

Full Length Research

Health Information Accessibility through the Lens of Portable Technologies: Experience of Librarians in Osun State, Nigeria

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Accepted 18 January 2021

Objectives: This is an exploratory study that focused on identifying the contemporary health related information needs of librarians in Osun State; types of mobile technology used for accessing health related information as well as identifying challenges experienced in using mobile technology for accessing health related information.

Methodology: This is a descriptive survey study of 133 Librarians in Osun State, Nigeria. Total enumeration of all the population was adopted. From the total 133 questionnaires that were administered, 126 (representing 94.74%) were duly completed and used for analysis. Frequency counts and percentage calculation were used to analyse the quantitative data, while thematic description was used in analyzing the qualitative data collected.

Findings: The study discovered that information on COVID-19 (77.8%); nutrition (66.7%); and physical fitness (66.7%) were the most sought information by the respondents. Majority (94.4%) of the respondents accessed health-related information using their smartphones. Also, the majority of the respondents mostly seek for health related information through Whatsapp (83.3%) and Facebook (61.1%). Poor internet service and difficulty in trusting the credibility of the online sources (83.3% each) were the two major barriers faced by the librarians in using mobile technology for accessing health related information.

Recommendations: Librarians need to explore other electronic health information sources rather than concentrating on social media; there is the need for increased knowledge of librarians on online information searching strategies and also, there is need for improved internet services provision by the operators.

Originality: This study identified contemporary health related information needs of librarians in Osun State, Nigeria and electronic information sources frequently used and preferred. These findings will be instrumental in meeting the health information needs of the librarians by the concerned and relevant stakeholders. This study is also an additional contribution to existing literature in the area of health related information seeking among librarians.

Keywords: Mobile technologies, health-related information, librarians, COVID-1

Cite this article as: Oladapo, Y. O., Opele J.K., Adeoye, M.O., Amusan, B.B (2021). Health Information Accessibility through the Lens of Portable Technologies: Experience of Librarians in Osun State, Nigeria. *Inter. J. Acad. Lib. Info. Sci.* 9(1): 62-72

INTRODUCTION

Librarians like their counterparts in other disciplines have high health information that need to be adequately satisfied (Adewara, Opele, Oyewumi, & Abdurraheem, 2019). Health information need of librarians may include those information related to drugs administration, disease prevention and treatments as well as, medical counseling which can be accessed through electronic and portable platforms such as e-mails, YouTube, e-journals, websites, mobile/ Web Applications and Social media (Awogbami, Opele & Chibueze, 2020). Librarians are among top information users in the society in addition to their roles as information managers. However, while seeking for health information with a view to better their health and wellbeing (Opele, 2017); they also have preference for portable devices used for information accessibility. The recent global outbreak of COVID-19 pandemic and the attendant lockdown and social distancing guidelines have further raised public consciousness of the power of portable technologies in health information seeking and sharing of information among people of diverse social and political class (Opeke & Opele, 2014; Favale, Soro, Trevison, Drago & Mellia, 2020).

People of all ages have sought information from various sources such as on radio, television and from the traditional medium such as story telling from time immemorial though not without some notable barriers (Opele, Adepoju, & Adegbite, 2020). However, in recent years, media users including Librarians now have preference for those information sources driven by portable technologies that can gratify their information seeking ability and use. Thus, having access to the right health information will not only assist the librarians in improving their health-related decision making activities, but will also enhance their physical fitness to be able to discharge their duties efficiently. Apart from serving as information purveyors, librarians themselves need information for personal use and more often than not, they rely on portable technologies to access such health related information (Awogbami, Opele & Awe, 2020). These technologies have been more utilized in the last one year that was characterized by a global health emergency orchestrated by the outbreak of the COVID-19 pandemic. The global paradigm shift has demanded that meetings be conducted via these portable technology such as on zoom, google meet, google classroom among others which are instrumental in conducting seminars, conferences receiving and sharing of information due to the lockdown and social distancing policies associated with the outbreak of the COVID-19 pandemic (Nash, 2020).

This global concern has necessitated people to maximize the power of the various portable devices to access and share health related information with a view to taking certain health related decisions that are

germane to the prevention of the spread of the deadly coronavirus (Awogbami, Opele & Lawal, 2020). People's health related information is generally multifarious and highly complex due to human diversities, however, the use of portable technologies have now replaced the traditional hospital visitation for medical diagnosis, treatment and health counseling. The opportunities associated with the use of portable technologies such as smart phones and laptop computers for accessing information are limitless and need to be thoroughly annexed for health related information sharing, dissemination and use.

Statement of the problem

The job of a Librarian in many knowledge institutions such as the universities, polytechnics and colleges of education, is multi-faceted. As such librarians need to be healthy to perform their duties as expected. They need to make use of the portable technologies to access information for personal use and development which are essential to their performance. However, lack of information searching skills and sometimes low level of use of portable and mobile technologies hinders librarians' ability to access necessary health related information in many developing nations like Nigeria (Lazer, 2018; Talwar, Dhir, Singh, Virk and Salo, 2020). Besides, the availability of fake news on social media can also affect librarians' use of mobile technologies for accessing health related information. Till date, there is a dearth of literature on the contemporary health information needs of Librarians in Osun State, Nigeria. Thus, there is a need to ascertain the extent to which librarians in Osun State are making use of electronic information via portable technologies that are found in their numbers in different shapes and sizes to access health related information. Similarly, there is a lack of empirical literature on the perceptions of librarians about the use of mobile technologies while accessing health related information and the challenges associated with the use of portable technologies. It is against this backdrop that this study was conducted to assess the use of portable technologies for accessing health related information among librarians in Osun State, Nigeria.

Research objective

The general objective of this study was to ascertain the extent to which Librarians' are making use of portable technologies for accessibility health information in Osun State, Nigeria. The following specific objectives were proposed:

1. Identify the contemporary health information needs of librarians in Osun State, Nigeria.

2. Identify types of mobile technologies used for accessing health related information among the librarians in Osun State.
3. Determine the commonly preferred electronic sources where librarians in Osun State access health related information.
4. Identify the perceptions of librarians in Osun State towards the use of mobile technologies for accessing health related information.
5. Identify the challenges experienced by librarians in Osun State in accessing health related information through mobile technologies.

Research questions

The study is set to provide answers to the following questions:

1. What are the contemporary health information needs of librarians in Osun State?
2. What types of mobile technologies are used for accessing health related information among the librarians in Osun State?
3. What are the commonly preferred electronic sources where librarians in Osun State access health related information?
4. How do the Librarians perceived the use of mobile technologies for accessing health related information in Osun State?
5. What are the challenges experienced by librarians in Osun State in accessing health related information through mobile technologies?

Review of related literature

Portable technology refers to the hand-held or mobile devices such as smart-phones, tablets, laptops and wearable smart watches, useful for accessing and sharing information. They are digital devices that are internet enabled and can be used anywhere. There has been an increase in the acceptability and use of mobile technologies, especially in the last decade (Verma & Sheth, 2018; Awogbami, Opele, & Chibueze, 2020). Mobile technology can be described as hand-held or mobile devices such as smart-phones, tablets, laptops and wearable smart watches etc, useful for accessing and sharing information. Mobile technology can also be described as digital devices that are internet enabled and can be used anywhere. Ciaramitaro (2011) and Vishnuvardhan and Baira (2017) observe that mobile technology has evolved over the years to transcend beyond the traditional voice communication gadget to a tool used for accessing the internet, play games, create and share texts, videos and images. Mobile technology is used for sending and receiving instant messages on the go.

According to Kitikannakorn and Sitthiworanan (2008), health –related information are messages or information that reduce the uncertainty that are associated with an individual's health status and can improve an individual's confidence on issues relating to health. This means that health-related information can be described as information or messages that assist in reducing the uncertainty level of individuals in relation to their physical, mental, social or emotional well being. According to Niederdeppe et al (2007), health-related information alters individuals' knowledge and promotes making informed health decisions that have implications on our daily lives. This implies that accessing health-related information improves one's knowledge to be able to make informed decisions on issues that pertain to health. Other benefits of seeking for health related information include living a healthy life and complying with medications.

Health related information needs vary, depending on the individual seeking such information and the context or condition warranting such need. Health-related information may include locating treatments for diseases, seeking for alternative treatment methods, nutrition and physical fitness activities, sexual/ reproductive health, mental health etc. (Niederdeppe et al, 2007; Kitikannakorn and Sitthiworanan , 2008; Obasola & Agunbiade, 2016). Using mobile technology to access health-related information has a number of benefits and limitations. The benefits are associated with the limitless opportunities provided by mobile technologies. These include easy accessibility, timeliness, and multiple information sources to choose from (Maon, Hassan and Seman, 2017). Limitations of using mobile technology in accessing health related information also abound. Notable among these is the trust issue as there are so many mis-information or fake news that may be widely circulated through online platforms, especially the social media. Lazer, 2018; Talwar et al, 2020). In a related study, Hesse, Nelson and Kreps (2005) pointed out that health information from physicians remains the most highly trusted sources among adults in the USA because such information are products of empirical observation and experience.

Hesse, Nelson and Kreps (2005) note that increased use of mobile technology has greatly improved the amount of health information available and accessible to the information users. Although, there are multifarious media and sources through which health-related information could be sought, however, more people are turning to the Internet and other several online sources to search for health related information (Williams, Nicholas & Huntington , 2003; Maon, Hassan & Seman, 2017) . While this may be attributed to what Alwehaibi and Almeman (2014) describe as easy accessibility of mobile technology which has increased the global availability and use of health-related information sources; other contemporary factor may include the global outbreak of COVID-19 and the attendant lockdown and physical

distancing policies which has forced many people to seek for information online, more than before (Favale et al, 2020 and Nash, 2020).

In using mobile technology for accessing health related information, the user's experience matters. Boyer, Provost and Baujard (2012) claimed that experience in using the internet plays a vital role because the more experienced a person is, the more likely to use the sources available through the Internet. Lin (2002) equally observes that age could also play a pivotal role in the use of mobile technology. He claims that people of younger age are more likely to use the technology than the adults. This is corroborated by Horgan and Sweeney (2012) that youth in Ireland use the Internet more often to search for health related information. Although there is dearth of literature on the use of mobile technology for accessing health-related information among librarians, a similar study by Folorunso (2018) was found. He investigated health information seeking behaviour of librarians in two academic libraries in Ondo State, Nigeria. He discovered that Radio, Internet and Facebook topped the list of sources where the librarians seek for health-related information. Therefore, this study will contribute to scholarly literature in the area of health related information seeking among librarians.

METHODOLOGY

This study adopted survey research design. The population consisted of 133 librarians in Osun State being a branch of the Nigerian Library Association. Total enumeration technique was adopted in this study. In the

process of data collection, email and mobile contacts of the respondents were obtained from the state executive members of the Nigerian Library Association which cut across the 30 local government areas in the three senatorial districts of the state. Data collection was done via Online-google-form which was sent to each participant via the association online platforms. Out of the 133 questionnaires administered, a total of 126 (94.74%) were adequately completed and returned for data analysis. Frequency counts, percentage distribution and relative importance index (RII) were used to analyze the retrieved data. Specifically, data analysis was done by means of Statistical Package for Social Sciences (SPSS) version 24. Data presentation was done using frequency tables and percentage distribution, figures and charts respectively. The relative importance index helps to rank the criteria according to their relative importance. The following formula is used to calculate the relative importance index.

$$R.I = \sum \frac{W}{A*N} \quad \text{or} \quad RII = \text{Sum of weights} \frac{W_1 + W_2 + W_3 \dots + W_n}{A*N}$$

R.I. = or RII

Where:

W is the weighting as assigned by each respondent on a scale of one to five, with one implying the least and five the highest. A is the highest weight and N is the total number of the sample. Based on the ranking (R) of the relative Importance Index (RII), the weight average of the two groups will be determined. According to Akadiri (2011), five important levels are transformed from (RII) values: H(H) ($0.74 \leq RII \leq 1$), High-Medium (H-M) ($0.69 \leq RII \leq 1$) and low (L) ($0.59 \leq RII \leq 1$).

RESULTS

Analysis of Demographic variables

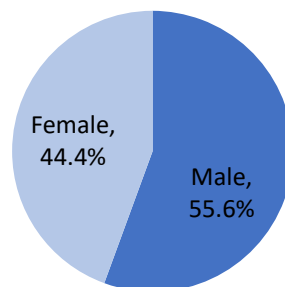


Figure 1. Gender distribution of respondents

Figure 1 it indicated that majority 55.6% of the respondents were male, while 44.4% were female.

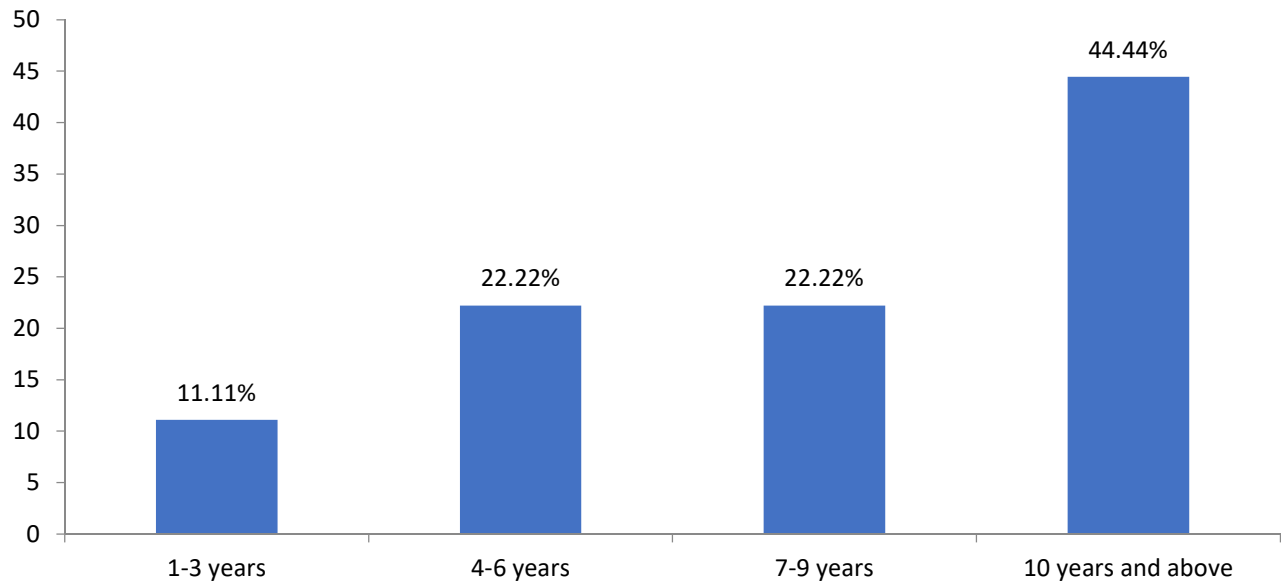


Figure 2. Distribution of respondents according to years of working experience as a Librarian

Figure 2 indicated that 44.4% of the Librarians had worked for 10 years and above. Also, 22.2% had worked for 4-6 years and 7-9 years respectively. Only 11.11% claimed to have between 1-3 years working experience. This shows that all the respondents have relative years of working experience.

Analysis of research questions

Research question 1: What are the contemporary health information needs of librarians in Osun State?

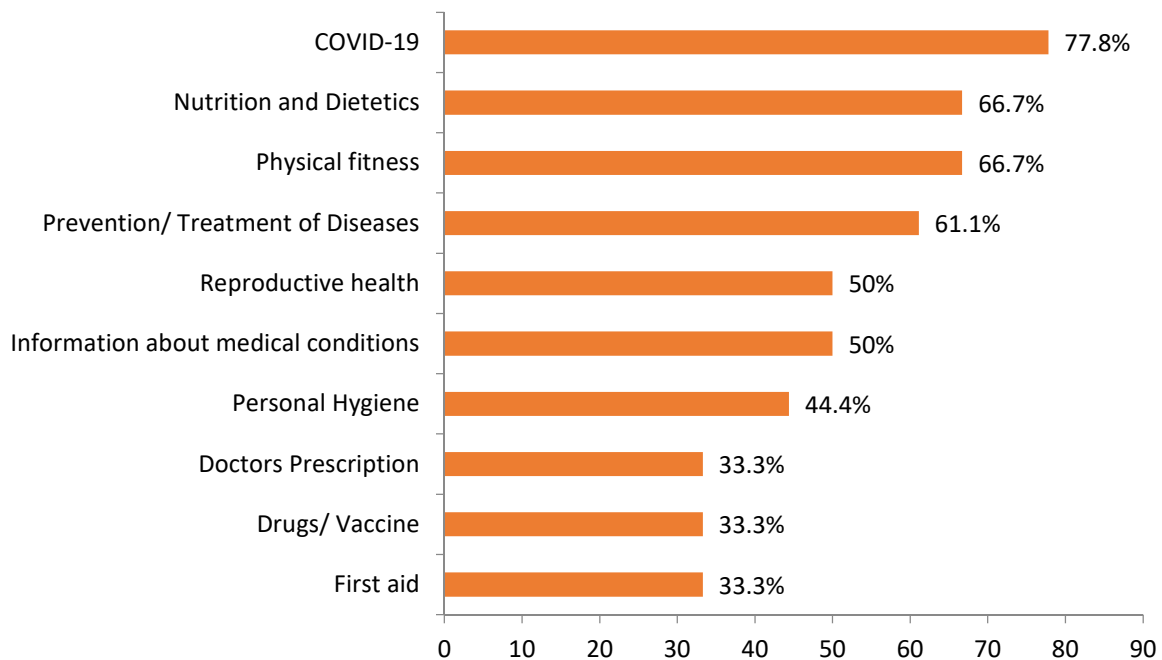
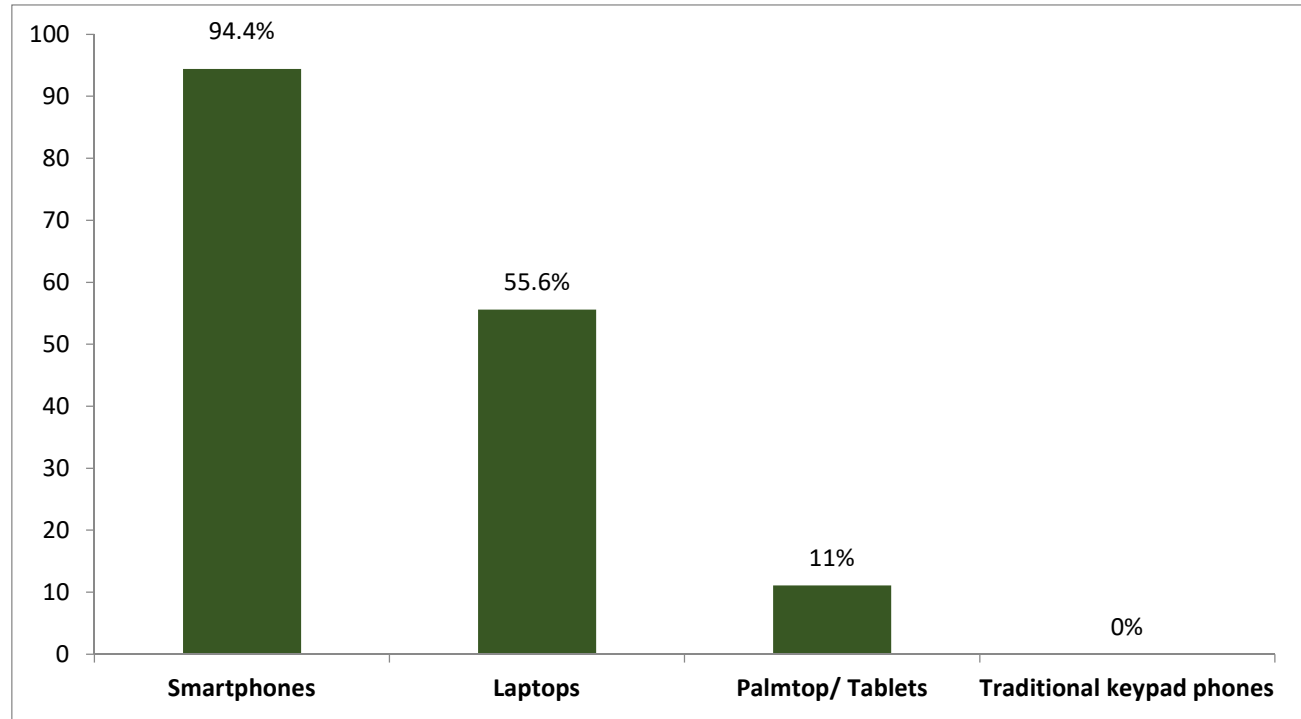


Figure 3. Contemporary health information needs of librarians in Osun State

Figure 3 shows the contemporary health information needs of the respondents. The topmost health information need of the respondents is on COVID-19 (77.8%). This is followed by information on nutrition and dietetics; and physical fitness (66.7%). The next is information on prevention/ treatment of diseases (61.1%), while 50% each for reproductive health and medical conditions and 44.4% on information about personal hygiene. The 3 least health information needs of the respondents were information on doctors' prescriptions; drugs/ vaccine; and first aid (33.3% each).

Research question 2: What types of mobile technologies are used for accessing health related information among librarians in Osun State?



n= 126

Figure 4. Types of mobile technologies used for accessing health related information among the librarians in Osun State (n= 126)

From Figure 4, it is clear that majority (94.4%) of the respondents claimed that smart phone is the primary gadget used in accessing health related information. This is followed by 55.6% who claimed to also use laptops for the same purpose and 11% who used palmtop/ computer tablets. No respondents claimed to use the traditional keypad phones. This implies that the respondents are conscious of the new developments in mobile technologies as they use internet-ready smart phones robustly.

Research question 3: What are the commonly preferred electronic sources (apps/sites) where librarians in Osun State access health related information?

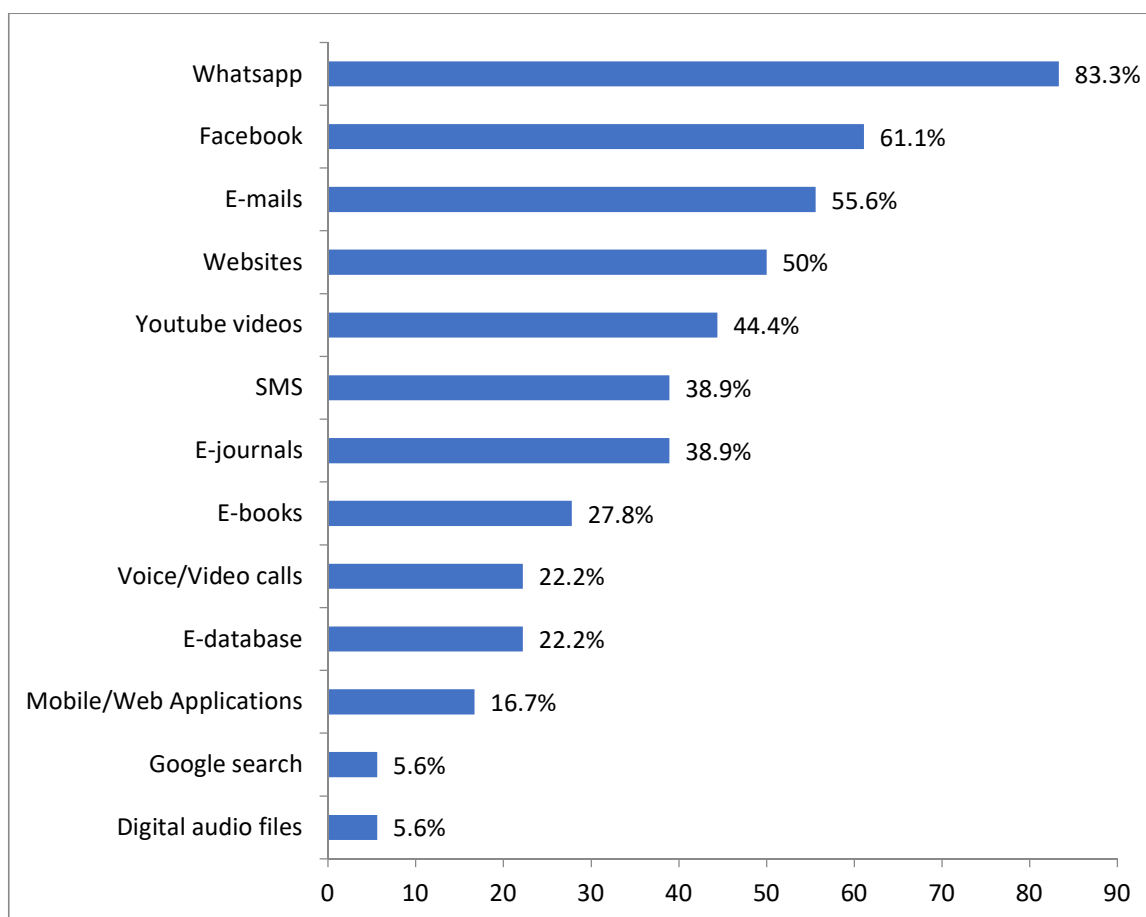


Figure 5. Commonly preferred electronic sources where librarians in Osun State access health related information (n = 126)

Figure 5 shows various electronic sources of health related information accessibility. Majority (83.3%) claimed to use WhatsApp as the most preferred source of health related information. This is followed by Facebook (61.1%); E-mails (55.6%); and websites (50%). Some 44.4% use YouTube videos while 38.9% claimed to use SMS and e-journals respectively. Only a small fraction of 5.6% claimed to use Google Search and digital audio files, respectively.

Research question 4: How do the Librarians perceived the use of mobile technologies for accessing health related information in Osun State?

Table 1. Perceptions of librarians in Osun State towards the use of mobile technologies for accessing health related information (n = 126)

SN	Perceptions	Agree	Disagree	RII	Ranking
1	Mobile technologies are easy to use	126 (100%)	0	1.00	1st
2	Information is available at any time	126 (100%)	0	1.00	2nd
5	Easy sharing of information	126 (100%)	0	1.00	3rd
6	Easy access to health related information	126 (100%)	0	1.00	4th
7	It saves time	126 (100%)	0	1.00	5th
3	Up to date information	119 (94.4%)	7 (5.6%)	0.97	6th
9	Access to multiple health information sources	119 (94.4%)	7 (5.6%)	0.97	7th
4	Satisfy information need	112 (88.9%)	14 (11.1%)	0.94	8th
15	Youth are more likely to use mobile technologies than the adults	105 (83.3%)	21 (16.7%)	0.92	9th

Table 1. continues

14	Mobile technologies offer too many unreliable information sources	84 (66.7%)	42 (33.3%)	0.83	10th
12	Mobile technology offers lots of misinformation	77 (61.1%)	49 (38.9%)	0.81	11th
8	Information authenticity is easy to verify	70 (55.6%)	56 (44.4%)	0.78	12th
11	Too much of information makes navigation difficult	56 (44.4%)	70 (55.6%)	0.72	13th
10	Mobile technology wastes time	49 (38.9%)	77 (61.1%)	0.69	14th
13	Mobile technologies are difficult to use	28 (22.2%)	98 (77.8%)	0.61	15th

Source: field survey 2021

Table 1 shows various perceptions of the respondents towards the use of mobile technologies for accessing health related information. From the Table, majority of the respondents have positive perceptions about the use of mobile technologies. All the respondents agreed that mobile technologies are easy to use in accessing health related information; and it makes information available at any time, as well as facilitating easy access to and sharing of health related information. Also, 94.4% claimed that mobile technologies give up-to-date information while 88.9% claimed that it satisfied their information needs. Also, majority (94.4%) of the respondents claimed that mobile technologies offer access to multiple health information sources. However, the respondents had some negative perceptions about the use of mobile technologies. 66.6% claimed that mobile technologies offer too many unreliable information sources, while 61.1% also claimed that mobile technologies offer lots of misinformation. 44.4% claimed that too much of information offered by mobile technologies makes difficult. Also, the age factor relating to the use of mobile technologies also surfaced as majority (83.3%) are of the perception that youth are more likely to use mobile technologies than the adults.

Research question 5: What are the challenges experienced by librarians in Osun State in accessing health related information through mobile technologies?

Table 2. Challenges experienced by librarians in Osun State in accessing health related information through mobile technologies (n = 126)

SN	Challenges	Agree	Disagree	RII	Ranking
1	Low bandwidth/ poor internet connectivity	105 (83.3%)	21 (16.7%)	0.92	1st
6	Difficulty in trusting the credibility of the online sources	105 (83.3%)	21 (16.7%)	0.92	2nd
2	Poor information searching skills	70 (55.6%)	56 (44.4%)	0.78	3rd
8	Difficulty in navigating through online sources	56 (44.4%)	70 (55.6%)	0.72	4th
5	High cost of accessing information online	49 (38.9%)	77 (61.1%)	0.69	5th
4	Difficulty in reading on-screen	42 (33.3%)	84 (66.7%)	0.67	6th
3	It wastes time	21 (16.7%)	105 (83.3%)	0.58	7th
7	Fear of using mobile technologies	14 (11.1%)	112 (88.9%)	0.56	8th
9	Frequent technological changes	7 (5.6%)	119 (94.4%)	0.53	9th
10	Erratic power supply	12 (9.5%)	114 (90.5%)	0.55	10th

Source: field survey 2021

Table 2 indicates various challenges experienced by the respondents in using mobile technologies for accessing health related information. Majority (83.3%) claimed that they experienced low/poor internet connectivity and also difficulty in trusting the credibility of the online sources. Some 55.6% claimed that poor information searching skills is a major challenge, while 44.4% experienced difficulties in navigating through online health information sources. Also, while 38.9% claimed that high cost of accessing information online is a challenge, some 33.3% claimed that they find it difficult to read on-screen.

DISCUSSION

The finding revealed that most common health information needed by the respondents was COVID-19, this was closely followed by information on nutrition and

dietetics; and physical fitness. This is in line with Obasola and Agunbiade (2016). They discovered that many undergraduate students in Nigeria seek information on nutrition and physical activities, among others. COVID-19 is a novel global health emergency of which scientists are

still struggling to study. Therefore, finding revealed that respondents are also curious about knowing more about this novel health challenge. This is in line with Bento et al (2020) discovery that searches for information on COVID-19 increased by around 36% after the index case was announced. Also, information needs on nutrition and dietetics and physical fitness which ranked higher may be connected with the period of data gathering for this study. The data collection coincided with the period that the government asked many of the workers from levels 1 to 12 to work from home. This may influence their need to seek information on healthy feeding habits and physical fitness as they are expected to be at home for longer periods of time. However, this finding contradicts Alwehaibi and Almeman (2014) who discovered that patients in Qassim Province, Saudi Arabia mostly seek information on diseases and medication.

The study found that respondents mostly make use of smart phones to access health related information, whereas none of the respondents made use of the traditional keypad phones for the same purpose. This is similar to Verma and Sheth (2018) discovery that the majority of the postgraduate physiotherapy students of some Colleges in Gujarat, India, used smart phones to access healthcare information. This implies that respondents were in tune with the current global reality in making use of current technologies for accessing needed information.

The study discovered that social media (Whatsapp and Facebook) were the two most preferred sources of accessing health related information, followed by emails. This is similar to Folorunso (2018); Opele, Omole, & Adebayo,(2019) who published that the Internet and Facebook were among the top three health related information sources mostly used by librarians in Ondo, Nigeria. Also, this study discovered that many of the respondents claimed that they preferred social media to other electronic sources because it provided them with the ease of accessibility. This is in line with Montemurro, Porcnik, Heden and Otte (2015) and Tajudeen, Jaafar and Sulaiman (2016) discovery that easy accessibility is a major precursor to social media use among information seekers. This implies that easy accessibility of social media contributed to its high level of use among the respondents.

Majority of the respondents had positive perceptions towards the use of mobile technology in accessing health related information. They emphasized the strength of mobile technology in managing information viz: speed, round-the-clock access, mobility, easy usage, easy accessibility, up-to-date and easy sharing of information. However, many of the respondents claimed that mobile technology offered a lot of misinformation and too many unreliable information sources. The trust issue/ misinformation and credibility of online information sources have been issues of global concern (Lazer, 2018). This finding implies that the respondents are

conscious of these developments as part of their duties to fight misinformation. Also, the majority of the respondents are of the belief that youth are more likely to use mobile technology than adults. This is supported by Lin (2002) findings who discovered that people who claimed to use mobile technology are typically younger.

There are different challenges experienced by the respondents in making use of mobile technologies for accessing health related information. Poor internet connectivity and difficulty in trusting the credibility of the online health information sources were the two most common challenges. Poor internet connectivity experienced by the respondents is similar to Verma and Sheth (2018) findings where majority of the postgraduate physiotherapy students of some Colleges in Gujarat, India claimed that low internet bandwidth is a major barrier to the use of smart phones. Difficulty in trusting the credibility of online health information sources is also in line with Alwehaibi and Almeman (2014) who discovered that many of patients in Qassim Province, Saudi Arabia also experienced mistrust of online health information a major barrier. Also, 55% of the respondents claimed that they lack required skills to search for health related information using mobile technologies. This is similar to Emiri (2015) discovery that many librarians in Universities in Edo and Delta States Nigeria rated their level of digital proficiency to be low. This indicates a gap which needs to be met by training of the respondents to acquire relevant skills.

The high use of social media (WhatsApp and Facebook) by the respondents as indicated by Figure 5 may be responsible for the lack of credibility of online sources and misinformation issues they claimed to experience in Tables 1 and 2. Studies (Lazer, 2018; Talwar, Dhir, Singh, Virk and Salo, 2020) have shown that information on social media offer more misinformation and may be less credible as it may be difficult to trace the source or originality of the author(s). Hesse, Nelson and Kreps (2005) point out that health information from physicians remains the most highly trusted sources among adults in the USA. This is because such information are usually products of empirical studies from credible sources often published in journals or other similar scholarly sources.

CONCLUSION

We found in this study that the global outbreak of COVID-19 and the attendant lockdown seriously affected librarians' information seeking behavior. The current study revealed that Librarians in Osun State made use of portable technologies in accessing health related information particularly during the Covid-19 era. The study underscored that they used more smart phone technologies than the others. They mostly accessed health related information through social media

(Whatsapp and Facebook) because easy are more accessible than other technologies. The study concluded that the librarians perceived the use of mobile technologies for accessing health related information positively. However, the study showed that barriers militating against effective utilization of the portable technologies included poor internet connectivity, having reservations for online information sources and poor information searching skills.

RECOMMENDATIONS

Based on our findings, we suggested the following for policy implementation.

1. Librarians should explore other electronic information sources, especially academic sources like e-books, e-journals, databases etc as these sources provide empirical literature which are mostly reliable and credible, rather than what may be obtainable through social media.
2. There is the need for increased knowledge of librarians on online information searching strategies. Librarians should seek for more training on information searching skills and also endeavour to develop their information literacy skills as this will also assist in identifying credible health information sources.
3. There is also the need for mobile network and internet service providers in Osun State, Nigeria to improve on their existing services. Poor internet service is one of the major barriers identified by the respondents; therefore, there is the need by the operators to improve the internet services.
4. Librarians need to change their orientation about age factors influencing the use of mobile technology. Learning never ends and anybody, irrespective of age can use mobile technologies.

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