information seeking might not end at the level of knowledge acquisition on a health need or lead to a decision to seek help. As shown in Table 7, a high proportion (202) of the respondents in this study claimed that they consulted an orthodox physician because of the information accessed online. Within this category of respondents, just a slight variation was observed in the percentage of male (48%) to female (52%) who consulted a physician after

accessing the needed information. Similarly, a fewer proportion (54) of the respondents claimed consultation with a traditional healer owing to the information accessed. However, there were those who did not consult a physician or a traditional healer but relied on self-medication or asked friends for suggestions.

Discussion

Online health information seeking is growing wide among youth, especially among those in colleges and other higher institutions of learning. Access to timely and relevant health information is essential to develop healthy practices that could improve health outcomes. This makes it necessary to investigate the sources of access, constraints to access, and health reasons for seeking online information, trustworthiness, and decisions associated with accessed health information.

Access to the Internet is widespread among the respondents in this study. This might be associated with the fact that all the respondents in this study were university undergraduates. At this level of study and with growing availability of personal computer system and mobile phones with Internet facilities, it is expected that a somewhat high rate of access

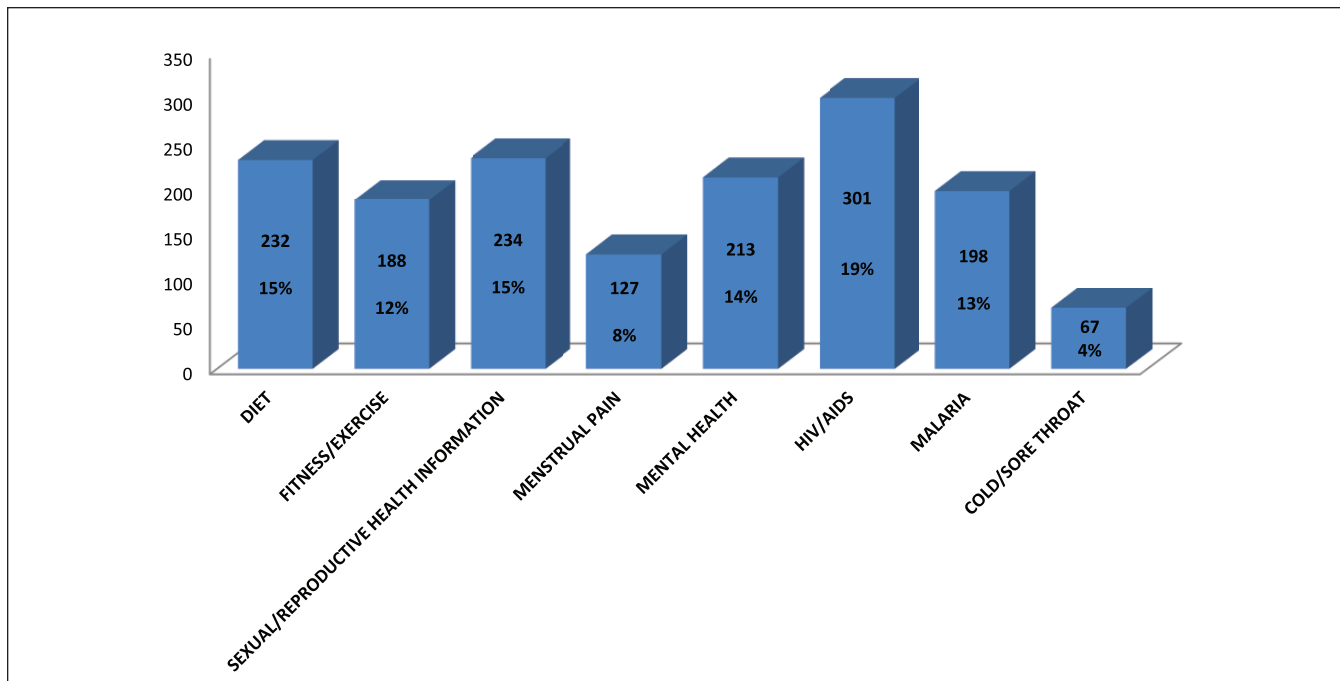


Figure 1. Health reasons for seeking online health information.

Table 6. Perceived Trustworthiness of Online Health Information.

Gender	What do you think about the trustworthiness of online health information?				Total	p value
	Unreliable	Fairly reliable	Very reliable	Accurate		
Male	8 (2%)	37 (9.2%)	74 (18.5%)	74 (18.5%)	193 (48.2%)	$\chi^2 = 8.24; p > .05$
Female	8 (2%)	56 (14%)	80 (20%)	63 (15.8%)	207 (51.8%)	
Total	16 (4%)	93 (23.2%)	154 (38.5%)	137 (34.2%)	400 (100%)	

may exist. This aligns with findings from previous studies in Nigeria (Ajuwon, 2003; Amassoma, Ayanda, & Tijani, 2010; Ayanbadejo, Sofola, & Uti, 2008). However, this may not be an actual representation of the Internet access among university students in Nigeria. The University of Ibadan, where the study was conducted, is the premier university and located in an urban area of Oyo State, Nigeria. This provides a privileged position that may be different from other universities in Nigeria, especially those located in rural areas or areas where the level of infrastructure is far below what is obtained at the University of Ibadan.

There are initiatives to improve Information and Communications Technology in all state-owned tertiary institutions in Nigeria (Ani, 2010; Apulu, Latham, & Moreton, 2011). Quality and affordable Internet access remains a challenge for many students in Nigeria (Ani, 2010). This problem has existed for decades as shown by the poor state of infrastructure in Nigerian universities. With the possible health implications, it would be encouraging to see a reduction in access cost and an increase in quality of the

Internet access. This will also improve the knowledge base of Nigerian youth in general. However, as earlier stated, an immediate concern is the poor performance of the health care system and the porous monitoring of patent medicine vendors in Nigeria (Osemene & Lamikanra, 2012). The study indicated that more students accessed the Internet using personal computers, whereas only 16.4% accessed the platform via mobile phones. In addition, more of the study participants accessed the Internet using cybercafes. This result aligns with previous studies that have explored the use of the Internet among Nigerian students (Ajuwon, 2003; Nwagwu, 2007). Findings from these studies also revealed that more students accessed the platform via cybercafes. On the contrary, Stork et al.'s (2013) results showed increased access to the Internet among young people in African countries via mobile phones. With the growing base of mobile telecommunication subscribers in Nigeria, it is expected that undergraduates in universities located in rural areas may enjoy the Internet access as their counterparts in urban areas (Stork et al., 2013). However, this depends on other factors, such as

Table 7. Decision Making Associated With Accessing Online Health Information.

Gender	What did you do with the health Information accessed within the last 3 months?					Total	p value
	Visited an orthodox physician	Visited a traditional healer	Self-medication/ patent medicine vendor	Confined in a friend for suggestions	Did not take any step		
Male	97 (48.0%)	28 (51.9%)	19 (47.5%)	17 (38.8%)	32 (53.3%)	193 (48.2%)	$\chi^2 = 22.113$; $df = 6$; $p < .005$
Female	105 (52.0%)	26 (48.1%)	21 (52.5%)	27 (61.4%)	28 (46.7%)	207 (51.8%)	
Total	202 (100.0%)	54 (100.0%)	40 (100.0%)	44 (100.0%)	60 (100.0%)	400 (100.0%)	

ownership of a mobile phone with Internet facilities and ability to subscribe to an affordable data plan. This is indicated in the results as the cost of the Internet access topped the list of prevailing constraints to frequent Internet access; as a result, more students accessed the Internet from cybercafes.

The frequency of the Internet use affects the quality of time spent by online health information seekers on searching and verifying information of interest. In this study, the rate of the Internet access was somewhat low, as about one third of the total respondents accessed the Internet on a daily basis. This corroborates earlier studies which reported that cost, poor Internet service delivery, and the need to attend to other things could constrain the quality of time and access to the Internet, especially among university students (Ani, 2010). The need for regular physical contacts between the respondents and their lecturers could also be a hindrance. This is because other mediums of facilitating active learning are grossly lacking in the study setting and the larger Nigerian society. With the present way of promoting teaching in many Nigerian universities (Ani, 2010), there are possibilities that lecture, assignments, reading, and other activities might have increased the available time for online information search, as much time is required when accessing a low-speed Internet service. While mobile phone access to the Internet was an alternative source for the respondents, fluctuations in services, limited Internet features on low-cost mobile phones, and the cost of mobile phone subscription may also influence or limit the kind of activities that can be carried out on phones and the possibility of balancing lecture time for flexible online health seeking.

It is noteworthy that the respondents in this study sought online health information for different health conditions. Among the females, the search for information on menstrual disorder was dominant. This corroborates existing evidence on the increasing prevalence of the disorder among young females and the search for help from different sources, including the Internet (Guvenc, Kilic, Akyuz, & Ustunsoz, 2012; Nair et al., 2012). The situation is similar to other findings in the Nigerian context (Iliyasu et al., 2012; Nwankwo, Aniebue, & Aniebue, 2010; Titilayo, Agunbiade, Banjo, & Lawani, 2010). Largely, the search for information on sexual/reproductive health is understandable as the respondents are in their reproductive ages. The reliance on the Internet for sexual and reproductive health Information portrays acceptability and the fruitfulness the virtual space may have in addressing the sexual and reproductive health challenges among young people in Sub-Saharan

Africa. As young people are sexually active, there are chances of engaging in risky sexual practices that expose some of them to infections that require more information to aid their decision to seek help. Access to timely sexual and reproductive health information is useful in several dimensions. It increases the young people's participation in protecting and promoting their sexual and reproductive health as well as becoming more informed about the consequences of their actions and inactions. The association of sexually transmitted infections with stigma may also be influencing the need for information in a manner that protects the identity of the information seeker. However, there is a need for caution, as the availability of sexual and reproductive health information through the Internet does not imply a substitute for seeking help from health facilities in the event of any infection. This is necessary especially in social settings where the practices of self-medication and stigma are associated with treating sexually transmitted infections.

Furthermore, a significant dimension of the findings in this study is the use of information sought in reaching a decision. As stated earlier, this represents a level of confidence in the information, which portrays danger, as many of the respondents relied on verification of the information sought through various online sources, which may not be from professional physicians. From another position, the reliance on several sources as a form of verification of available information may be useful in empowering the respondents in taking informed decisions and being active when interacting with their physicians. In the same vein, the possibility of acquiring erroneous information can also hamper the quality of relations in therapeutic interactions.

This article adds to the body of knowledge on online health information seeking among young people in Nigeria by focusing on the perceived dependability of the available information and the associated implications for help seeking from both formal and informal sources. The findings have important implications for health information seeking among young people in Nigeria. However, there are limitations in generalizing the results to all youth, including those dwelling in urban areas. The young people in this study were university undergraduates who might differ from those outside the university or in rural areas. The study is also limited by relying on quantitative data without generating qualitative information that could have been useful in understanding how context and health conditions influence the kind of information being accessed and associated health decisions. Despite

the deficiencies in cross-sectional design, this approach provided an opportunity to elicit online health seeking among university undergraduates with similar socioeconomic characteristics. It assessed the possible implications of this practice for health practices and outcomes among this group of youth and similar youth in other institutions of higher learning in the study setting.

Conclusion

The Internet access and use remain low among the study participants. Compounding the situation are the poor power supply, the high cost of the Internet access, and poor delivery of services. Existing constraints to the Internet access might encourage quick check of health information without giving adequate attention to cross-checking or verifying the authenticity of the information from other sources. With the poor access and urge to quickly surf the Internet for health-related information, the chances are high that inadequate information may be sought. This shortcoming may strengthen further the practice of self-medication and delays in prompt health seeking at formal sources. Furthermore, there is a need for practitioners in the Nigerian health sector to take an active position in providing timely and context-relevant information to the growing need for online health information. This also affords the sector an opportunity to take a lead position in regulating and ensuring the availability of health-related information, especially that which is related to locally common health conditions. Such efforts will also complement existing initiatives aimed at improving active participation of the Nigerian youth in promoting and sustaining healthy practices.

Author Contributions

The two authors made substantial contributions to the conception and design of the study. The first author muted the research idea, whereas the data analysis, drafting, and the manuscript revision were jointly handled. Both authors gave final approval of the version to be published.

Declaration of Conflicting Interests

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References

- Ajuwon, G. A. (2003). Computer and internet use by first year clinical and nursing students in a Nigerian teaching hospital. *BMC Medical Informatics and Decision Making*, 3(1), 10.
- Ajuwon, G. A. (2015). Internet accessibility and use of online health information resources by doctors in training healthcare institutions in Nigeria. *Library Philosophy and Practice*. Retrieved from <http://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=3377&context=libphilprac>
- Amassoma, D. J., Ayanda, D. O., & Tijani, K. (2010). Internet usage among Nigerian polytechnic students and its impact on manpower development: A case study approach. *Journal of Information Technology Impact*, 10, 161-170.
- Amaugo, L. G., Papadopoulos, C., Ochieng, B. M., & Ali, N. (2014). The effectiveness of HIV/AIDS school-based sexual health education programmes in Nigeria: A systematic review. *Health Education Research*, 29, 633-648.
- Ani, O. E. (2010). Internet access and use: A study of undergraduate students in three Nigerian universities. *The Electronic Library*, 28, 555-567.
- Antoci, A., Sabatini, F., & Sodini, M. (2013). Bowling alone but tweeting together: The evolution of human interaction in the social networking era. *Quality & Quantity*, 48, 1911-1927.
- Apulu, I., Latham, A., & Moreton, R. (2011). Factors affecting the effective utilisation and adoption of sophisticated ICT solutions: Case studies of SMEs in Lagos, Nigeria. *Journal of Systems and Information Technology*, 13, 125-143.
- Ayanbadejo, P., Sofola, O., & Uti, O. (2008). Internet access and use among Nigerian dental students. *Nigerian Dental Journal*, 15(2), 94-97.
- Birpreet, Singh, A., & Kumar, K. (2011). Quality of health information available on internet & its use by students of Panjab University Chandigarh, India. *Indian Health Journal*. Retrieved from <http://www.slideshare.net/indianhealthjournal/quality-of-health-information-on-the-internet-indian-medical-students-perspective>
- Cline, R. J. W., & Haynes, K. M. (2001). Consumer health information seeking on the Internet: The state of the art. *Health Education Research*, 16, 671-692. doi:10.1093/her/16.6.671
- Escoffery, C., Miner, K. R., Adame, D. D., Butler, S., McCormick, L., & Mendell, E. (2005). Internet use for health information among college students. *Journal of American College Health*, 53, 183-188.
- Fadare, J. O., & Tamuno, I. (2011). Antibiotic self-medication among university medical undergraduates in Northern Nigeria. *Journal of Public Health & Epidemiology*, 3, 217-220.
- Famuyiwa, O., Aina, O. F., & Bankole-Okun, O. M. (2011). Epidemiology of psychoactive drug use amongst adolescents in metropolitan Lagos, Nigeria. *European Child & Adolescent Psychiatry*, 20, 351-359.
- Guvenc, G., Kilic, A., Akyuz, A., & Ustunsoz, A. (2012). Premenstrual syndrome and attitudes toward menstruation in a sample of nursing students. *Journal of Psychosomatic Obstetrics & Gynecology*, 33, 106-111.
- Horgan, A., & Sweeney, J. (2012). University students' online habits and their use of the Internet for health information. *Computers Informatics Nursing*, 30, 402-408.
- Iliyasu, Z., Galadanci, H. S., Abubakar, I. S., Ismail, A. O., & Aliyu, M. H. (2012). Menstrual patterns and gynecologic morbidity among university students in Kano, Nigeria. *Journal of Pediatric & Adolescent Gynecology*, 25, 401-406. doi:10.1016/j.jpag.2012.08.006
- Imaledo, J. A., Peter-Kio, O. B., & Asuquo, E. O. (2013). Pattern of risky sexual behavior and associated factors among undergraduate students of the University of Port Harcourt, Rivers State, Nigeria. *Pan African Medical Journal*, 12(1). Retrieved from <http://www.panafrican-med-journal.com/content/article/12/97/full/>
- Kadiri, K., & Alabi, O. (2014). Price comparisons of MTN, Globacom, Etizalat and Airtel Data bundle services in Nigeria

- with Foreign jurisdictions. *World*, 3(3). Retrieved from http://www.academia.edu/6145799/Price_Comparisons_of_MTN_GLO_Etizalat_and_Airtel_Services_in_Nigeria_and_with_Foreign_Jurisdiction
- Kam, J., Stanzus, D., Cheah, J., Heerasing, N., & Yi Tie, S. (2010). The Internet as a health information source for university students. *Australian Medical Student Journal*, 1(1), 24-26.
- Kim, H., Park, S. Y., & Bozeman, I. (2011). Online health information search and evaluation: Observations and semi-structured interviews with college students and maternal health experts. *Health Information and Libraries Journal*, 28, 188-199.
- Kitikannakorn, N., & Sitthiworanan, C. (2009). Searching for health information on the Internet by undergraduate students in Phitsanulok, Thailand. *International Journal of Adolescent Medicine and Health*, 21, 313-318.
- Leung, L. (2008). Internet embeddedness: Links with online health information seeking, expectancy value/quality of health information websites, and Internet usage patterns. *CyberPsychology & Behavior*, 11, 565-569.
- Marful, W. A., & Winter, A. (2015). When information technology meets healthcare in West Africa: A literature review. *Journal of Health Informatics in Africa*, 2(2), 29-35.
- Minichiello, V., Rahman, S., Dune, T., Scott, J., & Dowsett, G. (2013). E-health: Potential benefits and challenges in providing and accessing sexual health services. *BMC Public Health*, 13(1), 1-7.
- Montesano, M. (2013). *An endless array of options: How the Internet is revolutionizing the ways we meet and mate*. CUNY Academic Works. Retrieved from http://academicworks.cuny.edu/cc_etds_theses/170
- Murero, M., & Rice, R. E. (2013). When information technology meets healthcare in West Africa: A literature review. *Journal of Health Informatics in Africa*, 2(2). Retrieved from <http://jhia-online.org/index.php/jhia/article/view/104>
- Nair, M. K. C., Chacko, D. S., Ranjith Darwin, M., Padma, K., George, B., & Russell, P. S. (2012). Menstrual disorders and menstrual hygiene practices in higher secondary school girls. *The Indian Journal of Pediatrics*, 79, 74-78. doi:10.1007/s12098-011-0431-z
- Nwagwu, W. E. (2007). The Internet as a source of reproductive health information among adolescent girls in an urban city in Nigeria. *BMC Public Health*, 7(1), 354.
- Nwankwo, T. O., Aniebue, U. U., & Aniebue, P. N. (2010). Menstrual disorders in adolescent school girls in Enugu, Nigeria. *Journal of Pediatric & Adolescent Gynecology*, 23, 358-363.
- Oppong, A. K., & Oti-Boadi, M. (2013). HIV/AIDS knowledge among undergraduate university students: Implications for health education programs in Ghana. *African Health Sciences*, 13, 270-277.
- Osemene, K., & Lamikanra, A. (2012). A study of the prevalence of self-medication practice among university students in Southwestern Nigeria. *Tropical Journal of Pharmaceutical Research*, 11, 683-689.
- Owusu-Acheaw, M., & Larson, A. G. (2015). Use of social media and its impact on academic performance of tertiary institution students: A study of students of Koforidua Polytechnic, Ghana. *Journal of Education and Practice*, 6(6), 94-101.
- Oyedemi, T. D. (2012). Digital inequalities and implications for social inequalities: A study of Internet penetration amongst university students in South Africa. *Telematics and Informatics*, 29, 302-313.
- Percheski, C., & Hargittai, E. (2010). Health information-seeking in the digital age. *Journal of American College Health*, 59, 379-386.
- Scott, S. D., Gilmour, J., & Fielden, J. (2008). Nursing students and internet health information. *Nurse Education Today*, 28, 993-1001.
- Shaikh, I. A., Shaikh, M. A., Kamal, A., & Masood, S. (2008). Internet access and utilization for health information among university students in Islamabad. *Journal of Ayub Medical College, Abbottabad*, 20, 153-156.
- Siliquini, R., Ceruti, M., Lovato, E., Bert, F., Bruno, S., De Vito, E., . . . Minniti, D. (2011). Surfing the internet for health information: An Italian survey on use and population choices. *BMC Medical Informatics and Decision Making*, 11(1), 21.
- Sillence, E., Briggs, P., Harris, P. R., & Fishwick, L. (2007). How do patients evaluate and make use of online health information? *Social Science & Medicine*, 64, 1853-1862.
- Singh, K., & Brown, R. J. (2014). Health-related Internet habits and health anxiety in university students. *Anxiety, Stress, & Coping*, 27, 542-554.
- Stork, C., Calandro, E., & Gillwald, A. N. (2013). Internet going mobile: Internet access and use in 11 African countries. *Info*, 15(5), 34-51.
- Titilayo, A., Agunbiade, O., Banjo, O., & Lawani, A. (2010). Menstrual discomfort and its influence on daily academic activities and psychosocial relationship among undergraduate female students in Nigeria. *Tanzania Journal of Health Research*, 11, 181-188.
- University of Ibadan. (2012). *University of Ibadan annual report*. Ibadan, Nigeria: Ibadan University Press. Retrieved from http://www.ui.edu.ng/sites/default/files/2011_2012_UI_Reports.pdf
- Warf, B. (2011). Geographies of global Internet censorship. *GeoJournal*, 76, 1-23.
- Yan, Y. Y. (2010). Online health information seeking behavior in Hong Kong: An exploratory study. *Journal of Medical Systems*, 34, 147-153.

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