

HEALTH INFORMATION SEEKING USING THE INTERNET BY PATIENTS ATTENDING A SURGICAL CARE DEPARTMENT IN A TERTIARY HOSPITAL IN SUB-SAHARA AFRICA

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Summary

Objective: To ascertain the health information seeking behavior of patients visiting a surgical care Department in a tertiary hospital using the Internet.

Subjects and Methods: A cross-sectional study was carried out at the Surgical Department of the Korle-Bu Teaching Hospital in Accra. Patients who consented to participate in the study were interviewed using a structured questionnaire. The parameters considered included the ages of the patients, their gender and educational status, the knowledge of the patients or their care-givers of the patients' clinical diagnoses, their use of mobile phones or other Internet-ready devices, as well as access to the Internet, awareness of information on their disease condition being on the Internet and having accessed such information.

Results: The total number of responses analyzed was 319. The mean age of the patients was 42 years. There were 55.2% males and 44.8% females. The largest

percentage (31.9%) had had secondary (High School) education. Of the respondents, 92.2% had mobile phones and 29.8% of the patients had other Internet-ready devices. Regarding access to the Internet, 35.7% had access, 30.4% were aware of finding health information relevant to their disease condition on the Internet and 15.7% had accessed the Internet for this health information. There was a strong correlation between the educational status of the patients and having accessed health information on the Internet. **Conclusion:** The majority of respondents had not accessed the Internet for information on their health condition. Patient education in the West African sub-region aimed at improving the usage of the Internet to acquire quality health-related information is needed to enhance health outcomes in this era of evidence-based health-care delivery.

Key Words: health information, internet, access, mobile phone, patients, surgical care

Introduction

The Internet has been observed to have altered significantly many aspects of life such as banking, commerce, entertainment, human relationships and education.¹ It has been noted that the use of the Internet has experienced rapid growth in both the developed and the developing countries during the last decade^{2,3} with an estimated 298 million Internet users in Africa as at June 2014 and an Internet penetration of 26.5%.⁴

The Internet has been noted to have a wide range of medical information on various diseases and the search for health-related information constitutes one of the main reasons for people browsing the Internet which has been observed to offer a high degree of interactivity, anonymity and easily accessible space to find sensitive information.^{5,6} This therefore makes the Internet a good place to seek health-related information as easy accessibility, anonymity and ability to interact

are the desired goals of most patients. It was observed in 2002 that many more people sought medical advice on the Internet than visited health professionals worldwide.⁷ Some authorities believe that the primary role of the Internet, especially in developing countries, is to deliver information and improve the health of the populations.^{8,9} A study in 2004 on the use of the Internet to access reproductive health information among adolescents in Accra found 64 % of them had one time or the other accessed the Internet for reproductive health information.¹⁰ Another study in 2012 on the adoption, penetration and usage of the Internet by a wide range of working Ghanaians revealed an Internet usage of 45.6% for educational purposes.¹ Ghana, with a population of about 26.5 million, had a mobile telephone subscription rate of 29,990,581 at the end of October 2014¹¹ with all the licensed network providers in the country providing services with Internet connection capabilities. It is anticipated that patients will use the Internet to enhance their knowledge of their disease conditions that will translate favorably on the management of their conditions. With the assurance of finding information on their existing medical conditions and helping them deal with health issues as some of the strongest factors influencing the use of the Internet to search for health-related information,¹² the patients as well as the care-givers were considered motivated enough to be driven

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to access health-related information on the Internet to help them better understand their disease condition(s). This is in line with the Uses and Gratifications (U&G) theory due to Blumler & Katz (1974) which assumes that the individual user of the media is in control, active, and goal-directed, as opposed to simply receiving media messages.¹³

It is however important to state that the quality of information on the Internet is vital as studies on the quality of health-related information has led to concerns about the accuracy as well as the permanence of such information.¹⁴ Accurate relevant information is beneficial while inaccurate information is harmful.¹⁵

This study looked at the use of the Internet to acquire health-related information by patients visiting a tertiary surgical Care Hospital in Accra, Ghana, a sub-Saharan region.

Objective: To ascertain the health information seeking behavior of patients visiting a surgical care Department in a tertiary Hospital in Accra in terms of Internet usage

Subject and Methods

The study objective was to ascertain the health information seeking behavior using the internet as seen in the usual clients visiting the surgical clinics and in the process identify the influence of some factors such as age and educational background on the clients' health information seeking behavior using the internet. Since no such hospital based study had been done in Ghana before, the usual patient population which presented to the surgical clinics was the study population. A cross sectional study was carried out from the 1st to the 19th of December 2014 at the Surgical Department of the Korle-Bu Teaching Hospital in Accra, Ghana. Patients gave informed consent to participate in the study. Twenty-five consecutive patients were interviewed on each working day, except the 5th of December which was a public holiday, using a structured questionnaire that was investigator administered. The clinics visited included the general surgery units, urology unit and neurosurgery unit. For patients below 12 years of age their parents/ care-givers were interviewed on their health-related information seeking behavior with regards to the conditions of their children/wards.

The information captured included the ages of the patients, their gender, educational status and occupation. The knowledge of the patients or their care-givers of the nature and duration of their clinical condition (diagnosis) was also determined. Their use of mobile phones and the network they subscribed to were also determined. Their possession of Internet-ready devices such as laptops or desktop computers was ascertained as well as whether they had access to the Internet. The patients or care-givers also gave information on whether they were aware of the availability of health information on their clinical disease/ condition on the Internet and whether they had

actually accessed such health information on the Internet.

The patients/ care-givers were also asked if they had ever read any book on their current disease conditions aimed at increasing their knowledge on the conditions.

Excluded from the study were patients who were first attendants at the surgical clinics, emergency cases and patients too ill to participate in the interview.

Their responses to the questionnaires were documented and analyzed using the SPSS version 17 software and presented as frequencies and tables.

Results:

The total number of responses analyzed was 319 and included 24 children 12 years of age or less whose parents/ care-givers were the respondents.

The mean age of the patients was 42.0 years ± 19.7 (range 1-91years)). There were 176 (55.2%) males and 143 (44.8%) females. A significant number of them, 102 (31.9%) had had secondary education while those with no formal education were 38 (11.9%). (Table 1)

Table 1: The educational status of the patients

Educational status of the patients	No. (%)
No formal education	38 (11.9)
Primary	80 (25.1)
Secondary	102 (31.9)
Tertiary	87 (27.3)
Pre-school	12 (3.8)
Total	319 (100)

Concerning the occupational status of the patients, the largest proportion, 63 (19.7 %) were professionals, with 5 (1.6%) being unemployed. Thirty-five of the patients (11.0%) were retired. (Table 2)

Two hundred and ninety-four (92.2 %) of the respondents had mobile phones with 85 (26.6%) of the respondents subscribing to two or more mobile telephone service networks.

With regards to the possession of other Internet-ready devices such as desktop computers, laptop computers or other devices, 95 (29.8%) of the patients had these devices while 224 (70.2%) did not possess these Internet-ready devices.

One hundred and fourteen (35.7%) of the respondents indicated that they had access to the

Table 2: Occupational status of the patients

Occupational status of the patients	No. (%)
Professionals	63 (19.7)
Business and trade	61(19.1)
Artisans	55 (17.2)
Students	45 (14.1)
Farmers	23 (7.2)
Civil Servants	11 (3.4)
Security service personnel	7 (2.2)
Retired	35 (11.0)
Prisoners	2 (0.6)
Unemployed	5 (1.6)
Pre-school	12 (3.8)
Total	319 (100)

Internet while 205 (64.3%) did not have access. (Table 3)

The adolescents between the ages of 13-19 years constituted the highest percentage (70%) of those with access to the Internet. (Table 4)

The responses of parents/ care-givers revealed that 24% of them had accessed the Internet for information on the disease conditions of their children/wards.

Of those who had access, 33.0% had accessed the Internet using their mobile phones only, 20.4% had used mobile phones or modems/ Wi-Fi while 46.6% had used modems/Wi-Fi.

Two hundred and ninety-nine (93.7%) of the patients were aware of their diagnosis with only 20 (6.3%) being unaware of their clinical diagnosis.

For the duration of their clinical condition, 154 (48.3%) had had the disease condition for one year or less, 105 (32.9%) had had the disease between 1 and 5 years while 60 (18.8%) had had the condition for more than 5 years. Ninety-seven (30.4%) of the respondents were aware they could find relevant health information on their disease condition while 222

Table 3: Responses on access, awareness and actual accessed health information on the internet

	YES No. (%)	NO No. (%)
Access to the internet	114 (35.7)	205 (64.3)
Awareness of health information on their disease condition on the internet	97 (30.4)	222 (69.6)
Accessed health information on their disease condition on the internet	50 (15.7)	269 (84.3)

(69.6%) were not aware. (Table 3) Respondents between the ages of 20 and 29 years contained the group with the highest percentage of those (51.8%) who were aware of finding health-related information on the Internet (table 4).

Fifty (15.7%) of the respondents had accessed information on their health-related conditions on the Internet while 269 (84.3%) had not. (Table 3) It was observed that 51.5% of those aware of the availability of health information on the Internet had actually accessed the Internet for information on their disease conditions while 48.5% of these knowledgeable patients had not. Patients between 20 and 29 years constituted the group with the highest percentage (28.6%) of those who had accessed health information on their disease conditions on the Internet (table 4).

In relation to educational status, those with tertiary education constituted the group with the highest percentage of those who had access to the Internet (71.3%), being aware of finding health information on their disease condition on the Internet (70.1%) and having accessed the Internet to look for health information on their disease condition (46.0%). (Table 5). There was a significant correlation between the educational status of the patients and access to the Internet (p<0.001)

The patients who had assessed information had used Google as the search engine. Three of the respondents indicated Wikipedia while another four indicated WebMD as the website visited for the health information. Most could not however state the website(s) visited. The majority of patients/ respondents who had not used the Internet to assess information on their health provided no reason for their action.

The few reasons advanced included their belief that their medical doctor(s) knew best and they wanted to avoid being seen as challenging the medical practitioner with such Internet-acquired knowledge. Two patients indicated they had been well-informed by their medical doctors and other relations who were in the medical field and therefore had no need for additional health information on their disease condition.

Table 4: Percentage of patients in various age groups and their responses

Age (years)	Gender		Access to the internet		Awareness of health information on their disease condition on the internet		Accessed health information on their disease condition on the internet		Number of patients/ respondents
	Male	Female	Yes	No	Yes	No	Yes	No	
≤12	62.5	37.5	12.5*	87.5*	4.2*	95.8*	4.2*	95.8*	24
13-19	25.0	75.0	70.0	30.0	50.0	50.0	10.0	90.0	10
20-29	50.0	50.0	67.9	32.1	51.8	48.2	28.6	71.4	56
30-39	66.7	33.3	40.3	59.7	30.6	69.4	21.0	79.0	62
40-49	46.9	53.1	31.1	68.9	29.5	70.5	11.5	88.5	61
50-59	46.9	53.1	27.9	72.1	25.6	74.4	14.0	86.0	43
60-69	57.1	42.9	30.0	70.0	36.7	63.3	16.7	83.3	30
70-79	64.3	35.7	4.5	95.5	9.1	90.9	4.5	95.5	22
≥ 80	80.0	20.0	0.0	100.0	9.1	90.9	0.0	100.0	11
									319

Data with * indicate responses obtained from the care givers of the patients ≤ 12 years.

Table 5: Showing the percentage of patients with each educational status and their responses

Educational status of the patient	Gender		Access to the internet		Awareness of health information on their disease condition on the internet		Accessed health information on their disease condition on the internet		Number of patients/ respondents
	Male	Female	Yes	No	Yes	No	Yes	No	
No-formal education	51.7	48.3	0.0	100.0	0.0	100.0	0.0	100.0	38
Primary education	55.6	44.4	13.2	86.8	10.3	89.7	1.5	98.5	68
Secondary education	56.4	43.6	39.2	60.8	27.5	72.5	7.8	92.2	102
tertiary	52.9	47.1	71.3	28.7	70.1	29.9	46.0	54.0	87
									295

It excludes respondents of patients ≤12 years of age (n=24).

On whether they had accessed any additional information by reading a health-related book on their health condition, the majority 324 (86.8%) had not read any medical book or written material on their disease condition. For the minority 43 (13.5%) that had done some reading, most had read a health-related magazine or pamphlet with one patient indicating that he had read a newspaper article.

Discussion

Access to the Internet in developing countries has been noted to be on the increase, with Ghana not being an exception. Ghana has a relatively high Internet penetration (20.1%) compared to its sub-Saharan neighbours, being second to Nigeria with a penetration per percentage population of 39.7%. (Togo 4.8%, Liberia 4.6%, Burkina Faso 4.4% and Cote D'ivoire 4.2%, follow in that order as at June 2014).⁴ All the telephone networks in Ghana provide Internet connectivity. The study's finding that 92.2% of the patients had mobile phones with 26.6% having two or more phones with different network subscriptions confirms the assertion by Elsie Kanza that regardless of social class, almost everyone [in Africa] has a mobile phone, or two or three.¹⁶ Since the networks subscribed to by the patients had Internet connectivity, access to the Internet for health-related information was expected to be high. However only 35.7% of the respondents indicated they had access to the Internet. This is rather low compared to the findings from other studies that found 63% of the youth in Accra¹⁰ and 74 % of the youth in Owerri, Nigeria¹⁷ had ever assessed the Internet. This finding is at variance with the high levels of mobile phone use among the patients. It has been observed that in most developing-countries, availability of information is one thing, access to and use of the available information is another.⁹ It is therefore essential to educate and encourage the Ghanaian population and patients in the West Africa sub-Region to access and maximize the use of the Internet for health-related information. The mobile phone can serve as a means of increasing access to health information on the Internet in the sub-region. This is particularly so since the possession of other Internet-ready devices such as laptops and desktop computers other than mobile phones by the patients was only 29.8% with most of these Internet-ready devices being available and accessible at work or school. This latter finding calls for increased investments in Information Technology in the sub-region if there is to be an improvement in access to health-related information through the Internet.

The patients could not be considered as being ignorant of their clinical disease conditions or diagnoses which could have hindered getting relevant information on the Internet since 93.7% of them knew their clinical diagnoses with 51.7% of them having known the diagnosis for more than 1 year.

A study by Borzekowski et al in 2006 of adolescents in Accra on online access and the use of the Internet for health information found high levels of interest and confidence in finding online health information among Internet users but also among those who had not yet used the Internet.¹⁰ In this study, only 30.4% of the respondents were aware of finding health-related information on their disease condition. It was however observed that the proportion within each age group that were aware of finding health-related information on the Internet was highest among the 13-19year age group (50.0%) and the 20-29 age group (51.8%), confirming the findings that young people were more confident of finding health-related information on the Internet. As this study focused specifically on finding health-related information on the Internet, this finding of 30.4% of the patients being aware was lower compared to the 48.3% of patients being aware of the Internet in a study from Sri Lanka in 2009 on Internet use by patients attending specialist clinics in Sri Lanka, a developing country.¹⁸ That study looked at a general awareness of the Internet.

In this study, only 15.7% of the patients had actually accessed information on their health conditions on the Internet. This may be due to the diverse nature of the patient population in relation to their ages and educational status. Comparing the various age groups, it was realized that the greatest proportion within an age group that had actually accessed the Internet on their disease conditions were the 20-29 age group (28.6%) followed by the 30-39 age group (21.0%), supporting other studies that found young people to be more likely to assess the Internet than the elderly because they can easily adapt to newer technology than elderly people.^{19,20} Only one patient (3%) in the above 70 year age group had accessed the Internet for health information on his disease condition.

Unlike the finding by Borzekowski et al among adolescents in Accra that 35.0% of the total sample of in-school youth and 53.3% of in-school Internet users had tried to get some type of health information on the Internet¹⁰ in this study 50.0% of the adolescents were aware of the availability of health-related information on their disease condition on the Internet, however only 10% had actually accessed that information. Patients with tertiary education constituted the highest percentage of those who had accessed the Internet for health information (46.0%), with the finding of significant correlation between the educational level and access to the Internet, awareness of the availability of health information on the Internet and having accessed the Internet for such information. This confirms other studies that increasing education increases use of the Internet.²¹

As observed in the findings, the majority of those that had not assessed the internet did not give any reason. This could be because the patients were not aware that acquiring more information on their disease

condition could contribute to better management and a more favourable outcome. Hence the low internet usage in acquiring health-related information (15.7%).

The percentage of patients (15.7%) who had actually accessed the Internet in this study is higher compared to the 0.97% in the study from Sri Lanka, another developing country (2009).¹⁸ Studies conducted in some developed countries between 2000 and 2007 revealed patients or their relations who had accessed health information on their disease condition on the Internet ranged from 43% to 64%.^{22,23,24,25} Thus, as at the end of 2014 patients in Accra, in the Sub-Saharan West Africa region, were yet to match the practices, in terms of accessing the Internet for health-related information, of those in the developed countries observed a decade earlier. The digital divide is still persistent and yet to be bridged in terms of accessing health-related information on the Internet by patients in the Sub-Saharan region relative to those in the developed countries. There is therefore the need for a concerted effort that should involve health care providers, professional organizations, the Government and the Society in general in educating the populace on the use of the Internet to enhance the knowledge of patients on their disease condition. This is expected to have a positive effect on the management and outcomes of their clinical conditions.

It is noteworthy that the two patients who were prisoners had neither phones nor access to the Internet because of their status as prisoners. It is essential to consider the health-related information needs of prisoners as well.

The issue of the quality of available health-related information on the Internet has been of much interest. It has been noted that quality health information has a positive impact on health outcomes as it supports evidence-based healthcare delivery.²⁶ For the patients and caregivers that had accessed health information on the Internet in this study, the majority did remember the search engine used in retrieving the health information, with Google being preferred. They could not however state the websites visited for the health-related information. This made it difficult to ascertain the quality of the health information obtained on their disease condition. Thus in considering improving access to health-related information in the West Africa sub-region, issues of the quality of such information should receive equal attention.

Limitations of this study

The study looked at the patient's own initiative to seek the health related information (for those above 12 years of age) and by parents or guardians (for those ≥ 12 years of age). The role of other family members or close associates in getting access to this internet based health information was not ascertained.

Conclusion

The majority of the patients attending the surgical care Department were aware of their health-related diagnosis. However, only few of them were aware that health information on their condition was available on the Internet. The majority had not accessed the Internet for information on their health condition even though most had mobile phones with the possibility of Internet connectivity. Patient education in the West African sub-region aimed at improving the use of the Internet to acquire quality health-related information is needed to enhance health outcomes in this era of evidence-based health-care delivery.

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