

# Knowledge of Digital Technology, Its Access and Use to Enhance Dissemination of Health Information Among Residents of Ogui New Layout Enugu, Nigeria

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## Abstract

**Background:** There seems to be a rapidly growing trend of consumers' utilization of information technology (IT) systems in Nigeria. Ease of internet access via smartphones has made information on various subjects including health readily available to many Nigerians. About 50.2% of Nigerians use the internet. It has become a popular health intervention tool because of its easy access on a variety of devices (laptops, mobile phones, tablets) and is now a common resource to disseminate and find health information. Therefore, the need to obtain such data using this community-based survey to assess the feasibility of exploiting the full potential of ICT to disseminate health information and improve healthcare delivery in Nigeria, given the seemingly rising consumer uptake of internet and mobile electronic technology is important. **Methodology:** This community-based cross-sectional descriptive study was conducted among residents of Ogui New Layout, Enugu, Enugu state, Nigeria to assess knowledge of digital technology, its access and use among its residents to enhance dissemination of health information. All those living in the area at the time of study were included, excluding those less than 15yrs giving a total of 487 participants using multistage sampling method. Data was collected using structured self-administered questionnaire adapted from similar work done among New York state residents. **Results:** Health information seeking via digital technology was found to be highest among people aged 15-24 years and people who attained tertiary level of education. **Conclusion:** Given high access to ICT and utilization of its features as established in this work among our respondents for both health and non-health related activities, digital channels can be an effective means of facilitating healthcare and health promotion interventions among the people.

**Keywords:** knowledge, digital technology, access, dissemination, health information

## 1. Introduction

There seems to be a rapidly growing trend of consumers' utilization of information technology

(IT) systems in Nigeria. The reason for the hitherto poor access and utilization of IT in developing countries may be attributed to

various factors including among others poverty, poor internet penetration and inadequate infrastructure. (Adessoji A., 2017) In Nigeria; however, the trend seems to be changing since the introduction of global system of mobile communication (GSM) in the mid-2000s. Ease of internet access via smartphones has made information on various subjects including health readily available to many Nigerians. About 50.2% of Nigerians use the internet according to a 2017 report. (Internet Penetration in Africa, 2017)

Digital technology has a considerable potential to empower patients and families by improving their communication with health professionals. (Stephanie JM, Kanya S, Ivor BH & Leandra G., 2014) It has become a popular health intervention tool because of its easy access on a variety of devices (laptops, mobile phones, tablets) and is now a common resource to disseminate and find health information. (Korda H & Itani Z., 2013; United States of America, 2001) According to United States Committee on Quality of Healthcare, IT plays a critical role in designing a health system that is safe, effective, patient-centered, timely, efficient, and equitable. The major advantages of digital technology include easy access to information, improved communication, and mass communication and interactivity.

Enhancement of health information via digital technology therefore describes health promotion interventions that leverage the internet and other electronic media to connect caregivers' healthcare systems and hospitals to patients and other consumers of health information and services. In Nigeria, life expectancy at birth is 55/56 years (Global Health Observatory Data Repository: Life expectancy and healthy life expectancy, 2016). This is alarming and disturbing when compared with that of developed countries and stems from poor health care system in Nigeria. The problem of inadequate healthcare delivery has been minimized in countries like the United Kingdom whose health services make use of Information Communication Technology (ICT). The Nigerian health sector would have improved if its government had exploited the potential of ICT like other developed nations (United Kingdom, 1998-2005; Fuchs C & Horak E., 2008). This aptly highlights how developing nations like Nigeria have been marginalized by the digital divide which is a phenomenon linked not only to the

topic of access to the internet, but also to the one of usage benefit.

The European Union Digital Literacy High-Level Expert Group is of the opinion that "Digital literacy is increasingly becoming an essential life competence and inability to access or use ICT has effectively become a barrier to social integration and personal development (European Commission, 2010). Unfortunately, a large proportion of the world population in developing and even developed nations do not have access to the new technology (New Zealand, 2010; Salavati S., 2016) which is progressively becoming inevitable in every aspect of daily living, health inclusive.

Although similar studies have been carried out by researchers in developed nations, there is paucity of local data to assess the level of digital technology access and use in Nigeria and its application for dissemination of health information. There is need therefore to obtain such data and in the context of this study using a community-based survey to assess the feasibility of exploiting the full potential of ICT to disseminate health information and improve healthcare delivery in Nigeria, given the seemingly rising consumer uptake of internet and mobile electronic technology in Nigeria.

This study aims to understand the level of access to digital technology and its use to seek health information among residents of Ogui new Layout, Enugu.

Health communication is a very broad and multidisciplinary concept that incorporates many different professions, e.g., medicine, sociology, psychology, public health and communication. (Schiavo R., 2007; United States of America, 2001) It is the art of informing, influencing, and motivating individuals, institutional and public audiences about health issues through planned learning experiences based on sound theories. The scope of health communication is to improve the disease prevention, health promotion, healthcare policy, and the business of healthcare as well as enhancement of the quality of life and health of individuals within the community (Adessoji A., 2017). For health promotion the target is to enable people to increase control over their health and its determinants, and thereby improve their personal and essentially public health in general. (World Health Organization, 2005) This is also called health education.

Digital technology has pervaded most aspect of daily life experience; thus, generating a lot of research interests. Unfortunately, studies on its application in healthcare delivery in developing countries leave a lot of unanswered questions. In Nigeria especially, there is paucity of officially published studies on the level of access to digital technology and much less on its use and acceptance for receiving health information, even as there seems to be rapidly increasing utilization of the internet in Nigeria due to apparent boom in the mobile phone market. However, a lot of studies from the developed nations give promising evidence in support of its application in healthcare.

There are different tools and channels of health education. Because of their popularity, mass media have a large reach but with a tendency to be less effective in changing attitudes and behavior because they lack direct interpersonal contact. (Cassell M. Jackson C & Cheuvront B., 1998; Kaplan A & Haenlein M., 2009; Desphande A & Jadad A., 2009; World Health Organisation, 1997; World Health Organisation, 2009) Face-to-face communication, e.g., with a doctor which is the common approach to health communication is the richest medium because it is interactive. Fortunately, digital technology channels combine the advantages of both mass communication and the feature of interactivity. Interactive applications on websites like real time text-based chat or even face-to-face video chat are possible. This way complicated health messages that need more intensive support to induce behavioral change can be spread through digital technology; combining effectiveness with the potential to reach underserved population. An example of this increase in media richness in websites is seen in social media.

With the use of social media, the public can interact with and engage on the supplied information by asking questions, or adding information. Using open conversations these questions and their answers are also visible to the other direct participants aggregating the information and creating collaboration. Using social media one-to-one communication will be replaced by one-to-many or even many-to-many.

This enrichment of health communication is capable of improving the health care in general.

Other applications of digital technology in healthcare include telemedicine, electronic health records, electronic health apps, reminder

messages of scheduled screening tests, clinic appointments or drug administration schedules among others.

Telemedicine is the delivery of health care services, where distance is a critical factor, by all health care professionals using information and communication technologies for the exchange of valid information for diagnosis, treatment and prevention of disease and injuries, research and evaluation, and for the continuing education of health care providers, all in the interests of advancing the health of individuals and their communities. Telemedicine uses ICT to overcome geographical barriers and increase access to healthcare services. Telemedicine can give a new model for interaction with the patients or other important entities such as hospitals, pharmacies, physicians and governmental agencies.

The Electronic Health Record (EHR) is a key component of medical informatics that is now being utilized in industrialized nations to improve healthcare. The use of electronic records has distinct advantages over paper records; these include: enabled access to medical records from remote locations, improved speed and ease of retrieval of records, avenues to flag abnormal results and the elimination of hand written prescriptions, which reduces the occurrence of prescription errors. (Ohemeng-Dapaah S, Pronyk P, Akosa E et al., 2010) Other benefits are the simultaneous access to patient records by multiple users and the ability to perform data queries to inform decision making. These potential benefits of the EHR have enabled its wide acceptability in industrialized nations.

Globally, access to digital technology is increasing, largely due to proliferation of various mobile devices such that today's ICT development is driven by the spread of mobile-broadband services. The growth of mobile broadband has largely outpaced that of fixed broadband, while mobile- broadband prices have dropped by 50 per cent on average over the last three years. These factors have resulted in about half of the world's population getting online and broadband services being available at much higher speeds. In developed countries, 94% of young people aged 15-24 use the Internet compared with 67% in developing countries and only 30% in Least Developed Countries.

As of spring 2013, a cross-sectional clinical survey among African American parents in an urban undeveloped population showed that approximately 85% of American adults used the Internet, 60% owned a smartphone, and 63% had wireless online access with a laptop or cell phone (Black AD, Car J, Pagliari C et al., 2011; Akanbi MO et al., 2011; International Telecommunication Union, 2017; Manganello JA, Gerstner G, Pergolino K, Graham Y. & Strogatz D., 2017; United States of America, 2018).

Later in 2016, findings from a cross-sectional telephone survey of New York State residents, to assess media and technology access, use patterns, and preferences for receiving health information using random digit dialing methodology suggested that the internet and other technologies are viable ways to reach New York State residents. Data obtained suggested that they had a high level of computer and internet use. 82% had at least one working computer at home, and 85% used the internet at least sometimes. Mobile phone use was also high; 90% indicated having a mobile phone, and of those 63% had a smart phone (Netherlands. 2011; Stork C, Calandro E & Gillwald A., 2013).

In February 2018, Pew Research Centre reported that a vast majority of Americans (95%) now own a cellphone of some kind while 77%, up from just 35% in its first survey of smartphone ownership conducted in 2011.

More than half of the people in the Netherlands consult the internet to look up health information in a time frame of three months (Central Bureau Statistics, 2011).

The situation in Africa leaves a lot more to desire. A 2007/8 African ICT access and usage survey demonstrated alarmingly little access to the Internet on the continent together with a large-scale absence of computers and smart phones and compounded by the high cost of connectivity (Africa, 2011-2012; The Pervasive Growth of GSM in Nigeria, 2003; Ani OE, 2011; Ani OE, Edem MB & Ottong EJ., 2010; Danbatta U., 2016).

Later in 2011/2012, Research ICT Africa surveyed ten African countries on household and individual ICT access and usage which revealed that mobile phone is now the key entry point for Internet usage. Internet access has increased significantly across Africa as a result increasing Internet penetration to 15.5% across the ten African countries surveyed but this is

still poor when compared with the global figure.

In Nigeria, a breakthrough in telecommunication took place in 2001 when the Obasanjo's Administration introduced a Global System for Mobile (GSM) Communication system and established the National Communication Commission (NCC) to license GSM operators in Nigeria. At the launch of Nigerian mobile telephony in 2001, there were only a few thousand lines available from the operators and services were too expensive for the average Nigerian to purchase. The following year 2002, the number of mobile subscribers stood at 1.5 million.

Since then, access to mobile electronic media and the internet has been increasing in Nigeria.

A study in 2010 to investigate the extent and level of internet access and use by undergraduates in three Nigerian universities revealed that internet was extensively used by the students but there was unequal access to the internet as students relied on private/commercial internet cybercafes. The study revealed there was poor internet infrastructure and connectivity and non-sustainable internet services in the surveyed universities.

Same researcher studied the extent/level of internet access and use among the academic staff of University of Calabar. Findings of the survey showed extensive internet use with low level of access to the internet as most of the staff accessed the internet via commercial cybercafes off campus. Only 3.08% and 1.54% could access the internet in their offices and the university library.

However, later data have shown remarkable growth in the telecommunication sector bringing with it greater access to the internet among Nigerians. At the Nigeria International Technology Exhibition and Conference 2016, it was reported that there were about 722 million mobile phones in Africa, with 127 million smartphones. The African Info Tech Consulting (AIC) reports showed that in 2016 alone smartphones gained penetration in Nigeria at about 30 percent while feature phones had a 70 percent entry. Just a year later in 2017, another report gave 94 percent penetration in Nigeria. With 91,598,757 Internet users in Nigeria in June 2017, there was a 3% growth from the 67, 101, 452 users in 2014 (Adepetun A., 2016; Internet Penetration in Africa, 2017). Data obtained from



the official website of the National Communication Commission (NCC) on its monthly subscriber data, as at in February 18 the number of active lines in Nigeria was 148, 398, 425 while the number of internet subscribers was 100, 904, 668. (National Communication Commission, 2018) In this study, we intend to obtain a local data from Enugu state, Nigeria.

Digital divide refers to inequalities between groups and countries measured in terms of access to, use of or knowledge of information or digital technology. It is a phenomenon linked not only to the topic of access to the internet, but also to the one of usage benefit. Many factors are contributory.

A good proportion of Nigerians live below the poverty line making the purchase of smart phones, computers and new digitized health devices almost impossible.

Poor internet coverage is strong militating factor. Subscription data is very expensive for the common Nigerian. Hence, patients may not be able to access vital health information.

Many people especially in developing countries like Nigeria lack the basic computer training. They may not even know how to operate smart devices and may never see the need. Most educated patients use digital technology to seek health information unlike the less or the uneducated ones. However, some educated people have poor digital literacy. They actually cannot access the internet much less use it to seek health information (IGI global disseminate of knowledge, n.d.; Eke HN., n.d.; Kontos EZ, Bennett GG & ViswanathK, 2007; Cline RJ & Haynes K M., 2001; Lenhart A, Horrigan J, Rainie L, Allen K., Boyce A & O'Grady E., 2003).

Compared with younger people, older adults have lower access to and usage of recent technologies. (Roblin D.W, Houston T.K, Allison J.J, Joski P.J & Becker E.R., 2009) In spite of the promising and distinct advantages that can be provided by technologies, many older adults do not seem ready to embrace them.

The internet, a dynamic interactive continually evolving medium has become an established source of health information for consumers and health professionals alike.

As of spring 2013, a cross-sectional clinical survey among African American parents in an urban undeveloped population showed 72% of Internet users reported looking online for health

information; 31% of cell phone owners and 52% of smartphone owners say they have used their phone to look up health or medical information while more than 87% reported willingness or interest in receiving health info online through email or in texts. The study concluded that because of its popularity among the populations, its relatively low cost, and its demonstrated efficacy in facilitating parent-provider communication and improving health behaviors, Health communication technology is uniquely well-suited for addressing pediatric health disparities and improving patient-provider communication, chronic disease self-management, and preventive health behaviors. When asked whether they were willing to participate in a postpartum Internet-based intervention delivered via mobile phone or computer, women were significantly more willing to participate via computer compared to by mobile phone.

In Ghana, a survey was carried out to investigate university students' use of the Internet for health purpose. 67.7% use Internet for health purposes, for reasons including availability and ease of accessing information, privacy, confidentiality, and affordability. 72.4% of those that sought health information online used the online health information obtained as a basis for lifestyle change and only 39.5% consulted health professionals after obtaining online information.

In Nigeria, a cross-sectional study of 205 individuals in Lagos to investigate the citizens' awareness, pattern of usage and factors influencing use of the Internet for health information for self-care indicate that 61% of the participants use the Internet for self-care and are aware of the availability of health information on the Internet. The participants also reported to have used the Internet for communication, social networking, and research and banking purposes.

To effectively reach the targeted audiences health promotion and communication activities should reflect audiences preferred formats, channels, and contexts.

Preference for channels of receiving health is dependent on certain factors—age, sex level of education, digital literacy, health status, social environment, family household characteristics.

A study of middle aged and older American women showed that older adults prefer to seek health information from healthcare providers

and traditional media compared to younger age groups. Whites seek health information less from healthcare professionals compared to non-Whites. Those residing in rural areas and those who reported more chronic conditions were significantly less likely to prefer receiving health information from the Internet. Participants who make routine visit to the physician were less likely to prefer receiving health information from the Internet or mass media. Participants with more than a high school education were more likely to prefer receiving health information from the Internet.

Another study in US investigated willingness of pregnant women to participate in an Internet-based behavioral intervention. Majority supported participation via computer but not as willing to participate via mobile phone. It may be that women use mobile phones to access specific screening or treatment information, but may not be as willing to use mobile phones for ongoing weight-management intervention. Willingness to participate in a mobile phone intervention was not dependent on age, race, income level, or having a child at home.

Many New York State residents prefer getting information from organizations on websites, while other channels such as text messages, social media, and videos are used as alternative modes of communication. Television and email are the second and third preferred modes of communication respectively, showing that even with the increased utilization of digital technologies, traditional communication channels are still viable methods for sharing information. Of note, those who were older or reported less education were less likely to prefer I websites and email.

Overall, there is paucity of data from Nigeria on the objectives of this study. The challenge here I is to get local data using a community-based survey to assess the level of access to digital I technology among Enugu residents to assess the feasibility of using digital technology to disseminate health information among this population.

## 2. Methodology

This is a community-based study that was conducted among residents of Ogui New Layout, Enugu, Enugu state, Nigeria. Ogui New Layout is a medium-income, medium density residential area interspersed with areas of commercial activity. It is located in the heart of

Enugu city, west of Enugu North local government area. The layout hosts and is surrounded by various institutions and government agencies which accounts for the heterogeneity of the residents—civil servants, traders, students and artisans. Notably, the University of Nigeria, Enugu Campus is located in the layout. Institute of Management and Technology (IMT), Enugu and Enugu State University of Science and Technology are located close to Ogui New Layout. Ogbete Main market, the largest market in Enugu and Kenyata market. Uwani are also located close to the layout. The residents are mainly Christians.

Enugu state is home to mainly the Igbo-speaking people of the southeast, Nigeria with an estimated population of 3.8 million people. It is located within the subtropical rain forest belt at the coordinates (6.5N, 7.5E) and shares boundary with Abia and Imo to the South, Ebonyi state to the East, Benue and Kogi states to the North East and Anambra state to the West.

This is a cross-sectional descriptive study to assess knowledge of digital technology, its access and use among residents of Ogui New Layout Enugu to enhance dissemination of health information.

### 2.1 Inclusion Criteria

- Participants were be residents of Ogui new Layout.
- Members of the selected houses who were available at the time of the survey and willing to participate were included.

### 2.2 Exclusion Criteria

- Children (age <15 years) of the houses were excluded.

A total of 478 participants were surveyed, but 472 were valid.

The sampling technique was multi-staged. The first stage was selection of the study area, Ogui New Layout, Enugu using simple random sampling technique. The next stage involved the selection of the first street to be sampled which was by simple random sampling technique. Systematic method of sampling was then applied to select every other street in the layout. All houses in the selected street were surveyed.

Data was collected using structured self-administered questionnaire. The questionnaire was partly designed by the

researchers and partly an adaptation from similar work done among New York state residents.

A pilot survey was conducted in Amaechi Awkunanaw, Enugu. The observations and corrections made from the pre-test were used to modify the final instrument.

- Demographic information included age, sex, education level, marital status, occupation and number of hospital visits within the last twelve months.
- Knowledge of digital technology was assessed by questions requiring the respondents to identify the components of digital technology and the various tasks performed with the aid of digital devices.
- The survey measures of mobile and Internet technology access and utilization were adaptations from a similar work done among New York State residents which included multiple-choice questions covering topics such as ownership of electronic devices, Internet access and usage, mobile phone plans, and utilization of mobile phone features, such as mobile Internet and email, text messages.
- In addition, added questions structured to assess respondents' knowledge about seeking health information via digital technology and their preferences for receiving health information.

Collected data were pooled and analyzed digitally using the Statistical Package for the Social Sciences (SPSSv23). Descriptive statistical results were obtained using the software. Group differences were analyzed using Chi-square test. A p-value of  $< 0.05$  was set as a criterion for establishing statistical significance.

### 2.3 Ethical Consideration

Approval to conduct the study was obtained from the Health Research Ethics Committee of the University of Nigeria Teaching Hospital, Ituku-Ozalla.

Informed consent was obtained from the respondents and they were assured of confidentiality and anonymity.

### 2.4 Limitations and Challenges

In the course of the study, we encountered the following challenges and limitations:

- People were not willing to participate in the

study. We did a lot of explanations to convince people to participate. Besides, some of the respondents were not willing to respond to some of our questions.

- Due to time constraint and lack of fund, we resorted to self-administered questionnaire. Otherwise, telephone/online interview would have been employed to study the whole of Enugu state.

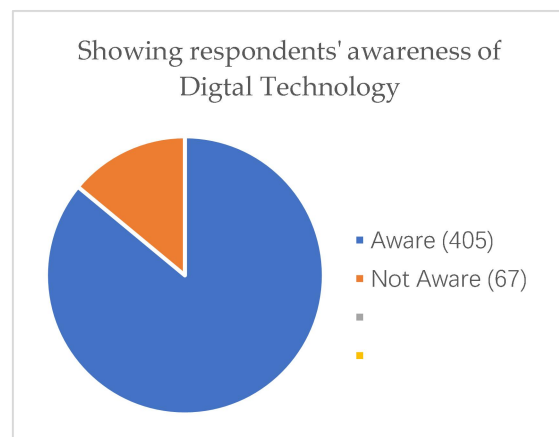
## 3. Results

### 3.1 Socio-Demographic Characteristics of Respondents

**Table 1.** Showing age distribution of the respondents

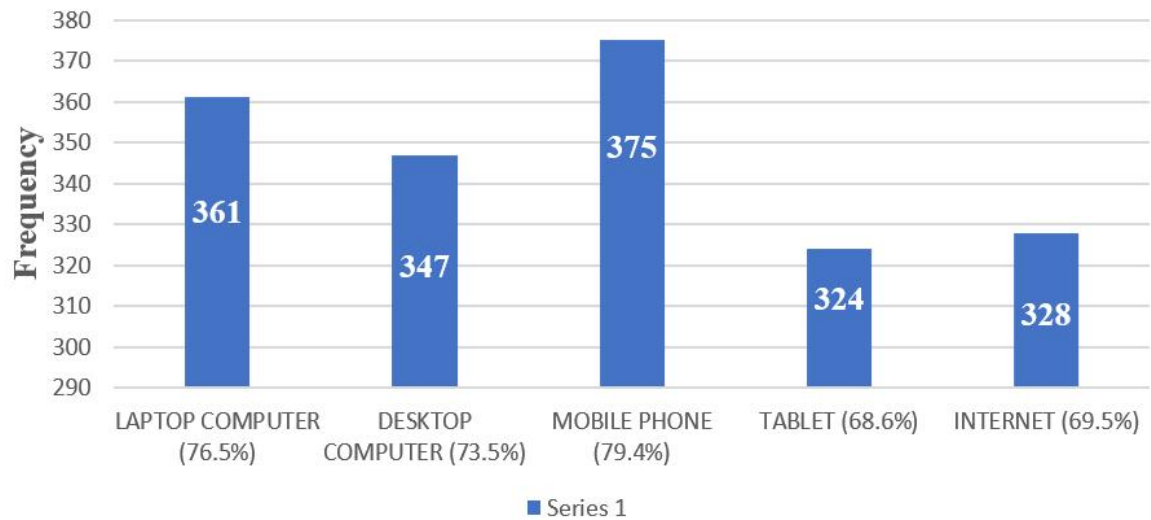
| Age   | Frequency | Percentage |
|-------|-----------|------------|
| 15-24 | 100       | 21.2       |
| 25-34 | 112       | 23.7       |
| 35-44 | 109       | 23.1       |
| 45-54 | 91        | 19.3       |
| 55-64 | 41        | 8.7        |
| 65-74 | 19        | 4.0        |
| Total | 472       | 100.0      |

Table 1 above shows the age distribution of the respondents studied. Most of our respondents the age range of 25-34 years while those in the age range of 65-74 years were the least.

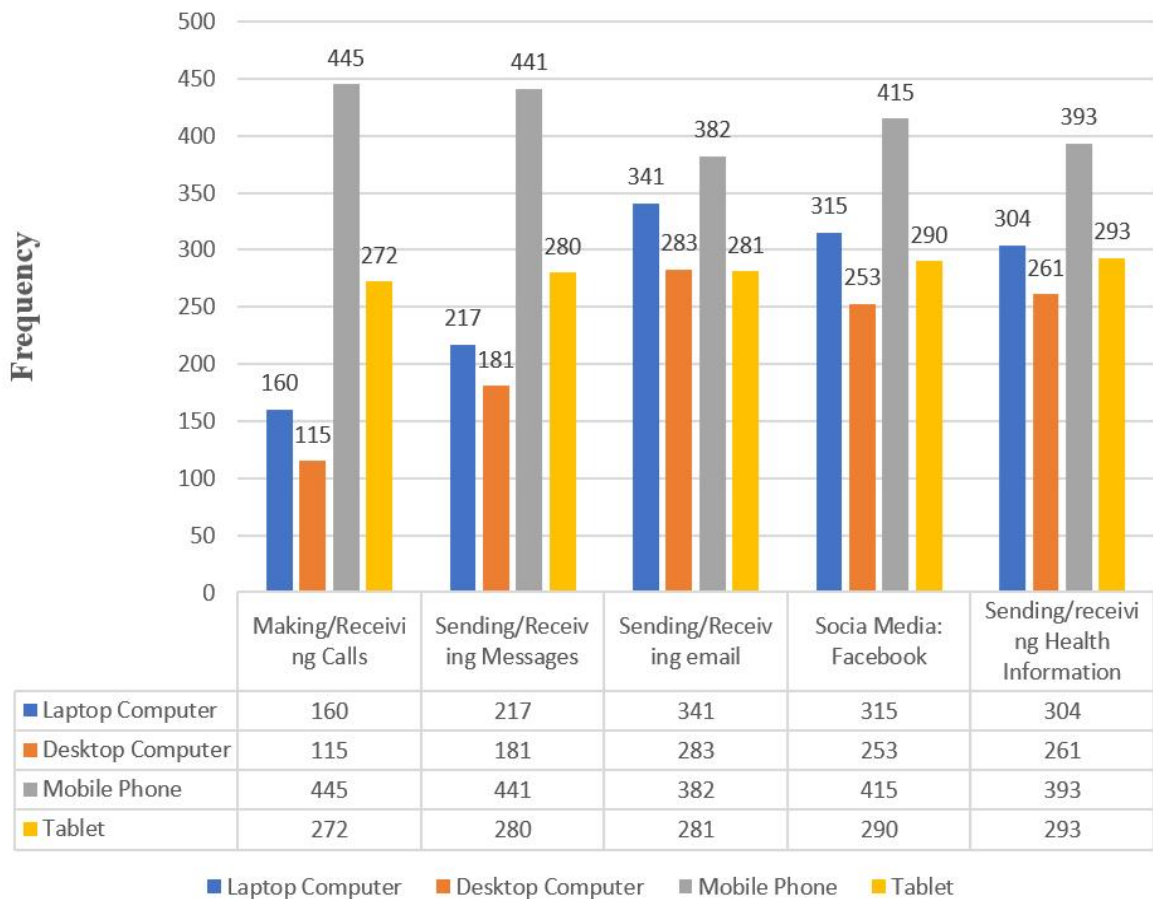


**Figure 1.** Knowledge of digital technology among respondents

Figure 1 above shows that 405 (86%) of the respondents were aware of digital technology while 67 (14%) were not aware of it.

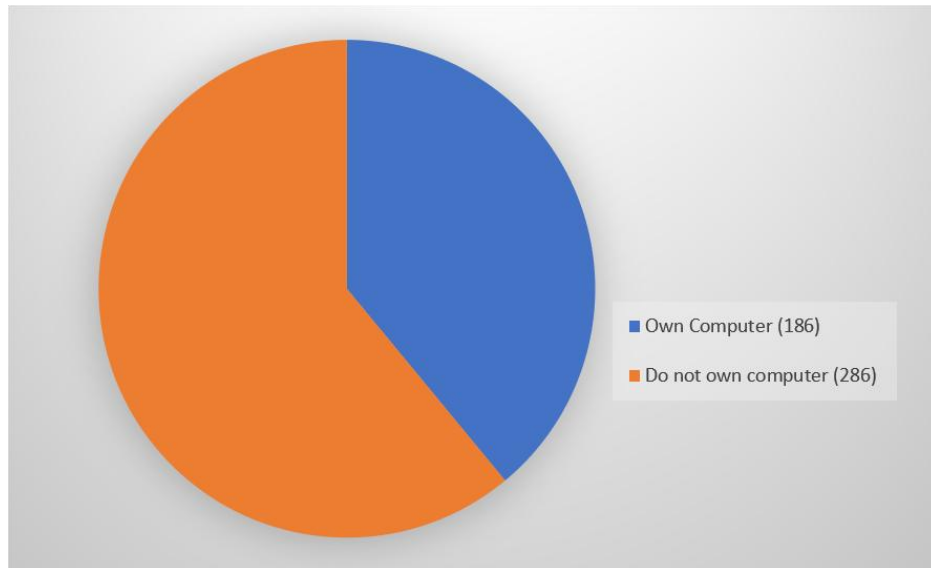


**Figure 2.** Showing respondents' knowledge of the constituents of Digital Technology

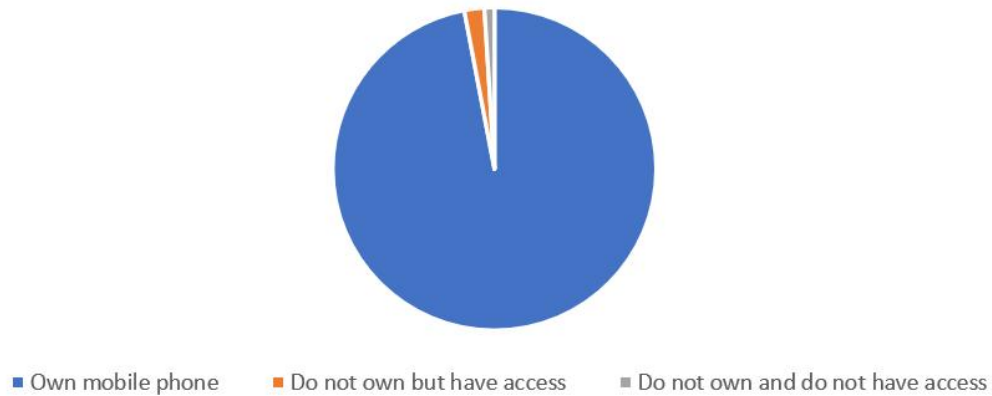


**Figure 3.** Showing respondents' knowledge of the tasks performed with digital devices

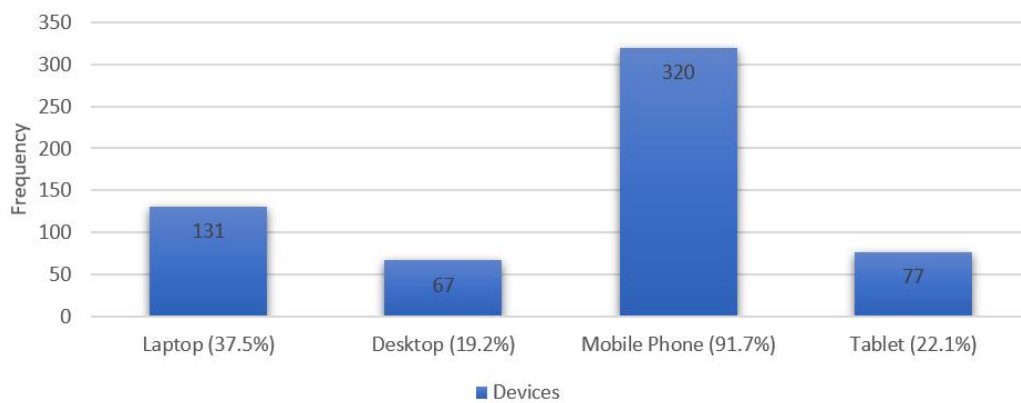




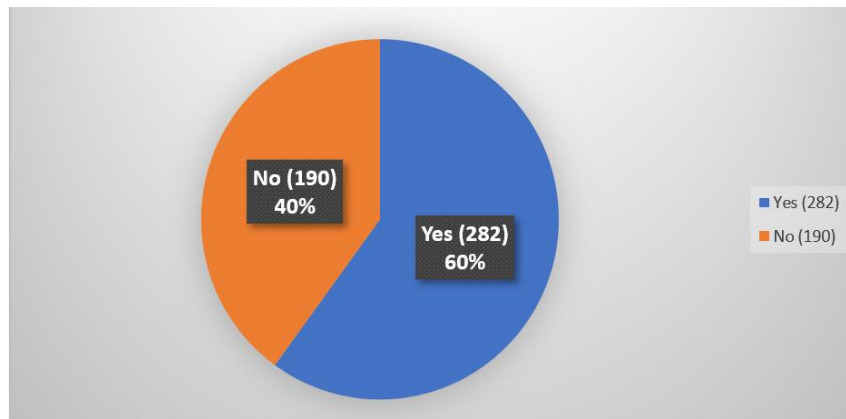
**Figure 4.** Showing respondents' ownership of a working computer



**Figure 5.** Showing respondents' ownership of mobile phone



**Figure 6.** Showing devices used by respondents to access the internet (N=349)



**Figure 7.** Showing respondents who sought health information using digital media channels

#### 4. Discussion

Data obtained from our studies suggest a high level of awareness of digital technology among residents of Ogui New Layout, Enugu. Not only did a greater proportion (86%) indicate being aware of digital technology, but at least 68.6% were also able to identify the constituents of digital technology. There is dearth of information on previous assessment of awareness of digital technology among populations of people. In this work, however, we deemed it necessary to assess the awareness of digital technology among our study population as a basis to then assess their access and usage of digital technology to enhance dissemination of health information.

Mobile phone ownership was very common with most of the respondents (91%) indicating they owned a mobile phone while 2% did not own but had access to it through friends and relations. Only 1% did not own nor have access to mobile phones. Smartphone ownership was also found to be high (77%). However, access to computers among the respondents was low (39%). Similar work among New York state residents indicated high mobile phone ownership but in contrast to our findings, there was high ownership of computers among New York residents. (Manganello JA, Gerstner G, Pergolino K, Graham Y. & Strogatz D., 2017) This may be explained by high cost of computers in Nigeria perhaps due to exchange rates.

Furthermore, level of access to the internet was found to be high among our study population (74%). Our findings suggest that people aged 15-24 years have highest internet access (95%). This is much higher than previous description of

67% access to the internet among same age range in developing countries and closer to 94% access among same age group in developed countries. (International Telecommunication Union, 2017) This is probably because the figures given represent a pooled data of individual countries. Besides, there are varieties of cheaper smartphone that serve the African market making internet available to both the rich and the poor.

From our findings, 91.7% of those who had internet access did so via their mobile phones while 19.2% accessed the internet using desktop computers. This represents an improvement on the findings of a similar study in 2010 among academic staff of a Nigerian university which showed that only 3.08% and 1.54% could access the internet in their offices and university library. (Ani OE, Edem MB & Ottong EJ., 2010) This highlights how growth in the mobile phone market has greatly increased access to the internet among Nigerians.

There are some differences across demographics with regards to digital technology access. People aged 15-24 years were more likely to have access to computers, mobiles phones and the internet than the rest of the population. Access to these were found to be least among respondents in the age range of 65-74 years. The young are more adventurous and are more likely to own phones and computers to engage in social interactive fora on the internet. Moreover, the young are in the prime of their education and require digital gadgets for their academic work.

Access to digital technology was also found to be higher among the educated population and among the various occupations, it was found to be high among civil servants and students. This

is consistent with previous descriptions of determinants of digital technology access (Cline RJ & Haynes K M., 2001; Lenhart A, Horrigan J, Rainie L, Allen K. Boyce A & O'Grady E., 2003; Roblin D.W, Houston T.K, Allison J.J, Joski P.J & Becker E.R., 2009; Asibey BO., Agyemang S & Dankwah AB., 2017; Oyelami O, Okuboyejo S & Ebiye V., 2013; Metzler, C. Sanders, M., Rusby, J. & Crowley. R., 2012; Bergeron CD, Ory M, Goltz HH, Towne SD. Ahn S., 2017; Jacobs, W., Amuta, A. O., & Jeon, K. C., 2017; Urrutia RP, Berger AA, Ivins AA, Beckham AJ, Thorp JM & Nicholson WK., 2015; Lwanga S & Lemeshow S., 1991; Rea L & Parker R., 1997) and explained by the fact that digital literacy is higher among the educated, students and civil servants.

Despite the high level of access to digital technologies among residents of Ogui New Layout, Enugu, our findings suggest there are many variations in what they do with their digital devices and media.

Several times a day, a good proportion of the respondents used their digital devices to visit social media sites, to send/receive text messages and used the search engines to seek information on various subjects. However, 60% use their digital devices to seek health information; most do so less than once a week. This could be as a result of little awareness of a wealth of health information on the internet. Some however fear the credibility of such information gotten via digital channels.

Among respondents who use the internet, 59.6% seek health information on the internet. This is low when compared with findings from a work among African American parents in an urban undeveloped population which showed 72% of Internet users looking online for health information. This difference could be attributed to the less awareness of the possibility to access such information in our environment or the fact that most people prefer face to face information than what is read online.

Health information seeking via digital technology was found to be highest among people aged 15-24 years and people who attained tertiary level of education. This is probably because those within this age group are more exposed to technology and are mostly students hence their exposure enables them to use digital technology extensively and indirectly increases their ability to seek health information through digital technology.

92% of our respondents indicated willingness to communicate with their doctor via digital channels. However, when asked their preferred means of receiving health information, the traditional face-to-face consultation with health professionals was their most preferred. The use of digital technology, such as mobile phone communication and websites ranked fourth and fifth respectively. Communication with health professionals via email was their least preferred channel.

These findings differ much from reported preference for getting health information from websites followed by television, then email by New York state residents. (Internet Penetration in Africa, 2017) This disparity could be due the fact that there is less emphasis or education about the benefits and the ease of access of information about the uses of digital technology in the health sector in our area of study.

## 5. Conclusion

In drawing conclusion from this work, we recognize that technology is an evolving phenomenon and our findings represent the local situation of digital technology access and use among Ogui New Layout residents. However, it is an important step in exploring media and technology use for public health purposes at least at the level of the state.

Our impression that there is high awareness of access to and usage of digital technology among our respondents. Data obtained from our study therefore show promising evidence for leveraging the potentials of digital technology to improve Nigeria's health sector.

Given high access to ICT and utilization of its features as established in this work among our respondents for both health and non-health related activities, digital channels can be an effective means of facilitating healthcare and health promotion interventions among the people.

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