

Research Article

Application of Mobile Technologies for Access and Retrieval of Information in Emergency Situation: An Eye Opener for Libraries and Information Users

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ABSTRACT

The paper explored the application of mobile technologies for access and retrieval of information in emergency situation. This study was necessary to open the eyes of the libraries and users more on the available opportunities presented by mobile technologies for access and retrieval of information using mobile devices. As in the case of lockdown of libraries and other institutions during covid-19 pandemic which was an unforeseen emergency that left the economy closed for months; students, faculty members, researchers and the entire populace were hindered from accessing physical libraries. Many information users lacked information about the efficacy of their mobile devices in accessing information of their choice. However, the paper discovered that library services can still be accessed using mobile devices and applications such as online reference services through mobile phones, mobile-based online databases, mobile personal space or my library through Smartphone, short message service (SMS) notifications, social media network etc. The study identified various mobile applications that aid mobile libraries such as worldcat mobile, wordweb dictionary, encyclopedia Britannica mobile, meebo mobile, library of congress, medlinePlus mobile, U.S.A factbook free, OECD factbook 2010, history: maps of the world, planets etc. To ensure successful application of mobile-based information technologies, there is need to have good understanding of how each of the technologies is used which requires personal or institutional training on the use of mobile library.

1. Introduction

Libraries and other information centres across the world may at any time face certain emergency situations that will warrant them to close their gates temporarily against the users. A typical example of emergency situation for library and information centres is the one of lockdown occasioned by covid-19 pandemic. This form of situation forced the libraries and other institutions to close down their activities temporarily, as to ensure that students, staff and visitors are safe from contracting or spreading the virus. In some occasions, libraries are lockdown when there is a serious emergency or security risk to the premises due to, for example, outbreak of contagious diseases, near-by chemical spillage, proximity of dangerous occurrence, serious weather conditions, attempted access by unauthorised persons intended to cause harm or damage, etc. (Wiles, 2017). Emergency situations in library institutions can lead to partial closure or full closure.

In a partial closure, the library staff and users as a result of a reported incident or potential risk like community unrest, pollution, chemical, biological or radiological issues may be asked neither to go out nor allow users into the library premises. On the other hand, the library may experience full closure and lead to evacuation of both staff and users from the library until it has been lifted by emergency services. After normalcy returns, the library commences operation with adequate compliance to the guideline.

In emergency situation when physical access to the library is cut off, mobile technologies continue to guarantee access to information unhindered. Even the higher education institutions have appreciated the use of mobile and information and communications technology (ICT) to deliver their programmes.

Technological dependence during emergency situation will be the only solution for educational progress in the country, but will definitely bring inequalities between those education institutions that have better ICT infrastructure than others, with some being far better equipped and experienced than others; and between students within the same institution – the rich who live in urban areas and the poor in rural areas who can barely afford to access the internet, when and if it is available. While it is true that the crisis has provided an opportunity to all higher education institutions to quickly improve and maximize their ICT operations, the majority of them do not have the capacity to fully deliver whole programmes online. It is the few open universities in Nigeria that have that capacity, but their targets are mostly mature students, those in employment and those wishing to upgrade their qualifications, not fresh school-leavers (Mohamedbhai, 2020)

The hope of academic institutions for sustainable progress during emergency periods is pointing towards the digital divide within the country in which application of mobile technologies would play a vital role. As digital innovation is ongoing in education with focus on higher education institutions, libraries are not reluctant in making access to information easier especially, in a time of total lockdown like the one brought about by covid-19 pandemic. Though there are significant numbers of education institutions that have been implementing hybrid library system in order to increase access and improve library services, it seems little has been known about mobile information access and retrieval system. Nevertheless, this is the right time when libraries and the users should tap from the potentials of mobile technologies for accessing, retrieving, sharing and dissemination of information. Emergency situation such as covid-19 pandemic lockdown has glorified mobile information access and retrieval system and created more expansion to the library and information services boundaries.

2. Use of Mobile Devices for Information Access and Retrieval

The advent of mobile technologies is changing the way information is being delivered and accessed. Pathways to communication and information transfer become less cumbersome as users can access library services at the comfort of their homes without having to come to the physical library. Perhaps, most libraries and users in Nigeria seem to be unaware of the information services and delivery potentials of the mobile devices. On this note, various information services that could be accessed with the use of mobile applications are discussed below:

2.1 Online/ Mobile Reference Services: Libraries receive myriads of queries from the information seekers on daily bases and it becomes a daunting task for librarians to handle these great numbers of queries. With the advent of Information Communication Technologies, this bottleneck has been mitigated. According to Lippincott (2010), mobile technology has made it possible for librarians and information handlers to attend to multiple queries from patrons at the same time. Anyim (2018) opines that mobile reference service has made the tasks of librarians easier especially in the era of information explosion as it saves time and enhances service delivery. With the use of mobile reference service technologies, objective and timely responses to patrons' queries could be achieved and patrons received it right at the comfort of their spaces (Liu and Briggs, 2015; Saxena and Yadav, 2013; Verma and Verma, 2014).

However, reference services could be carried out using any of the social media platforms to engage patrons in live video interaction. Such platforms include Skype, Imo and WhatsApp, Facebook etc. Online platforms provide libraries with several advantages including bond creation between the patrons and librarians, collaborate with colleagues in other libraries, conference chats and other provision of reference services without time and physical barriers. Mobile reference services technologies have been confirmed by many libraries in the developed countries to be effective in dissemination of information. A research conducted by Tao, McCarthy, Krieger and Webb, (2009) discovered that mobile reference services technology has made great impact on Saint Louis University School of Public Health library and enabled it experience improved marketing of library resources and services. The library was also able to achieve effective liaison relationships.

2.2 Mobile-based databases: this technology provides information users the opportunity to access and retrieve information resources with ease. Information seekers, despite whatever emergency situations in conventional library do not need to

worry themselves as these devices are capable of sustaining their immediate information needs to some extent. Shonhe (2017) observed that Information seekers may retrieve various information sources through mobile-based databases such as Pub Med which contains biomedical literature with millions of citations including full-text content. With advent of Smartphone and appropriate mobile library applications, plenty online databases are made accessible to the users. Utilization of mobile based databases offers a faster means of accessing information. With mobile public access catalogue, information seekers can find the available library resources on the library. When mobile technologies are well implemented, emergency situations may only hinder physical access to the library but the virtual traffic to information still remains active and open to all users of information. It was identified by Nalluri and Gaddam (2016) that several libraries in developed countries such as the New York public library, University of Liverpool library, Jefferson county public library and Nashville public library have adopted the use of mobile public access catalogue as part of their library resources.

2.3 Mobile personal space or my library: this mobile library application is a self-service system that allows information users the opportunity to create and manage personalised accounts with custom-made collections. Here users can set up and manage their profile, preferences for catalogue searches, receive alerts on reserved items, check their records, track interlibrary loan request, renew borrowed items and document delivery requests (Shonhe, 2017; Saxena and Yadav, 2013; Verma and Verma, 2014). It was recalled by Wang, Ke, and Lu (2012) that National Tsing-Hua University (NTHU) library makes use of this technology.

Information seekers can tap from this application as it creates a medium for electronic data sharing and selective information dissemination (Liu and Briggs, 2015). It is also noteworthy that information providers are able to send customized scanned documents, images, audio books and eBooks to library users' personalised accounts (Saxena and Yadav, 2013). This library service is also a good system for e-learning and distance learning (Prabhakaran and Kalyani, 2014). This platform serves the users right in their homes in such a way that their personal information needs are met. General information with respect to general and specific information could be obtained through users' personal account.

Those who are running distance learning program may utilise this mobile application to continue their studies without barriers. The effect of mobile technology on information dissemination is greatly felt in a time when physical movement to the library is highly restricted. Considering the global pandemic situation and social distancing policy as in the case of covid-19, it is needful to implement the suggestions of Nalluri and Gaddam (2016), who opined that academic libraries should harness the advantages of mobile technology to implement structures for distance learning by making information ubiquitous. Remarkably, Duke University had already implemented a free iPhone application called Duke Mobile, which contains information on digital library resources. This provides a ubiquitous access to the library's digital resources and photo archive (Vollmer, 2010). However, with personalized user accounts and library collections, mobile information users can feel more in control of their needed information resources and also arouses more interest in accessing library resources (Shonhe, 2017).

2.4 Short Message Service (SMS) notification: this involves the use of mobile device technology to disseminate information in the form of text messages and multimedia content such as videos, images and audio files. The library users' profile and contact mobile phone numbers are documented by librarians to be used for the purpose of equipping them with any update. Libraries utilise short message services notification to alert patrons regarding outstanding fees, renewals, provision of call numbers, interlibrary loan, issue return notification, items on hold and new arrivals (Kumar and Chitra, 2008; Kumar, 2014; Negi, 2014; Wang, Ke, and Lu, 2012). Meanwhile an integrated library management software is used to generate such notifications, for example; Libsys 0.7, AIM Hack, My Info Quest, Mosio's Text a Librarian, Upside wireless-used by UCLA Libraries (Verma and Verma, 2014).

2.5 Social media networks: this is one of the best technological innovations that have gained worldwide acceptance in academic libraries of the 21st Century. Both the libraries and information seekers use the social media platforms for information dissemination. Social networks are more appropriate for use on marketing information and delivering of personalised information to group or individuals (Shonhe, 2017). Social media networks are also utilised for collaborative and group chat. Prabhakaran and Kalyani (2014) asserted that information is propagated through the use of social media networks such as WhatsApp, Imo, Google, twitter, Facebook and Pinterest. Similarly, Wiki provides lists of libraries that implement various types of short messages notification services and other mobile library services to exchange information

with patrons. Some notable libraries that adopted social media network in their services include; Denton public libraries, Swiss National library and Simmons College library (Library success, 2014).

2.6 Quick Response (QR) codes are two dimensional barcodes that serve as pointer to desired websites (Library success, 2014). It provides information users a direction to websites where they can access their desired information. According to Saxena and Yadav, (2013), Quick Response code is a time saving technology that acts as a pointer to indexed or programmed URLs. The barcodes contain information about an item to which QR code is affixed or attached. Most owners of smart phones have used their camera features to scan images and decode the information (Shonhe, 2017). Quick Response codes are also known as mobile tagging (Verma and Verma, 2014). Information professionals use this technique to direct users to relevant or important websites, either on a certain topic or library adverts. Moreover, QR codes might be used to direct users to websites that provide updates on their desired information needs.

2.7 Online VOD (MVOD) system: this system has been used by libraries to enable users' access videos that meet their needs. One of the libraries that have used this technology include Oriental Institute of Technology (OIT) library (Wang, Ke, and Lu, 2012). It allows users to play videos using their mobile devise through a Wi-Fi/ 3G or 4G network. Videos can be searched using access points such as name of creator or title of the video (Prabhakaran & Kalyani, 2014).

2.8 Library web sites: Library website is a veritable tool used by the library to promote and market the library resources and services. Information pertaining to available resources and services, mission and vision statement of the library, newsletter and so on is provided by the website. Library websites according to Nalluri and Gaddam (2016) are used in various libraries for marketing purposes and announcement of news or upcoming events to their patrons. Techniques such Cascading Style Sheet or Auto-Detect and Reformat Software are used to enable websites to rearrange and adapt to the size of the mobile device being used. The advent of mobile technology has access to websites easier (Nalluri & Gaddam, 2016). Libraries now have a website that enables information dissemination and access by all types of users (Shonhe, 2017).

2.9 Mailing lists: It is almost impossible for individuals and libraries not to use e-mail in their day-to-day activities to pass information. Shonhe (2017) acknowledged that mailing list is the most common method of information dissemination. Using email in library services is essential as it allows group or individuals receive personalised information.

3. Library Mobile Apps and Uses

3.1 WorldCat Mobile

WorldCat Mobile offers users a catalog of online library resources including books, journals, movies, music, games, etc. Results from the search can contain items available at local libraries. Access via: <http://www.worldcat.org/m>

3.2 WordWeb Dictionary

WordWeb Dictionary is an English dictionary and thesaurus app created by WordWeb Software and it contains over 285,000 words, phrases and entries. It has an audio version which is available for a fee. WordWeb Dictionary works with iPhone, iPod touch, and iPad. Access via: <http://www.wordwebsoftware.com/WordWebiPhone.html>.

3.3 Encyclopedia Britannica Mobile

This is mobile website that provides a search box and a list of suggested searches. Results from the search include full-text entries containing images that are enlargeable. Access via: <http://i.eb.com/>.

3.4 Meebo Mobile

This application provides users opportunity to chat with friends or colleagues and also enables librarians to monitor library's chat services. Meebo has user-friendly interface and capacity to aggregates multiple chat accounts into one definite interface. Meebo is available for iPhone, Android, and BlackBerry users. Access via: <http://www.meebo.com/meebomobile/>

3.5 Library of Congress (LOC)

Library of Congress mobile app provides users access to a pull of collection that includes books, journals, audio, videos, photos and other relevant resources. It could be accessed via: <http://itunes.apple.com/us/app/library-of-congress-virtual/id380309745>

3.6 MedlinePlus Mobile

MedlinePlus Mobile is a mobile website created by the U.S. National Library of Medicine which provides health related information such as medical articles - diseases, conditions, wellness, drug prescription information, public health and current health news. Access via: <http://m.med-lineplus.gov>.

3.7 USA Factbook Free

USA Factbook Free was created by Software Group, Inc. to provide users with facts about United States. The facts include names of state, maps, U.S. Anthem with lyrics, U.S. government documents etc. The app is free of charge and it works with iPhone, iPod touch, and iPad. Access via: <http://itunes.apple.com/us/app/usa-factbook-free/id305888083>

3.8 OECD Factbook 2010

OECD Factbook 2010 was designed by the Organization for Economic Co-operation and Development to share current economic, social, and environmental statistical data. The data contained in this app is organised into 12 categories which include Production and Income, labour, Population and Migration, Science and Technology, etc. There contains other specific sub-topics with statistical data presented in tables. This app works with iPad, iPhone and iPod touch and can be downloaded free of charge. Access via: <http://www.oecd.org/publications/factbook>

3.9 History: Maps of the World

This app was designed by Seung-Bin Cho for access to historical maps of the world that covers 4th - 20th centuries. With this application, one can search maps by keyword. Mobile devices such as iPhone, iPad and iPod touch have this app available for download. It can also be accessed free of charge via: <http://itunes.apple.com/us/app/history-maps-of-world/id303282377>

3.1.0 Planets

Planets app has geographical features that uses immediate location to figure out information about the state of the sky. For instance, Planets app provides information on the location and phases of the sun, moon, stars and planets. The app has options for viewers in either 2D or 3D. Planets app is available in iPhone, iPad and iPod touch and it is free of charge. Access via: <http://www.qcontinuum.org/planets/>.

3.1.1 Periodic Table Explorer

This app was created by Paul Alan Freshney. It provides access to comprehensive information about the entire elements and the images of each element - physical properties, compounds, spectra, isotopes and reactions in the periodic table. Periodic Table Explorer app works with apple devices like iPhone, iPod touch, and iPad and it is free of charge. Access via: <http://freshney.org/apps/pte.htm>

3.1.2 Classics

This mobile app contains vast collection of free classic literature with easy to navigate interface. With this, one can have access to works of notable philosophers and author like Aristotle, Plato, Charles Dickens, Emmanuel Kant, Oscar Wilde, Nostradamus, Shakespeare etc. This application works with iPhone, iPod touch, and iPad. The application is free of charge and could be accessed via: <http://spreadsong.com>.

3.1.3 Shakespeare

This app was created by Re-addle and it offers collections of Shakespeare plays, poems, sonnets and a searchable concordance. Shakespeare is free of charge and available for iPhone, iPod touch, and iPad users via: <http://readdle.com/shakespeare>.

3.1.4 Dropbox

Dropbox app stores, syncs and shares files online via computers or mobile devices. Downloaded files, photos and videos could be synced and accessed offline using the dropbox from the mobile device. iPhone, iPad, Android, and BlackBerry work perfectly with dropbox and could be accessed via: <https://www.dropbox.com/anywhere>.

3.1.5 iSSRN

iSSRN app is a product of Social Science Research Network (SSRN) that provides access to thousands of research papers in the social sciences and humanities from researchers and scholars across the globe. Mobile devices can be used to access or viewed the articles. iSSRN application is available in iPhones and iPod touch and could be downloaded free of charge. Access: <http://ssrnblog.com/2009/11/19/ssrns-iphone-app-issrn-is-available/>.

3.16 TED

Video presentations of entire TEDTalks are provided by this app created by TED Conferences. It has features that enable information to be sorted by themes, currency and popularity, and information could be saved for offline viewing. This app works with the iPad free of charge. Access via: <http://itunes.apple.com/us/app/ted/id376183339>

4. Mobile Application Search Engine

This section provides the search engines applicable for discovering and downloading of mobile apps including:

4.1 App Store

App Store contains varied applications in different areas of interest such as games and entertainment (videos, music, cartoon etc), news and magazines, education, business etc. Mobile apps can be downloaded using internet network to iPhone, iPad and iPod touch. Access via: <http://itunes.apple.com/us/genre/mobile-software-applications/>

4.2 App Store HQ

App Store HQ is used to search all mobile apps categorically and also read the latest app updates, etc. The App Store HQ works with web apps, Android, iPhone and iPad. Access via: <http://www.appstorehq.com/>.

4.3 Appolicious

Appolicious could be used to search applications for mobile devices such as Android and iPhone. Access via: <http://www.appolicious.com/>

4.4 Mimvi

Mimvi is used to discover iPhone, Android, and Blackberry apps. Access via: <http://www.mimvi.com>

4.5 AppBrain

This is used to locate mobile apps in android devices. Access via: <http://www.appbrain.com/>.

4.6 Mimvi

Mimvi is used to discover iPhone, Android, and Blackberry apps. Access via: <http://www.mimvi.com>

4.7 Getjar

This app is compatible with Windows Mobile, Android, BlackBerry and iPhone and could be accessed via: <http://www.getjar.com>.

5. Conclusion and Recommendation

The application of mobile technologies in libraries was first discovered in developed countries. However, in developing countries and Nigeria in particular, provision of mobile information services by the libraries is not quite common. From the reviewed literature, it was discovered that the use of mobile-based technologies as part of library information delivery system has gained more acceptance in developed countries than it's done in developing countries. The study identified various types of mobile library services and library mobile apps. It was believed that poor application of mobile-based technologies in library services in developing countries during emergency situations might be due to lack of awareness creation on the existence and significance mobile technologies for learning purposes and cost of acquiring the devices including running cost like internet subscription. However, there is need for sufficient information and publicity about the usefulness of mobile technologies so that the users can utilise their mobile devices as library resources especially when they are physically incapacitated to use conventional library. To ensure successful application of mobile-based technologies, there is need to have good understanding of how each of the technologies is used which requires personal or institutional training on the use of mobile library. Information Communication Technologies are changing the way information is delivered and accessed, therefore it is essential for academic libraries to position themselves to flow with the changing trend and ensure that the library and related institutions continue to be relevant even in emergency situations.

References

- [1] Anyim, W. O. (2018). Application of Interpersonal Communication in Reference and Information Services in University Libraries. *Library Philosophy and Practice (e-journal)*. 1793. Retrieved from <https://digitalcommons.unl.edu/libphilprac/1793>
- [2] CnbAfrica (2020). COVID-19: Lagos, FCT & Ogun State to go into lockdown. <https://www.cnbcafrica.com/coronavirus/2020/03/29/covid-19-lagos-fct-ogun-state-to-go-into-lockdown>
- [3] European Centre for Disease Prevention and Control (2020). Guidelines for the use of non-pharmaceutical measures to delay and mitigate the impact of 2019-nCoV. ECDC: Stockholm.
- [4] Gadaworld (2020). Nigeria: Government locks down major cities due to COVID-19 from March 30 Available from <https://www.garda.com/crisis24/news-alerts/327406/nigeria-government-locks-down-major-cities-due-to-covid-19-from-march-30-update-4>
- [5] Guan, W-J; Ni, Z-Y; Hu, Y; Liang, W-H; Ou, C-Q & He, J-X (2020) Clinical Characteristics of Coronavirus Disease 2019 in China. *N Engl J Med* [Internet, 1–13. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/>
- [6] Kucharski, A. J.; Russell, T. W. & Diamond, C. (2020). Early dynamics of transmission and control of COVID-19: A mathematical modelling study. *Lancet Infect Dis* 2020. Available from [https://doi.org/10.1016/S1473-3099\(20\)30144-4](https://doi.org/10.1016/S1473-3099(20)30144-4)
- [7] Kumar, A. (2014). Students' opinion about the success of mobile technology in libraries: A case study of Jawaharlal Nehru University (JNU), New Delhi. *New Library World*, 155(9/10),471 - 481.
- [8] Kumar, V. V., & Chitra, S. (2008). Innovative use of SMS technology for the excellence in library services in Kerala. *IASLIC 23rd National Seminar On "Library Profession in Search of a New Paradigm"*. Kolakata: IASLIC. Retrieved January 20, 2017, from <http://docplayer.net/22829433-Innovative-use-of-sms-technology-for-the-excellence-in-library-services-in-kerala.html>
- [9] Lau, H.; Lau, H; Khosrawipour, V.; Kocbach, P.; Mikolajczyk, A. Schubert, J.; Bania, J. (2020). The positive impact of lockdown in Wuhan on containing the COVID-19 outbreak in China. *J Travel Med*. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/32181488>
- [10] Library success. (2014). *M-Libraries*. Retrieved January 21, 2017, from libsuccess.org: http://libsuccess.org/index.php?title=M-Libraries#SMS_notification_services
- [11] Lippincott, J. K. (2010). A mobile future for academic libraries. *Reference Services Review*, 38(2), 205-213.
- [12] Liu, Y. Q., & Briggs, S. (2015). A Library in the palm of your hand: Mobile services in top 100University libraries. *Information Technology and Libraries*, 133-148. doi: doi:10.6017/ital.v34i2.5650
- [13] Medeiros de F. A; Daponte, C. A, Moreira, M. F. D.; Saez, M. & Cabrera, L. A. (2020). Impact of lockdown on COVID-19 incidence and mortality in China: an interrupted time series study. *Bull World Health Organ*. doi: <http://dx.doi.org/10.2471/BLT.20.256701>
- [14] Mohamedbhai, G. (2020). COVID-19: What consequences for higher education. *University World News*. Available from <https://www.universityworldnews.com/post.php?story=20200407064850279>
- [15] Nalluri, S. R., & Gaddam, B. (2016). Mobile library services and technologies: A study. *International Journal of Research in Library Science*, 2(2), 59-66.
- [16] Negi, D. S. (2014). Using mobile technologies in libraries and information centers. *Library Hi Tech News*, 31(5), 14-16.
- [17] Ogunsola, L. A. (2011). The next step in librarianship: Is the traditional library dead? *Library Philosophy and Practice (e-journal)*. Retrieved from <http://unlib.unl.edu/LPP/ogunsola2.htm>
- [18] Prabhakaran, A., & Kalyani, K. (2014). The thumb generation: ICT application in libraries. *Journal of Library, Information and Communication Technology (JLICT)*, 6(1-2), 42-47.
- [19] Saxena, A., & Yadav, R. (2013). Impact of mobile technology on libraries: A descriptive study. *International Journal of Digital Library Services*, 3(4), 1-58.
- [20] Shonhe, L (2017) A Literature Review of Information Dissemination Techniques in the 21st Century Era. *Library Philosophy and Practice (e-journal)*. 1731. Retrieved from <https://digitalcommons.unl.edu/libphilprac/1731>
- [21] Tao, D., McCarthy, P. G., Krieger, M. M., & Webb, A. B. (2009). The Mobile Reference Service: A case study of an onsite reference service program at the school of public health. *Journal of the Medical Library Association*, 97(1), 34-40. doi:10.3163/1536-5050.97.1.006
- [22] Verma, M. K. (2015). Changing role of library professional in digital environment: A study. *International Journal of Library Science*, 13(2), 96-104.
- [23] Verma, N. K., & Verma, M. K. (2014). Application of mobile technology in the Libraries. In M. Singh, P. K. Singh, & A. Kumar (Ed.), *Libraries: Towards digital paradigm* (pp.32-38). Uttar Pradesh: Bharati Publishers & Distributers.
- [24] Vollmer, T. (2010). Libraries and mobile technology: An introduction to public policy considerations. *ALA Office for Information Technology Policy*, 3.
- [25] Wang, C., Ke, H., & Lu, W. (2012). Design and performance evaluation of mobile web services in libraries: A case study of the Oriental Institute of Technology Library. *The Electronic Library*, 30(1), 33-50.
- [26] World Health Organization (2020). Report of the WHO-China Joint Mission on Coronavirus Disease 2019 (COVID-19). Available from: <https://www.who.int/docs/default-source/coronaviruse/who-china-joint-mission-on-covid-19-final-report.pdf>