



COVID-19 information seeking and utilization among library and information science professionals in Nigeria

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Abstract

Like many countries, Nigeria's library services were affected by COVID-19. This study (conducted in 2020) examined the priorities and barriers for information seeking and use by library and information science professionals in Nigeria, including what type of information was sought, the sources used and how these were evaluated. An online survey, with questions informed by a literature survey, was sent to library and information science professionals in Nigeria with WhatsApp accounts (individual and library and information science group accounts). The responses were automatically collected and saved into Google Sheets for further analysis using descriptive statistics. There were 167 responses (61% response rate). The main information needs were causes of the virus, COVID-19 symptoms, providing library services during physical library closure, the timing of reopening, and staff and user safety measures required for library reopening. The respondents were also concerned about COVID-19 test procedures and transmission mechanisms, treatment (including herbal medicines), vaccines, government policy and restrictions on movement. The main information sources used were the Internet (including government and World Health Organization websites), social media, television and radio. The authority, reliability, currency and relevance of the information were considered when evaluating COVID-19 information consulted, and were using the information primarily to 'keep safe' in accordance with government regulations, to provide library services on time and to plan for safe reopening. The barriers to information seeking and use were technical (poor telecommunications), financial (lack of funds to purchase resources) and physical (library closures). One barrier was the volume of information (both reliable and unreliable). Verification was viewed as important but seemingly difficult to do. The respondents were concerned about the safe and effective operation of library services. Library and information science professionals in Nigeria may need advice from health professionals on the most reliable sources of information on COVID-19 and how to use them for themselves and their users.

Keywords

COVID-19, information seeking, information utilization, library and information science, LIS professionals, Nigeria

Introduction

The issue of COVID-19 has shocked many nations. Nigeria has experienced many economic issues due to the recent lockdown and, even since the lockdown has been lifted, living conditions have not been easy for

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its citizens. The COVID-19 pandemic has spread rapidly around the globe (Lipton and Steinhauer, 2020). It poses unprecedented challenges for governments and societies around the world (Anderson et al., 2020). Wang et al. (2020) assert that COVID-19 first emerged in Wuhan, China, in November 2019, and its emergence has been linked to the Huanan Seafood Market. Tedros Adhanom Ghebreyesus, Director-General of the World Health Organization (2020), officially declared the COVID-19 outbreak a pandemic at a media briefing on 11 March 2020. Efforts have been made by the World Health Organization to ensure appropriate levels of preparedness and response to combat the disease effectively and efficiently, and manage the ramifications associated with the outbreak (Ebrahim et al., 2020). Tian et al. (2020) assert that non-pharmaceutical interventions have proven to be critical in delaying and containing the COVID-19 pandemic. Concerns around containing the COVID-19 pandemic have led to individuals seeking information on how to live healthily and stay safe during this period.

Igwe (2012) describes that information seeking is an individual way of gathering and sourcing information for personal use, updating knowledge and development. Since every individual in society is trying to stay safe and healthy to ensure that the pandemic does not claim more lives, they are endeavouring to get the necessary information about the pandemic and utilize it well. Library and information science (LIS) professionals are equally looking for reliable information about the pandemic to enable them to disseminate useful information to their users. Ali and Gatiti (2020) argue that libraries, as social institutions, are responsible for ensuring public health awareness and the provision of up-to-date information to their users. This can only be achieved when LIS professionals have access to reliable information on COVID-19.

Nigeria is a country that is located in the south east of West Africa, having a coast at the Bight of Benin and the Gulf of Guinea. The country is bordered by Benin, Cameroon, Chad, and Niger and shares maritime borders with Equatorial Guinea, Ghana, Sao Tome and Principe. Nigeria has a landmass of 923,768 km. The country's main rivers are the Niger, from which it derives its name, and the Benue, the main tributary to river Niger. The country has a population of 192 million people, which makes it to be the seventh most populous country in the world. Abuja is the capital city, while Lagos is the country's main port, economic hub and most populous city. The official language of Nigeria is English with about 230 ethno-linguistic groups. The major religions in the country are Christianity and Islam (The Nations

Online, 2014). The federal government of Nigeria has embarked on measures to control and combat the spread of the pandemic by creating awareness of the disease and its prevention via print media, television, and electronic and social media – for example, wearing face masks; ensuring that buckets of water, liquid soap and hand sanitizer are placed at the entrance to each organization; and maintaining social distancing. In light of the foregoing, this study focuses on COVID-19 information seeking and utilization among LIS professionals in Nigeria. There have been several studies that have focused on LIS professionals. However, none have been carried out on COVID-19 information seeking and utilization among LIS professionals in Nigeria. This study is intended to fill this research gap.

Objectives of the study

The core objective of the study is to ascertain COVID-19 information seeking and utilization among LIS professionals in Nigeria. The precise objectives are to:

1. Identify the COVID-19 information needs of LIS professionals;
2. Determine the sources of COVID-19 information used by LIS professionals;
3. Determine the criteria/factors used to evaluate the COVID-19 information accessed/used by LIS professionals;
4. Identify the purposes for which COVID-19 information is used by LIS professionals;
5. Determine what constitutes barriers to COVID-19 information access by LIS professionals.

Literature review

The information needs of LIS professionals vary – they range from the causes of the COVID-19 virus to information on COVID-19 symptoms and test procedures, how COVID-19 is transmitted, COVID-19 preventive measures and cures or treatments, the age groups that are most vulnerable to COVID-19 infection, patients' isolation procedures, drugs or vaccines for COVID-19 treatment, movement restrictions and curfews, palliatives, government policies, measures or pronouncements, alternative herbal/traditional treatment, library COVID-19 intervention measures or initiatives, how to provide library services to users and when libraries will open physically to users. According to Ali and Gatiti (2020), there are various topics which need to be embedded in the COVID-19 information needs of librarians, ranging from

preventing transmission to general instructions on using masks, hand washing and the use of sanitizers, avoiding handshakes and various other ways to control the spread of the virus. They further assert that all librarians (public, special, academic, school and national) have a responsibility to share evidence-based information about the epidemic. So, an investigation of the COVID-19 information needs of LIS professionals is not out of place. Heymann and Shindo (2020) argue that, for successful public health strategies in this pandemic period, the populace needs information on the following: measures for school reopening, remote working, home isolation and monitoring the health of symptomatic individuals by telephone or online health consultations. In the same vein, Iyanda (2020) claims that, in a crisis like the COVID-19 outbreak, people are more curious and eager to have specific information about the disease, and that such information should include possible strategies and measures for containment, treatment and vaccines or drugs.

Globally, teachers, students and librarians have been forced to transition to an online-only environment, as numerous schools, universities and libraries have been compelled to close their campuses in response to COVID-19 mandates. Through this transition, various groups of people within the educational system are being challenged to adapt quickly to the new environment, with librarians making frantic efforts to ensure that all library resources and services are available to patrons from a remote location (IGI Global, 2020).

There are several sources of COVID-19 information used by LIS professionals, such as friends, colleagues, family members, neighbours, government health workers, magazines, journals, professional association meetings, the Internet, social media and the Nigeria Centre for Disease Control's website. Ali and Gatiti (2020) claim that the World Health Organization's WhatsApp group is one of the most reliable sources of information in the current crisis. They further argue that librarians are sharing the WhatsApp links with library users in an effort to counter rumours and fake news. Featherstone et al. (2012) examined the provision of pandemic disease information by health sciences librarians in Canada. Their findings reveal that librarian-initiated information projects delivered virus subtype H1N1 information via social media to a potentially large community. Similarly, Bedford (2020) states that, in the UK, the government has created a web page on COVID-19, compiling a list of all the government publications on the topic, as well as a page of information for the public.

Temiz and Salelkar (2020) conducted a study to explore and map the digital services of academic libraries and their response to COVID-19 in Sweden. Using a qualitative research approach, they collected data through a web search from all 39 universities in Sweden via two means: visiting the university and their respective library websites, and the examination of other documents provided by the universities such as press releases and announcements. By thematic coding, an evaluation of the content and digital services, and libraries' response to COVID-19, was conducted. They discovered that, in response to the spread of COVID-19, the general trends observed among the libraries were limited working hours, the closing of physical libraries to the general public, unmanned operations and all 39 universities moving their offerings toward using online tools. The study identified the following main themes: availability of information, accessibility of resources, collaboration with other actors, increased use of existing services, and motivation and support to practise social distancing.

LIS professionals evaluate the sources of COVID-19 information based on the following: the authority, accuracy and reliability of the sources, the scope/coverage of the information sources, the usefulness of the information, whether the information can be verified, whether the information is current, and whether the information is factual/true. Ebrahim et al. (2020) examined COVID-19 information-seeking behaviour and anxiety among parents in Bahrain. Their findings reveal that the most reliable source for COVID-19 information was the social media account of the official health organization, followed by health-care professionals, while the least was print newspapers. According to Lima et al. (2020), governments and health-care authorities use social media to provide updates, news and information on scientific discoveries about COVID-19. Similarly, Gough et al. (2017) assert that governments are doing their best to efficiently share factual and up-to-date information through their social media websites.

Harris (2021) surveyed the impact of the COVID-19 pandemic on people, places, products and services in Jamaican academic libraries, and also compared Jamaican academic libraries' COVID-19 experiences with US academic libraries' preliminary COVID-19 experiences. He discovered that government mandates, university mandates and the absence of a vaccine influenced academic libraries' response; the measures implemented, although unplanned and developed on the hoof, constituted a behavioural change model; and COVID-19 has had both a positive and negative impact on library people, places,

products and services, which has created a new normal for Jamaican academic libraries.

Chisita and Chizoma (2021) carried out a review of the responses of academic libraries in South Africa during the COVID-19 pandemic. They used an analysis of secondary sources, the activities that took place and personal experiences to answer the research questions. It is revealed that academic libraries and publishers have risen to the occasion by offering more free content and curating personalized collections to enable citizens to have uninterrupted access to content and learning; the digital libraries in South Africa are considered vital access points to high-quality e-books, journals and educational content, including open educational resources; and digital library services have enabled academic libraries in South Africa to excel in providing online services, therefore ensuring that learning, research and teaching have continued during the pandemic.

Fasae et al. (2020) conducted a survey of academic libraries' responses to the COVID-19 pandemic in Nigeria and found that almost all students were not on campus as they had been directed to vacate campus as a result of the lockdown; the safety measures put in place by libraries included the total closure of libraries, the provision of hand sanitizer and the wearing of face masks by library users; social-distancing measures were communicated via social media, as well as the cancellation of in-person classes, lectures, training workshops, conferences and paper presentations; and the majority of the academic libraries only provided online materials to their users, while a small number provided access to both print and online materials.

Chan et al. (2020) argue that up-to-date and reliable COVID-19 information is used to decrease transmission of the highly infectious virus not only by health-care workers but also by the general population. Annune et al. (2020) assert that libraries in Nigeria can create awareness among library users on the preventive measures that need to be taken in order to curb the spread of COVID-19, such as adopting restrictive measures based on physical distancing. According to the Scottish Government (2021), for the safety of staff and library users, enhanced health and safety measures should be in place before staff are asked to return to work, including physical-distancing guidance and hygiene measures, and books and library resources should be quarantined for 72 hours on being returned to the library. Further measures include wearing face masks, adequately stocked hand-washing facilities and alcohol-based hand rubs (sanitizers) at key areas such as entry and exit points, the reception desk and staff break areas. In addition, the library

environment should be cleaned regularly at least twice a day – that is, cleaning and disinfecting objects and surfaces (e.g. telephones, keyboards, handles, desks) that are touched. Moreover, the American Library Association (2020) recommends removing chairs so that people are not sitting close to each other, limiting the number of people who can come in at any one time, taking out coat racks and similar measures to keep people and their belongings separate from each other.

There are several barriers to COVID-19 information access and use by LIS professionals, including poor telecommunications networks and Internet speed, lack of funds to subscribe to data, a large amount of unreliable COVID-19 information on social media and a poor power supply. Lima et al. (2020) claim that, nowadays, people are overwhelmed by the information they receive on their smartphones through channels such as Facebook, Twitter, WhatsApp, YouTube and Instagram, but the biggest dilemma is in determining what news to trust. Shimizu (2019) states that fake news has led desperate Japanese people to besiege pharmacies to buy surgical masks. He further comments that fake news has led to racism and xenophobia towards the Chinese.

Research methodology

The study used an online survey designed by the researchers including the five research objectives of the study. It was intended to explore COVID-19 information seeking and utilization among LIS professionals. The population of the study consisted of all LIS professionals in Nigeria with WhatsApp accounts. The authors adopted this convenience sampling technique for the study because it would facilitate the easy and speedy collection of data, as the study was conducted during the period of lockdown occasioned by the outbreak of COVID-19 in 2020 and it was not possible to physically administer the research data collection instrument in the respondents' libraries. Also called 'accidental sampling' or 'grab sampling', convenience sampling involves using people who are easy to reach (Glen, n.d.).

The self-constructed questionnaire was entitled: 'COVID-19 information seeking and utilization among LIS professionals'. The questionnaire consisted of two sections. The first focused on the demographic information of the respondents, while the second focused on COVID-19 information seeking and utilization, and included five items: (1) COVID-19 information needs; (2) sources of COVID-19 information used by LIS professionals; (3) evaluation of sources of COVID-19 information used; (4) purposes for which COVID-19 information

was used; and (5) barriers to access to COVID-19 information by the respondents. Data were collected through a Google web form, which was circulated to individuals and LIS-related WhatsApp group platforms in different libraries and institutions. A total of 167 LIS professionals responded from different libraries and institutions in Nigeria. This represented 60.7% of LIS professionals with WhatsApp accounts in Nigeria.

Online survey research enables individuals in far-off places to access and answer automated data. Wright (2005) asserts that online surveys possess more benefits than traditional surveys in that questionnaires with closed-ended and open-ended items can be completed without stress. The responses were automatically collated, analysed and saved into Google Sheets, from which the data was extracted for this study. The questionnaire items used a 5-point Likert scale with response options with the following scores: 5 = *to a very great extent*; 4 = *to a great extent*; 3 = *to a moderate extent*; 2 = *to a small extent*; and 1 = *to no extent*. In order to obtain the average score for an item, the total scores were added up and divided by 5.

Results

This section covers the results of the study. Table 1 lists the institutions of the respondents. A total of 167 LIS professionals from 54 institutions responded to the online survey. As indicated in the IFLA (n.d.) country database, there are 1131 libraries in Nigeria, while the available records reveal that there are 3624 registered and inducted librarians (Okojie, 2014). The response by 167 librarians from 54 institutions was due to the online survey, which restricted respondents to only those with WhatsApp accounts.

Table 2 shows the distribution of the respondents by gender. The highest number of responses (90, 53.9%) was from females, whereas the number of males who responded was 77 (46.1%). It can be deduced that the LIS profession is dominated by females in Nigeria.

Table 3 focuses on the educational qualifications of the respondents. Holders of a Master in Library and Information Science or Master of Science degree had the highest response rate (90, 53.9%), followed by holders of PhDs (57, 34.1%), while the lowest response rate was 1 (0.6%) for respondents with a Higher National Diploma. Table 3 clearly reveals that the LIS profession is dominated by Master's degree-holders in Nigeria. The high academic profile of the respondents is due to the fact that the majority (162, 90.74%) work in academic and research institution libraries, compared with 5 (9.26%) who work in other

types of libraries (one each in the National Library of Nigeria, Central Bank of Nigeria, Nigerian National Petroleum Corporation Library, Independent National Electoral Commission, and Wole Olanipekun and Co Library). This result corroborates Adomi and Solomon-Uwakwe's (2019) study, which reported that the majority of the respondents who worked in university libraries in Nigeria held higher degrees because university libraries are academic libraries where librarians are required to possess higher degrees in order to progress. In Nigeria, a Master's degree in Library and Information Science is required to be appointed and progress in an academic library (Onifade et al., 2018). This is possibly why the respondents with a Master's degree were in the majority.

Table 4 shows the COVID-19 information needs of the LIS professionals. The findings reveal that the majority of the respondents required COVID-19 information on preventive measures, cures or treatments, causes, symptoms, how to provide library services to users, the availability of preventive/safety devices in the library, and staff safety when the library eventually opened to the user community. However, Table 4 also reveals that the overall mean (3.86) is higher than the criterion mean (3.00), which indicates that the LIS professionals needed all the information shown in Table 4.

Table 5 focuses on the sources of information the respondents consulted or used to obtain COVID-19 information. It reveals that the majority of the respondents used the Internet, social media, television, radio, Nigeria Centre for Disease Control website, World Health Organization website, and friends, colleagues, family members or neighbours. This is in accordance with Tumpey et al.'s (2020) study, who assert that, in every 24 hours, the populace receives news and digital information material constantly from many sources, ranging from print media to television and social media on mobile devices. The various sources that the LIS professionals consulted (as shown in Table 5) would enable them to meet the COVID-19 information needs indicated in Table 4. However, Table 5 reveals that the overall mean (3.72) is higher than the criterion mean (3.00), which indicates that the LIS professionals consulted the all the information sources shown in Table 5.

Table 6 displays the criteria the respondents considered when evaluating the COVID-19 information consulted. This shows that the majority of the respondents evaluated their sources of COVID-19 information according to the following: the authority of the source (e.g. government, Nigeria Centre for Disease Control), accuracy of the source, usefulness of the information, currentness of the information, and reliability of the information source. Evaluating

Table 1. Respondents' institutions.

Institution	Frequency	%
Nnamdi Azikiwe University, Awka, Anambra State	4	2.4
Federal University of Technology Minna, Niger State	3	1.8
Federal University Otuoke, Bayelsa State	3	1.8
University of Ilorin, Kwara State	3	1.8
Federal University of Petroleum Resources Effurun, Delta State	16	9.6
Petroleum Training Institute Effurun, Delta State	10	6.0
University of Benin, Edo State	1	0.6
Nigerian Institute of Advanced Legal Studies, University of Lagos, Lagos State	2	1.2
University of Abuja, Federal Capital Territory	3	1.8
University of Port Harcourt, Choba, Rivers State	2	1.2
University of Calabar, Cross River State	3	1.8
National Library of Nigeria, Abuja, Federal Capital Territory	3	1.8
Olabisi Onabanjo University, Ago-Iwoye, Ogun State	3	1.8
Ahmadu Bello University, Zaria, Kaduna State	2	1.2
University of Nigeria Nsukka, Enugu State	2	1.2
Central Bank of Nigeria, Abuja, Federal Capital Territory	3	1.8
Federal University of Technology, Owerri, Enugu State	2	1.2
Michael Okpara University of Agriculture, Umudike, Anambra State	3	1.8
Federal College of Education (Technical), Asaba, Delta State	2	1.2
Olusegun Oke Library, Ladoke Akintola University of Technology, Ogbomoso, Oyo State	3	1.8
Federal University of Agriculture, Abeokuta, Ogun State	4	2.4
Kenneth Dike Library, University of Ibadan, Oyo State	6	3.6
Nigerian National Petroleum Corporation Library, Abuja, Federal Capital Territory	2	1.2
Federal Polytechnic, Oko, Anambra State	3	1.8
Federal Polytechnic Ede, Osun State	4	2.4
Samuel Adegboyega University, Ogwa, Edo State	5	3.0
Rivers State University of Science and Technology, Nkpolu, Rivers State	4	2.4
Niger Delta University, Yenagoa, Bayelsa State	6	3.6
Catholic Institute of West Africa, Port Harcourt, Rivers State	1	0.6
Nigerian Educational Research and Development Council, Sheda, Abuja, Federal Capital Territory	1	0.6
Kwara State University, Ilorin, Kwara State	3	1.8
Auchi State Polytechnic, Edo State	4	2.4
Akwa Ibom State University of Technology, Uyo, Akwa Ibom State	3	1.8
Nasarawa State Polytechnic, Lafia, Nasarawa State	3	1.8
Adeyemi College of Education, Ondo City, Ondo State	2	1.2
Delta School of Marine Technology, Burutu, Delta State	3	1.8
Bauchi State University, Gadau, Bauchi State	3	1.8
African University of Science and Technology, Abuja, Federal Capital Territory	1	0.6
Independent National Electoral Commission, Abuja, Federal Capital Territory	1	0.6
Musa Abdullahi Central Library, Hassan Usman Katsina Polytechnic, Katsina State	2	1.2
Babcock University, Illishan-Remo, Ogun State	5	3.0
Wole Olanipekun and Co Library, Ikoyi, Lagos State	1	0.6
Afe Babalola University, Ado-Ekiti, Ekiti State	1	0.6
Edo State College of Agriculture, Ighoriakhi, Edo State	2	1.2
Abia State University, Uturu, Abia State	3	1.8
Admiralty University of Nigeria, Ibusa, Delta State	2	1.2
Caleb University, Lagos, Lagos State	1	0.6
University of Africa, Toru-Orua, Bayelsa State	4	2.4
National Institute for Freshwater Fisheries Research, Library, New Bussa, Kogi State	1	0.6
Kogi State College of Education, Ankpa, Kogi State	2	1.2
McPherson University, Seriki Sotayo, Ogun State	1	0.6
Ambrose Alli University Library, Ekpoma, Edo State	5	3.0
Mountain Top University Library, Makogi Oba, Ogun State	2	1.2
Port Harcourt Polytechnic Library, Port Harcourt, Rivers State	2	1.2
Total	167	100

Table 2. Gender of the respondents.

Gender	Frequency	%
Female	77	46.1
Male	90	53.9
Total	167	100

Table 3. Educational qualifications of the respondents.

Educational qualification	Frequency	%
PhD	57	34.1
Master of Library and Information Science/Master of Science	90	53.9
Postgraduate Diploma/Postgraduate Diploma in Library Science	2	1.2
Bachelor of Library and Information Science/Bachelor of Library Science/Bachelor of Science	17	10.2
Higher National Diploma	1	0.6
Total	167	100

information sources is a necessity for LIS professionals to ensure that accurate and reliable information materials are disseminated to the user, as not all information is trustworthy or factual, nor will all information be suitable for particular needs. Print and electronic sources vary widely in their authority, accuracy, objectivity, currentness and coverage. Thus, LIS professionals must be able to critically evaluate the appropriateness of all types of information sources before relying on any information (Elmer E Rasmuson Library, 2020). Table 5 shows that the LIS professionals in this study consulted or used various sources of information, some of which may not have been reliable, true, relevant or current. It is only natural for them to evaluate their sources (as shown in Table 6) before using them to satisfy their COVID-19 information needs. However, Table 6 reveals that the overall mean (4.10) is higher than the criterion mean (3.00), which indicates that the LIS professionals evaluated COVID-19 information sources they consulted.

Table 7 shows that the majority of the information obtained on COVID-19 was used for protection against the virus; to keep the LIS professionals safe in their workplace/library; to obey the government's regulations during the pandemic (e.g. movement restrictions, social distancing); as a guide to provide safety measures in libraries; and to enable library services to be provided for users in the period of the pandemic. It is shown in Table 4 that the need for information on COVID-19 prevention ranked highest with 130 (77.84%) responses. Preventing COVID-19 would enable LIS professionals to provide library services

when library eventually opens to the user community. However, Table 7 reveals that the overall mean (3.97) is higher than the criterion mean (3.00), which indicates that LIS professionals used COVID-19 information to cater for their needs as shown in Table 7.

Table 8 shows that the majority of the respondents had problems with COVID-19 information access or use due to the large amount of unreliable COVID-19 information, too many sources of COVID-19 information and the closure of their library during the pandemic period.

It was due to the large amounts of unreliable COVID-19 information that the LIS professionals had to evaluate the information on the pandemic as shown in Table 6. However, Table 8 reveals that the overall mean (3.73) is higher than the criterion mean (3.00), which indicates that the LIS professionals had issues when accessing and using COVID-19 information as shown in Table 8.

Discussion

In this survey, the researchers resorted to using WhatsApp to collect data through Google Forms. It has been stated that during economic crises, surveys are very effective tools to gauge the exact effect of a situation, such as COVID-19, on business operations; that mandatory social distancing and lockdowns have, however, made physical surveys a great challenge; and that it is likely that these physical limitations will remain for a while. In the prevailing situation, online surveys make for an ideal alternative, and researchers are working on designing and using short and easy online surveys so that they do not put too much pressure and stress on respondents (Premise, 2020). During the pandemic, people have been using email and web surveys more than ever. Web surveys (also known as web-based surveys, e-surveys and online surveys) have certain advantages, which may have contributed to their growing popularity in the present context, including the possibility of collecting data remotely, as well as spin-offs and ethical issues that need to be considered when planning such surveys and interpreting their results. The speed of obtaining and publishing information is particularly important in crisis situations. Moreover, large numbers of individuals may be included in such surveys in addition to a wide geographical range, and there is the possibility of crossing borders almost instantaneously. Nationwide web surveys and even those that cover several countries can generate results in just a few weeks, especially when recruitment is performed through social networks (e.g. Facebook, Instagram, Twitter or WhatsApp; De Boni, 2020).

Table 4. COVID-19 information needs of the LIS professionals.

Information needs	Options					Mean
	To a very great extent	To a great extent	To a moderate extent	To a small extent	To no extent	
Causes of the COVID-19 virus	79 (47.3%)	49 (29.3%)	16 (9.6%)	8 (5.0%)	15 (9.0%)	4.01
Information on COVID-19 symptoms	72 (43.1%)	56 (33.5%)	22 (13.2%)	5 (3.0%)	12 (7.2%)	4.02
COVID-19 test procedures	48 (28.7%)	69 (41.3%)	21 (12.6%)	6 (3.6%)	13 (7.8%)	3.62
How COVID-19 is transmitted	64 (38.3%)	64 (38.3%)	16 (9.6%)	11 (6.7%)	12 (7.2%)	3.94
COVID-19 preventive measures	83 (49.7%)	47 (28.1%)	14 (8.4%)	9 (5.4%)	14 (8.4%)	4.05
COVID-19 cures or treatments	81 (48.5%)	52 (31.1%)	8 (4.8%)	14 (8.4%)	12 (7.2%)	4.05
Age group most vulnerable to COVID-19	49 (29.3%)	69 (41.3%)	22 (13.2%)	12 (7.2%)	15 (9.0%)	3.76
Isolation procedures for COVID-19 patients	40 (24.0%)	61 (36.5%)	28 (17.0%)	20 (12.0%)	18 (11.0%)	3.50
Drugs or vaccines for COVID-19 treatment	70 (42.0%)	47 (28.1%)	17 (10.2%)	18 (11.0%)	15 (9.0%)	3.83
Movement restrictions or curfews	52 (31.1%)	57 (34.1%)	25 (15.0%)	19 (11.4%)	14 (8.4%)	3.68
Palliatives	51 (30.5%)	46 (27.5%)	28 (16.8%)	21 (13.0%)	21 (13.0%)	3.50
Government COVID-19 policies, measures and pronouncements	57 (34.1%)	65 (38.9%)	18 (11.0%)	11 (7.0%)	16 (10.0%)	3.81
Alternative herbal or traditional treatments	63 (37.7%)	49 (29.3%)	23 (14.0%)	17 (10.2%)	15 (9.0%)	4.05
Library COVID-19 intervention measures or initiatives	64 (38.3%)	55 (32.9%)	21 (13.0%)	14 (8.4%)	13 (8.0%)	3.85
How to provide library services to users	77 (46.1%)	46 (27.5%)	18 (11.0%)	15 (9.0%)	11 (7.0%)	3.97
When the library will open physically to users	59 (35.3%)	51 (30.5%)	23 (14.0%)	15 (9.0%)	19 (11.4%)	3.69
Staff safety when library eventually opens to the user community	74 (44.3%)	50 (29.9%)	20 (12.0%)	12 (7.2%)	11 (7.0%)	3.98
Users' safety when library eventually opens to the user community	71 (42.5%)	57 (34.1%)	18 (11.0%)	8 (5.0%)	13 (8.0%)	3.98
Availability of preventive and safety devices in the library	74 (44.3%)	56 (33.5%)	14 (8.4%)	11 (7.0%)	12 (7.2%)	4.01
Overall mean			3.86			

Note: Criterion mean = 3.00.

Table 5. Sources of COVID-19 information used or consulted.

Sources of COVID-19 information	Options					Mean
	To a very great extent	To a great extent	To a moderate extent	To a small extent	To no extent	
Friends, colleagues, family members, neighbours	61 (36.5%)	40 (24.0%)	20 (12.0%)	28 (17.0%)	18 (11.0%)	3.58
Government health workers	45 (26.9%)	60 (35.9%)	24 (14.4%)	19 (11.4%)	19 (11.4%)	3.55
Magazines	57 (34.1%)	37 (22.2%)	31 (18.6%)	29 (17.4%)	13 (8.0%)	3.57
Journals	37 (22.2%)	57 (34.1%)	29 (17.4%)	31 (18.6%)	13 (8.0%)	3.44
Professional association meetings	34 (20.4%)	54 (32.3%)	39 (23.4%)	24 (11.4%)	16 (9.6%)	3.39
Internet (search)	97 (58.1%)	50 (25.4%)	11 (7.00%)	6 (4.0%)	3 (2.0%)	4.38
Social media (e.g. WhatsApp, Facebook)	95 (56.8%)	50 (29.9%)	15 (9.0%)	3 (2.0%)	4 (3.4%)	4.37
Nigeria Centre for Disease Control website	64 (38.3%)	53 (31.7%)	22 (13.2%)	10 (10.0%)	18 (11.0%)	3.80
World Health Organization website	49 (29.3%)	66 (39.5%)	19 (11.4%)	16 (10.0%)	17 (10.2%)	3.68
Institutional bulletins, memos or circulars	26 (15.6%)	61 (36.5%)	31 (18.6%)	29 (17.4%)	20 (12.0%)	3.26
Television	90 (54.0%)	48 (28.7%)	15 (9.00%)	11 (7.00%)	3 (2.00%)	4.26
Radio	73 (43.7%)	42 (25.1%)	25 (15.0%)	9 (5.4%)	18 (11.0%)	3.85
Church or mosque	29 (17.4%)	62 (37.1%)	29 (17.4%)	14 (8.4%)	33 (20.0%)	3.23
Overall mean			3.72			

Note: Criterion mean = 3.00.

Table 6. Evaluation of sources of COVID-19 information consulted.

Evaluation of sources of COVID-19 information	Options					Mean
	To a very great extent	To a great extent	To a moderate extent	To a small extent	To no extent	
Authority of source (e.g. government, Nigeria Centre for Disease Control)	89 (53.3%)	48 (28.7%)	21 (13.0%)	2 (1.2%)	6 (4.0%)	4.25
Accuracy of source	63 (37.7%)	69 (41.3%)	27 (16.2%)	3 (2.0%)	4 (2.4%)	4.08
Reliability of source	68 (40.7%)	66 (39.5%)	26 (16.0%)	1 (1.0%)	4 (2.4%)	4.11
Scope or coverage of source	57 (4.1%)	64 (38.3%)	36 (21.6%)	4 (2.4%)	5 (3.0%)	3.96
Usefulness of information	75 (44.9%)	61 (36.5%)	24 (11.4%)	3 (2.0%)	1 (0.6%)	4.16
Whether the information can be verified	49 (29.3%)	69 (41.3%)	43 (25.7%)	4 (3.4%)	1 (0.6%)	3.94
Whether the information is current	73 (43.7%)	63 (37.7%)	24 (14.4%)	4 (3.4%)	2 (1.2%)	4.18
Whether the information is true or factual	71 (42.5%)	59 (35.3%)	31 (18.6%)	2 (1.2%)	3 (1.8%)	4.13
Overall mean			4.10			

Note: Criterion mean = 3.00.

Table 7. What COVID-19 information is used for.

What COVID-19 information is used for	Options					Mean
	To a very great extent	To a great extent	To a moderate extent	To a small extent	To no extent	
Identification of symptoms of COVID-19	63 (37.7%)	67 (40.1%)	21 (12.6%)	13 (8.0%)	3 (1.8%)	3.23
Isolation or quarantine procedures and practices	44 (26.3%)	70 (41.9%)	19 (11.4%)	20 (12.0%)	14 (8.4%)	3.65
Treatment	55 (32.9%)	70 (41.9%)	19 (11.4%)	20 (12.0%)	14 (8.4%)	3.98
Protection against infection	89 (53.3%)	49 (2.9%)	18 (10.8%)	7 (4.2%)	4 (2.4%)	4.26
Obeying government regulations (e.g. movement restrictions, social distancing)	82 (49.1%)	59 (35.3%)	17 (10.2%)	5 (3.0%)	4 (2.4%)	4.25
Keeping safe in workplace/library	85 (51.0%)	59 (35.3%)	13 (7.8%)	6 (3.6%)	4 (2.4%)	4.29
Enabling the provision of library services to users	70 (41.9%)	65 (40.0%)	15 (9.0%)	9 (6.0%)	8 (5.0%)	4.07
Executing or launching COVID-19 intervention measures or initiatives	56 (33.5%)	59 (35.3%)	28 (16.8%)	16 (10.0%)	8 (11.0%)	3.83
As a guide to provide safety measures in the library	79 (47.3%)	64 (38.3%)	10 (6.0%)	11 (7.0%)	3 (2.0%)	4.22
Overall mean			3.97			

Note: Criterion mean = 3.00.

Thus, this survey of COVID-19 information seeking and utilization among LIS professionals in Nigeria is seminal, and was better conducted during the COVID-19 pandemic using an online survey due to the mandatory lockdown, which imposed physical limitations and restrictions of movement in Nigeria in 2020. WhatsApp was not restricted by the limitations occasioned by the pandemic and hence provided a veritable means of collecting data from library professionals. However, this precluded those who were not on the WhatsApp platform from participating in the survey. Accordingly, it has been observed by De Boni (2020) that the speed, large samples and wide

scope inherent in e-surveys do not guarantee external validity (representativeness or generalization of the results), which can only be achieved with a probability sampling method or census. Therefore the limitations of the findings of this study stem from the inability to guarantee the representativeness or generalization of the results.

The findings reveal that the majority of the respondents wanted COVID-19 information on preventive measures, cures or treatments, causes, symptoms, how to provide library services to users, the availability of preventive or safety devices in the library, and staff safety when the library eventually opened to the user community.

Table 8. Barriers to COVID-19 information access and use.

Barriers to COVID-19 information access and use	Options					Mean
	To a very great extent	To a great extent	To a moderate extent	To a small extent	To no extent	
Poor telecommunications networks	54 (32.3%)	55 (32.9%)	23 (13.8%)	20 (12.0%)	15 (9.0%)	3.67
Poor Internet speed	62 (35.6%)	44 (26.3%)	22 (13.2%)	25 (15.0%)	14 (9.0%)	3.68
Lack of funds to subscribe to data	55 (32.9%)	45 (26.9%)	26 (15.6%)	26 (15.6%)	15 (9.0%)	3.59
Large amount of unreliable COVID-19 information on social media and in other sources	73 (43.7%)	47 (28.1%)	20 (12.0%)	16 (9.6%)	11 (6.6%)	3.92
Poor power supply	58 (34.7%)	59 (35.3%)	17 (10.2%)	18 (10.8%)	15 (9.0%)	3.76
Too many sources of COVID-19 information	74 (44.3%)	50 (29.9%)	25 (15.0%)	11 (6.6%)	7 (4.2%)	4.03
Closure of library during the pandemic period	73 (43.7%)	46 (27.5%)	20 (12.0%)	17 (10.2%)	11 (7.0%)	3.91
High cost of newspapers and magazines	39 (23.4%)	48 (28.7%)	32 (19.2%)	25 (15.0%)	23 (14.0%)	3.32
Overall mean			3.73			

Note: Criterion mean = 3.00.

Kalayou et al. (2020) conducted a study to assess health-care providers' information-seeking behaviour during the COVID-19 pandemic and found that the respondents required and sought information on diagnosis, treatment, modes of transmission, prevention methods, and global and local case and death reports. Although this research was with health-care providers, their areas of information seeking are similar to the areas in which the information professionals required information in the current study. Also, Iyanda (2020) reveals that, in a crisis like the COVID-19 outbreak, people are more curious and eager to know specific information about the disease, and that such information includes possible strategies for containment, treatment and vaccines or drugs.

The majority of the respondents used the following sources to get information: the Internet, social media, television, radio, the Nigeria Centre for Disease Control website, the World Health Organization website and friends, colleagues, family members or neighbours. This is in line with Tumpey et al.'s (2020) study, who reveal that people constantly receive information from many sources, ranging from print media to television and social media on mobile services. It should be noted that the extent to which information is sought by anyone from any given source depends on their degree of trust in that source.

The findings show that the majority of the respondents evaluated their sources of COVID-19 information according to the following criteria: the authority of the source (e.g. the government, Nigeria Centre for Disease Control), accuracy of the source, usefulness of the information, currentness of the information and reliability of the information source. This is in line with Lima et al.'s (2020) research, which reveals that information from

reliable sources such as government health-care authorities and specialists should be trusted. In this period of the COVID-19 pandemic, there has been a proliferation of fake information or information that has not been properly vetted, and some of this information can impact how we live our lives, which makes it very important to consult sources that are reliable (Malhotra, 2020). It is interesting to note that the information professionals who participated in this study assessed the COVID-19 information sources they consulted. This implies that they are very concerned about the possible impact that the information consulted and used may have on their health and well-being.

The study reveals that the majority of the LIS professionals sought COVID-19 information to enable them to keep safe in their workplace/library ($\bar{x} = 4.29$). The possible reason for this is that staff are frequently consulted by numerous users in the library and therefore may be apprehensive about the possibility of being infected with the coronavirus. In order to mitigate this, they seek information on how to keep safe in the workplace.

The majority of the respondents had problems with accessing or using COVID-19 information due to the large amount of unreliable COVID-19 information, too many sources of COVID-19 information and the closure of their library during the pandemic period. These findings corroborate those of Ebrahim et al. (2020), who note that obstacles to COVID-19 information seeking include the spread of unverified information and the huge amount of information about the disease. It is also in agreement with Lima et al.'s (2020) research, who reveal that we are living not just in a pandemic, but also in an 'infodemic', where fake news is becoming more common.

Conclusion

Based on the findings of this study, it is concluded that LIS professionals are interested in COVID-19 information on preventive measures, cures, causes, symptoms, how to provide library services to users, the availability of preventive or safety devices in the library, and staff safety when libraries eventually open to the user community. Moreover, LIS professionals' sources of information on COVID-19 are mostly the Internet, social media, television, radio, the Nigeria Centre for Disease Control website, the World Health Organization website and friends, colleagues, family members or neighbours. In addition, information on COVID-19 is used by LIS professionals to keep safe in the library. The purpose of this study is to enable LIS professionals in Nigeria get accurate, timely and reliable information on COVID-19. The study will be helpful for LIS professionals to learn where to source genuine information on COVID-19. This study will be made available to the Nigeria Centre for Disease Control to help assist LIS professionals where necessary.

Recommendations

Based on the findings of the study, the following recommendations are made:

1. Further research should be conducted on the COVID-19 information needs of LIS professionals in African countries.
2. The study has revealed the various areas in which information professionals need COVID-19 information. Since the respondents are not health professionals, it would be helpful if institutions and professional associations like the Nigerian Library Association were to organize virtual conferences on the various areas of information needs indicated by the respondents. Relevant health professionals should be invited to speak to address these needs.
3. LIS professionals should increase the extent to which they share the COVID-19 sources they are using, including with colleagues who may not be on WhatsApp.

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