KNOWLEDGE MANAGEMENT INITIATIVES AND INFORMATION AND COMMUNICATION TECHNOLOGIES TO FIGHT CORONAVIRUS (COVID-19)

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Abstract
This paper investigates how knowledge management initiatives (KMIs) and information and communication technologies (ICTs)could be used to fight coronavirus (COVID-19)in Nigeria. The rationale was due to the dilemmaof COVID-19, threatening lives of citizens across the world today, and Nigerian citizens amidst the batteredeconomy, where individuals had to struggle to find food for their livelihood. Thestudy applied thequantitative research approach. The quantitative research approach was majorly survey, where datawere collected from respondents through the use of questionnaire in sixty five hospitals in Nigeria.Result indicate that, different ICTs of computed topography scans, magnetic imaging, modern suture materials for surgeries, satellite monitoring, use of artificial intelligence, mobile tracking/mass surveillance, robotics, health sensors and apps, drones, and smartphones were used to support health sector in the fight of COVID-19. KMIs of brainstorming among medical practitioners, technical experience, willingness to share knowledge, routine reporting, codify tacit knowledge, organisational culture among others were strategically used in the fight of covid and other ailment. The study recommends reskilling among medical practitioners in order to cope with the use of some of the technological tools due to their unfriendly nature. Government should make provision for some of the ICT tools that were not available, such that, transformative services are ensured in the sampled hospitals.

Key words: KM initiatives, ICTs, knowledge and skills, covid, health sector, Nigeria

Introduction

The interest that spurred the author towards this study was based on the innovation and critical reflections that surround knowledge management initiatives (KMIs) and information and communication technologies (ICTs) in addressing health sector organisational problems. These (KMIs and ICTs) could be used in health sector to fight the coronavirus (COVID-19) which has caused loss of lives, economic decrease and lockdown across the world today. World Health Organisation (WHO) (2020) notes that, the COVID-19 manifest as a result of illness of cold, cough, fever and Acute Respiratory Syndrome. When these symptoms becomes unbearable among any individual, it is expected that such individual or person must have contacted the virus, especially when the person find it difficult to breath and his/her temperature is very high. The best advice for such person is to seek medical advice/attention, and go for testing for

COVID-19 become significant. WHO (2020) further notes that, the nature of the virus is such that, it is easily infectious disease especially when you come in contact with someone who has been infected and it was affirmed by WHO that the initial transmission was between animal and human beings. This affirmation means that the virus could be transmitted from camel to humans. Zhou, Yang, Wang, Hu, Zhang, Zhang, Si, Zhu, Li, Huang, and Chen (2020) study found out that, the coronavirus outbreak came from Wuhan, Hubei province, Central China, in a local seafood market, which has spread across the world so rapidly.

The virushas triggered uneasetension among citizens across nationsof the world, which was not supposed to be but due to quick death of people discovered resulting from severe acute respiratory syndrome (SARS) and Middle East respiratory syndrome (MERS) (Drosten et al 2003; Perkham, 2020), many people across the globe become more frightened. The author believed that, what triggers early death of those infected is because therespiratory organ of such individual has been damaged, possibly because medical attention was not sought on time to know how severe the infection is, in the body of the person tested positive. There are also cases of people reported to have been treated and get well, having sought medical attention on time and possibly because God the creator intervene in their cases. While this is the case, more people continue to be infectedas a result of non-adherence to stipulated precaution of the virus.

Globally, a devastating outbreak of this nature has occurred in time past, known as,the Spanish Flu (1918-1919) andHemagglutinin 1 Neurominidase 1(H1N1) (2009) (Zarocostas, 2009). Presently, the newestepidemic of COVID 19, has brought unparalleleddisturbance, fear, loss of lives and jobs, and decrease in several economic activities, thus, creatingopportunity for health sector to strategize on best practices and options to curtail COVID-19 pandemic, hence the author intention of investigating KMIs and ICTs in support of health sector to fight COVID-19 in Nigeria. WHO (2020) and other medical experts proposed the washing of hands with soap, social distancing, use of sanitiser, wearing of mask, as factors that could help curb the spread of the virus and for those already tested positive should be treated and quarantine for two weeks and continue to become self-isolate in order not to infect other people.

The utmost challenge which many nations of the world are faced with today in the spread of the COVID-19 is how to tackle misinformation and information disorder spread on social media (Chisita, 2020), now give way to application of KMIs and ICTs, being panacea for health sectors in readiness and response to curtailing the consequence of the virus since no vaccine has been found yet in answer to cure the virus. These (application of KMIs and ICTs)could be another ways through which the virus can be managed by health sector amidst other responses of social distancing, washing of hands, sanitiser, antiseptic soap, covering your face with mask, seek medical attention when you experience cold, cough, fever and difficulty in breathing earlier mentioned. Zarocostas (2020) argues that, in spite of the speedyresponse by WHO to COVID-19epidemic, whenever there is outbreak of health challenges, it has become a pre-ordainedceremony of panic among citizens, blather, lack of application of information literacy to information disorders and misappropriation, causing fear for those infected and not infected by the COVID-19. Health information specialists' resident in health sector, as one variableof this study, needs to be strategic to alleviateinformation disorders and misappropriation to create awareness of the use of KMIs among Health information specialists' of medical doctors and other health professionals to support health sector in the fight of COVID-19.

The insight/ideas, intuition, capability resident on medical doctors working in different hospital in Nigeria today,require specificand general work operations of the applications of KMIs and ICTs.The knowledge needed at this stage becomes essential forappropriate organisational goals and work performance of quality healthcare service delivery by medical doctors. Nevertheless, the battered Nigerian economy, resulting to serious health problems amidst COVID-19, where erroneous diagnosis occurs due to medical errors, poor medical/ICTs facilities of magnetic resonance imaging, computerised axial tomography, EMR software,

computed topography scans, magnetic imaging, modern suture materials for surgeries, paper based medical records, cardiotocography machine, x-rays, C-T scan machine, blood pressure machine(Weatherburn, Bryan, Nichollaas and Cocks, 2000), just to mention a few and inadequate KMIs among medical doctors and other health professionalswere no longer in proper use for diagnosis and consolidationof functional medical practices in general hospital in Nigeria. Every medical doctor and other health professionals are carriers of KMIs and the only opportunity to exhibit this initiatives is when engage in different activities of medical practices and related obligation that require the use of tacit knowledge in the organisation (hospital). But when KMIs are not put into use, the expectation is that, it belongs obsolete, because knowledge is evolving due to proliferation of information and knowledge on the internet on daily basis, hence the agitation for continuous application of KMIs. For example, when researchers, academics/scholars or medical doctors, just to mention a few, were newly admitted into the University for their Degree Course of study, the KMIs acquired compared till now, when the researchers, academics/scholars or medical doctors are already in their different workspace environment are no longer the same. Besides, when asked to harvest from these set of individuals (researchers, academics/scholars or medical doctors among others)it becomes also difficult, because some of them have not improved on their KMIs and others not willing to share their thoughts with others, hence the author suggest knowledge management practices of sharing tacit and explicit knowledge among colleagues to enhances and foster expansion of KMIs. The act of using ones initiatives or idea, some people would call it common sense, helps to build and strengthen the intellectual capability of the individual. The justification of investigating this study was due to the implication of KMIs and ICTs to support health sector in the fight of COVID-19 in Nigeria. It is believed that, if medical doctors could appropriate or put into full use their KMIs and ICTs to support healthcare service delivery, considering how rapid the virus is spreading, the tacit knowledge or ideas/intellect of medical practitioners would not decay, because it is being used on daily basis. The author emphasise that, while the battered Nigerian economy, is struggling withseveral health challenges, coupled with the unprecedented COVID-19,how would the 200, 963, 599 million people (NPC, 2020)in the economy be catered for or treated when most of the health sector facilities are becoming obsolete and non-functional, except medical doctors and other health professional becomes radical in their approach to apply KMIs and ICTs for best medical practices. The author believed that when this is thoughtfully carried out, it would not only enhance and promote the use of KMI and ICTs to support health sector in the fight of COVID-19, and to better serve citizens of the country. But transform the entire mind-set of other medical practitioners and health sector system in Nigeria, because the author believed that, the findings from this study would impact society through continuous awakening and political officers in power in Nigerian.

Elrehail, Trad and Algraibeh (2013, 316) assert that, KMIs distillates knowledge of the individual, created through knowledge management (KM) processes of socialisation, externalisation, combination and internationalisation. The KM processes could help transfer created knowledge such that, it can be utilised to create benefit for the organisation and the individuals. Elrehail, Trad and Algraibeh (2013, 316) further note that, KMIsplay important role due to the way it is used to improve service delivery in healthcare organisations. The postulation made here is that, information and knowledge which medical doctors and other health professionalshave acquired, either through their interactions, experiences at work place, training had and attending programmes, are fused together, such that, the commonalities and differences drawn, are combined, in order to solve specific problem especially now that the world, Nigeria inclusive, is battling with COVID-19. KMIs is not only the accrued talents of staff members but alsocertaintaxonomy software of KM and facilities, whichsupport the application of staff member ideas. Thesecan be used to check medical errors observed, diagnosis and operationscarried out on regular basis in the hospital (organisation). The medical doctors could apply their knowledge, experiences and skills through available information on patient records to analyse the circumstances and possibly carry out further research by browsing through the internet to verify some of the things found out before arriving at a conclusion on how best to treat the patient when there are no substantive proof on test carried out. The implication of KMIs at this stage becomes significant as it could help the health practitioner to recap all retained knowledge, such

that, it could be used to solve health problems, now that the virus is the concern of all citizens. The taxonomy software of KM that has supported medical doctors and other health professionalsin recent times are data mining, knowledge creation application, content management, and document management system (Elrehail, Trad and Algraibeh, 2013). These taxonomy are software of KM integrated and used (Walid, 2011) when severe medical diagnosis occur, patient records are required, in order to report on the treatment of cases/operations had before gathering data and other information for verification and alignment purposes. The medical doctors would use them to trace different ailment, that could have been difficult to trace under normal circumstances and before the diagnosis could take effect, the medical doctors check the health history of the patients through the effort of document management system of patients' records before attempting to carry on with further investigations. These could help manage information and knowledge on a broader context (Walid, 2011) which were depositedas metadata ininstitutional repository and databases of the hospital.

The use of KMIs and ICTs in solving health problem of COVID-19 could save lives, time and cost especially in this era of COVID-19 pandemic, where fourth industrial revolution are propagated, causing influx of information and knowledge on daily basis in the internet. The implication is that, instead of spending so much money and time hiring medical doctors andother health professionals from outside the country, or other organisation, present medical staff members' of the hospital with their expertise and available ICTs/facilities could be used in solving citizens health problems and fight the virus. The ideas of hiring an expatriates to solve a particular problem in healthcare organisation is not bad, however,considering the present dwindling economic situation of the country, Nigeria, where citizens could no longer cope, or not even cared for, loss of jobs are on the increase, and even at some point of emergency and special needs, the hospital management cannot even meet the needs of their patients and staff members, the idea of hiring foreign health professionals, is no longer important, hence the advocacy for the useof KMIs and ICTs in support of health sectors/hospitals, to salvage the organisation limited resources, and community/citizens commitment for their health needs.Meanwhile, taking cognisance of their staff member expertise, could also help to identify and reposition them for self-esteem in application of the use of KMIs and available ICT facilities.

At this time of the year, where the world is faced with this COVID-19 pandemic, the application of KMIs and new ICTs could advance the support health organisation (hospital/health sector) requires in the curb of the COVID-19 pandemic. The authors envision that, staff members' would not even bother whether their wages or salaries are paid or not, provided the problems of COVID-19 are solved in healthcare service delivery. Study by Tang, Brody, Quinn, Chang and Wei (2010) note that, the advancement in society in diverse circumstances depends largely on their preparedness to recognise serious mechanisms of awareness, analysis and decision/action. It therefore means, for health sector in Nigerian hospitals to fight COVID-19, they should be prepare to grow and advance in their service delivery, by engaging every individual, medical doctors, and health professionals the immediate application of KMIs, amidst using ICTs, because extant literature established that, KMIs helpsindividual to think out the box, especially where there are critical issues that requires attention. Reflecting on the components made by Tang et.al (2010), the time to recognise, and analysis the scenario where the economy has been and advance to take action/decision is now. This would propel individuals, medical doctors, and related health professionals in health sector to start applying their KMIs through teamwork, community of practices, sharing knowledge such that, health sectors in Nigeria are revived to standards. Nigeria being the context of this study, consists of 200, 963, 599 million people (NPC, 2020). Nigeria has thirty-six states with Federal capital territory, situated in Abuja Nigeria (NUC, 2020). There aresix geo-political zonesacross the thirty-six states in Nigeria. The large population of the economy made the author to concentrate on only one of the state, of the thirty-six state in the country. The justification of choosing one of the state, Delta, was due to nearness to the research environment, access to information from respondents for this studyand that the researcher is resident and have worked in Delta State for over twelve years. Delta State has over 4.2

million people with diversity of twenty five local government areas anddifferent ethnic groups in Urhobos, Ijaws (Izon), Kwales, Isoko, Itsekiri, Igbos, Okpe and Anioma, Ika (Brief History of Delta State, n.d). The state has over 65 hospitals management by the state government of Delta State being considered for this study today(list of tertiary health facilities in Delta State, n.d). This study has a correlation to related studies carried out in different countries of the world. Since Delta State, Nigeria, in Africa has not been represented in this kind of study, it becomes imperative as it would fill the gap of universal knowledge in health knowledge management (HKM) and use of ICTs, contextual setting and methodological approach. The findings from this study could be incorporated into policy making on best medical practices and expansion of medical practitioners experiences, knowledge and skills in healthcare service delivery to patients.

Objective of the study
In this research paper, the author investigates KMIs and ICTs in support of the fight of COVID-19 in Nigeria. In accomplishment of this task, the following research objectives were raised. They are:
1. Examine the types of ICTs that could support health sector in the fight of COVID-19
2. Examine KMIs used to enhance the fight of COVID-19
3. Analyse publication trends by means of communication in health KM

Methodology
The methodology applied in this study was the quantitative research approach. Taylor, Kermode and Roberts (2007) note that, quantitative research approachis useful in any research investigation. Quantitative research approach help in triangulation of results such that, areas of gap and difference are unveil. In order to expand the study, the author conducted publication trends in health KM using the qualitative document analysis of literature harvested from different databases of Scopus, Science Direct and institutional repositoryof articles in KMIs. The survey research method used questionnaire to collect data from respondents in the identified various general hospitals in Delta State. The questionnaire administered were on how respondents use ICTs/other medical equipment's and KMIs in their medical practices.It took the researcher one month, with a follow up calls to get feedback from respondents who have contact details, on this research paper. The essence of the follow up calls to get feedback from respondents was the delay attributed to collection of data from respondents. Many researchers today use both qualitative and quantitative in order to augment their research findings on views from respondents. The census sampling technique was use to select the entire general hospitals in Delta State (see table 1). The entire health sector (general hospitals) forms the population for the study, which is 65. It was reported that, of the 65 health sector (general hospital), there were 2 to 3 medical doctors in each of the hospital sampled, except Delta State University teaching hospital, Oghara (Delsuth) having more than 15 medical doctors. The reason being that, it is a teaching hospital where medical doctors are trained in their medical practices.

The 65 general hospitals has different department of fertility treatment department, cardiology, urology, ophthalmology, paediatrics, dental, laboratory, medicine, obstetrics and gynaecology, physiotherapy, radiology, surgery, among others. The rationale of using the total enumeration was due to the small size of the hospital population in Delta State. Babbie (2013) notes that when a study population is very small, the total number may be use for the study. This is also known as census method, beingapplied, instead of using a sample. Therefore, the sample size of this study is the 65 general hospitals in Delta State(See Table 1).While carrying out this research investigation, the researcher developed a questionnaire, which was later scrutinised by an expert in Library and Information Science discipline at the Delta State University, Nigeria, before it was distributed across the 65 general hospitals. The questionnaire developed was printed into one hundred and thirty (130) copies, as two questionnaire was administered at each general hospitals. Of the 130 copies of questionnaire administered across the 65 general hospital, 120 copies was retrieved back was analysed for this study. The 120 copies of questionnaire retrieved gave 92.3%. During the

research investigation, the researcher had to travel round the hospitals to administer the questionnaire to the respondents. Before the questionnaire was given out to respondents, the researcher made his intention knownabout what the study is all about during the time of the visit to the hospital to respondents. Data gathered were analysed using frequency.

Table 1: Health sectors (hospitals) in Delta State, Nigeria

S/no	Health sector/institution	Locations/Address
1	General hospital Issele-Uku,	Issele-Uku
2	General hospital Onicha-Uku	Onicha-Uku
3	General hospital Onicha-Olona	Onicha-Olona
4	General hospital Ogwashi-Uku	Ogwashi-Uku
5	General hospital Ubuulu-Uku	Ubuulu-Uku
6	Government hospital Isheagu	Isheagu
7	General hospital Bomadi	Bomadi
8	CottagehospitalOgriagbene	Ogriagbene
9	General hospital Burutu	Burutu
10	Government hospital Kiagbodo	Kiagbodo
11	Government hospital Ojobo	Ojobo
12	Government hospital Facados	Facados
13	General hospital Ogualagha	Ogualagha
14	General hospital Abraka	Abraka
15	General hospital Isiokolo	Isiokolo
16	General hospital Eku	Eku
17	TBL Eku	Eku
18	Cottage hospital Erhoike	Erhoike
19	General hospital Oghara	Oghara
20	Cott hospital Mosogar	Mosogar
21	Government hospital Ugbevwe-Jesse	Ugbevwe-Jesse
22	General hospital Owa-Oyibu	Owa-Oyibu
23	Government hospital Umunede	Umunede
24	Government hospital Owa-Alero	Owa-Alero
25	Central hospital Agbor	Agbor
26	General hospital Agbor-Alidinma	Agbor-Alidinma
27	General hospital Abavo	Abavo
28	General hospital Ozoro	Ozoro
29	Government hospital Ofagbe	Ofagbe
30	General hospital Owhelogbo	Owhelogbo
31	Central hospital Oleh	Oleh
32	Government hospital Oviara	Oviara
33	Government hospital Uzere	Uzere
34	General hospital Olomoro	Olomoro
35	General hospital Aboh	Aboh
36	General hospital Umuolu	Umuolu
37	Government hospital Ashaka	Ashaka
38	Central hospital Kwale	Kwale
39	Government hospital Orerokpe	Orerokpe
40	Cottage hospital Mereje	Mereje
41	General hospital Ibusa	Ibusa

42	General hospital Akukwu-Igbo	Akukwu-Igbo
43	Government hospital Ebu	Ebu
44	Central hospital Asaba	Asaba
45	General hospital Okwe	Okwe
46	General hospital Patani	Patani
47	Central hospital Sapele	Sapele
48	General hospital Otor Udu	Otor Udu
49	General hospital Obiaruku	Obiaruku
50	Government hospital Umutu	Umutu
51	Central hospital Ughelli	Ughelli
52	Government hospital Orogun	Orogun
53	Government hospital Ehwere	Ehwere
54	Government hospital Agbarho	Agbarho
55	Government hospital Otu Jeremi	Otu Jeremi
56	Government hospital Ewu	Ewu
57	Central hospital Ekpan	Ekpan
58	General hospital Koko	Koko
59	Government hospital Abigborodo	Abigborodo
60	Cottage hospital Madagho	Madagho
61	Central hospital Warri	Warri
62	Government hospital Omadino	Omadino
63	General hospital Ogbe Ijaw	Ogbe Ijaw
64	Government hospital Ogidigben	Ogidigben
65	Delta State University Teaching hospital Oghara (DELSUTH)	Oghara

Source: Hospital Management Board/field work, 2020

Results
The findings from this study cut across the types of ICTs that were used to support the fight of COVID-19, how KMIs and ICTs enhanced health sector in the fight of COVID-19, andpublication trends by means of communication in health KM.

Types of ICTs that could support the fight of COVID-19 in Nigeria
Result indicates that there were different types of ICTs that could support the fight of COVID-19, which ranges from specific to generic type of tools. The tools comprises of clinical informatics, COVID-19 test kits, magnetic resonance imaging, interconnected computers, computerised axial tomography, electronic medical record (EMR) EMR software, computed topography scans, magnetic imaging, modern suture materials for surgeries, paper based medical records, cardiotocography machine, x-rays, satellite monitoring, use of artificial intelligence, mobile tracking/mass surveillance, robotics, C-T scan machine, blood pressure machine, audio-visual media. These wereused to safeguard the safety of patients, especially those with the cases of the virus and other ailment across the various hospital sampled. Although, some of the hospitalssampled does not have all the mentioned ICTs.Verbatim reports also indicate that alternative ways of treating COVID-19 was the use of herbal medicine. The findings corroborates with Nair (2014), whichemphasis on the need for patients to have access to better treatments, through services rendered by medical practitioners on the policy of standardised living of healthcare systems. The system should ensures health/medicalprofessionals' communicate the required processes ofknowledge sharing of general medical practices. American Medical Informatics Association (2018) made reference to clinical decision support, clinical information systems, computerised physician order entry (CPOE), computerised decision support systems (CDSS), and diagnosis image archiving (DIA) as relevant ICTs/medical tools could be relevant in healthcare system. These according to the author of this paper could fight different ailment and COVID-19

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in tracing diagnosis of the virus. Kaushal, Shojania and Bates (2003) establish that varieties of computer-based systems could be used to support the automation of medication processes given to patients in order to ensure consistent and thorough patterns of treatment.

KMIs that enhancedthe fight of Covid-19
Result in Table 2 indicate that, KMIs were strategically used by medical practitioners in the fight of COVID-19and other related ailment.The KMIsidentified cut across retaining employees with valuable knowledge (89, 74.2%), brainstorming among medical practitioners (118, 98.3%), technical experience (110, 91.7%), willingness to share knowledge (109, 90.8%), routine reporting (110, 91.7%), dialogue among colleagues (120, 100%), codify tacit knowledge (110, 91.7%), organisational culture (98, 81.7%), people's management (90, 75%), organisational processes (97, 80.8%), creating awareness (110, 91.7%), learning procedure (120, 100%) and divergence views (110, 91.7%).It can be noticed from findings that, brainstorming among medical practitioners, technical experience, routine reporting, dialogue among colleagues, codify tacit knowledge, creating awareness, learning procedure and divergence views are fundamental in medical practices and in the fight of covid-19. This made Haughom (2014) refers to access to valuable knowledge either through consulting internet, reading medical books and chatting with other fellow colleagues become significant in ideal decision making. There are scenario where medical practitioners become confused regarding some patient ailment, especially this pandemic that has lock everyone at home and not knowing what to do. The need to brainstorm with other colleagues while seeking God's mercy and grace could be the way out at this point. Haughom (2014) further notes that, in this ever changing world of complexity of different ailment, handling in-house created knowledge of the organisation is very crucial. The in-house created knowledge refers to the knowledge resident among medical professionals that are embedded in their processes, policy, practices and ICTs. These when appropriately harness turns in KMIs that could help the individuals or medical practitioners in carrying out their daily responsibilities, hence it becomes fundamental to make it part of their lives.

Table 2: KMIs used to enhance the fight of Covid-19   N=120

KMIs used to enhance the fight of Covid-19	F	%
Retaining employees with valuable knowledge	89	74.2
Brainstorming among medical practitioners	118	98.3
Technical experience	110	91.7
Willingness to share knowledge	109	90.8
Routine reporting	110	91.7
Dialogue among colleagues	120	100
Codify tacit knowledge	110	91.7
Organisational culture	98	81.7
People's management	90	75
Organisational processes	97	80.8
Creating awareness	110	91.7
Learning procedure	120	100
Divergence views	110	91.7

Source: Data from field work 2020

Publication trends by means of communication in Health KM
Result in Table 3 indicate that, most of the publications in health KM were channelled through research articles(1602, 73.7%), followed byreview (275, 12.7%), conference paper (117, 5.38%),book chapter (98, 4.51%), note (28, 1.29%), book (27, 1.24%) and editorial (12,0.55%). The results indicate that, most of the publications in health KM are communicated as indicated above. The reason could be that publications in research articles are more current, as well as review, conference papers

and book chapters. It could be that due to rigorous of blind review their substance are of high quality and that many higher education institutions prefer publications in articles, review and book chapters in promoting their academic staff members. KM encompasses every field of study and it is gaining momentum as people are gradually delving into publishing in that subject areas now.

Table 3: Publication trends by means of communication in health KM

Scopus (N=2, 173)

Rank	Publication year Record count	%
1 Article 1602	73.7	
2	Review	275
12.7		
3	Conference paper	117 5.38
4	Book Chapter	98
4.51		
5	Note	281.29
6	Book	27
1.24		
7	Editorial	120.55
8	Letter	60.28
9	Erratum 30.14	
10	Short survey	30.14
11	Undefined2	0.09

Source: Field work 2020

Discussion of Findings

Divergence and commonality views were noticed in the findings obtained between the types of ICTs and KMIs that were used to support health sector in the fight of COVID-19. These became profound in present scenario due to how severe the spread of the virus was in most nation of the world and Nigeria, to be specific. The result obtain made Chaturvedi(2020) remarks on the use ofsatellite monitoring, use of artificial intelligence, mobile tracking/mass surveillance, robotics, health sensors and apps, drones, smartphonesbeing significant technological tools used in the fight of COVID-19 in most developed world like China, US, U.K. Although some of these tools are still absent in most of the health sector in Nigeria. Miah, Hasan and Gammack (2016) indicate on cloud computing as tool that supports health professionals to regulate and retain patient's health records, in order to observe the patients progress based on the medical practitioner diagnosis and analysis of their health status. This is very important since patients health status could change anytime, hence appropriate monitoring becomes crucial. Shekar and Otto (2014) made reference to strengthening capacity of health professionals in order to curtail changes of different ailment and diagnosis experienced in recent time in the various health sectors sampled. The reason was due to inadequate skills and knowledge experienced in some health professionals in some of health sectors, as some of the services are of poor quality delivery (Shekar & Otto 2014). This made the author of this paper to suggest reskilling for medical practitioners and individuals in order to make use of ICTs and related medical equipment's. This made Berkman et al. (2010) refers to health information literacy which could assist medical doctors and other health professionals due to changes that have evolved across the world and proliferation of information on the internet. The health information literacy would health medical practitioners to acquire,comprehend, use and connect health information to take appropriate decisions regarding patients ailment based on diagnosis found. The spread of the virus (COVID-19) demands appropriate KMIs in addressing not only the virus but also infodemic/misinformation of the symptoms of COVID-19.

Ramiah (2020) refers to smartphones as significant in the reduction of exposure to the spread of the virus, such that, distribution of food items are sent from one specific place to another through application of uber eat and food delivery agents. This is common in most developed nations, like China, US, Australia, Canada, and some Africa countries like South Africa, Angola, Botswana and Nigeria.Mobile money payment was another device to reduce contact with paper money since the spread could carry the viruses for up to several days on the paper money and to avoid touching paper money, hence the recommendation of the use of mobile money transfer (Ramiah, 2020). The author envision that, if most of the mentioned ICTs/medical equipment's are acquired for health sectors in Delta State, the fight against different ailment and COVID-19 would be an easy one since no vaccine has been found yet to cure the virus.

Haughom (2014) reiterates that, KMIs facilitates decision-making competences, builds knowledge organizations, motivate learning practices, substitute innovation and promotes leadership behaviour. The performance enhancement of medical practitioners depends largely on how they were able to apply the aforementioned factors above in discharging their responsibility of healthcare service delivery to humanity. KMIs helps to quicken intake of clinical and operational task based on how they have appropriated specific goals of the health sector to their personal goals. When it comes to applying KMIs that could support health sectors, self is denied, hence you see all over the world today, the healthcare of the individual/patients are of utmost importance to the medical practitioners itself. The author envision that healthcare sector is such a multifaceted and adaptive system that require critical KMIs of medical practitioners otherwise, it becomes difficult to tackle hence the need for recognising, organising, monitoring and evaluating the efficiency of quality healthcare service rendered through implementation practice strategy in the health sector.

ITU News (2020) views digital health technologies, artificial intelligence, robotics, big data, 5G as an innovative tools that could be used to test those with the symptoms, treat, and saves lives of those already infected, such that, they could have quality improvement of their health status, especially at the peak of the fight against COVID-19. Mitra (2020) alludes to artificial intelligence (AI), as an important tool used to detect, diagnose and screen COVID-19 symptoms and those infected in most developed world. The use of AI is still not feasible yet in most developing world due to the cost of purchase. This it does by news report on government channels and social media interface. These among others are best opportunity through which ICTs could enhance the support offered to health sector in treatment of different ailment and fight of COVID-19. Mitra (2020) further notes on the use of drones for delivering medical supplies. The use of chabots for knowledge and information sharing, and high-tech smart helmets by medical personnel have serve a million dollar services in the fight against COVID-19 (Mitra, 2020). The use of smartphones, big data and 5G for networking with friends, family and work from home since there is lockdown among countries of the world is another essential thing that could help in the fight of COVID-19 since social distancing and work from home has been recommended (Ramiah, 2020). Although the use of the above technologies could have its own challenges but its benefits towards the fight of COVID-19 and other ailment cannot be underestimated in present day knowledge economy.

Conclusion
This study emphasised that KMIs and ICTs are very crucial in the accomplishment of task irrespective of the organisation. Therefore, applying it to health sector services especially in the fight of different ailment and COVID-19 cannot be undermined in present day information and knowledge economy. The rationale that necessitate this study was the outbreak of covid-19, amidst the battered Nigerian economy, resulting to serious health problems of erroneous diagnosis occurrence due to medical errors, poor medical/ICTs facilities necessitated this study.

This study which considers KMIs and ICTs in support of the fight of COVID-19 in Nigeria made use of quantitative research approach. Findings reveal that, different types of ICTs of magnetic resonance imaging, interconnected computers, computerised axial tomography, electronic medical record (EMR) EMR software, computed topography scans, magnetic imaging, modern suture materials for surgeries, paper based medical records, cardiotocography machine, x-rays, C-T scan machine, blood pressure machine, audio-visual media, satellite monitoring, use of artificial intelligence, mobile tracking/mass surveillance, robotics, health sensors and apps, drones, smartphoneswere believed to have supported health sector in the fight of COVID-19. This brought quality healthcare services of individual citizens in the country.

It was established that, when KMIs and ICTs are fused together, there is the assurance that the socioeconomic status of citizens would be transformed.The study further stretched on the publications trends in health KM between 1999-2019, by means of their communication. KMIs and ICTs is believed to have supported and enhance health sector institutions. It was noted that KMIs and ICTs are essential in resolving the dilemma of COVID-19. Therefore,it is imperative for medical professional to have basic knowledge and skills of the use ICT. The reason was due to the evolving nature of certain technological tools in recent times. The lack of basic knowledge and skills application for ICTs use among medical practitioners could have adverse effect on performance of the different roles. The basic knowledge and skills refers to means how the operating systems works. Without prior knowledge and skills on how to connect the different technological tools mentioned above, it becomes difficult carrying out certain basic functionality in the health sector institutions. For instance, a scenario where medical practitioners have to search the Internet, navigate within computer system environment to search for information that would enable him/her solve a minor ailment, it becomes when the technical know-how is lacking. This is also applicable to the use of other technological tools like artificial intelligence, mobile tracking/mass surveillance, robotics, health sensors and apps, drones, smartphones to fight COVID-19. This made the author to suggest the need for medical practitioners embark on regular reskilling to acquire and update their knowledge and skills of the use of some of these unfriendly nature of tools.

The argument that brought why KMIs were quite enriching and interesting if appropriately harnessed was due to serious health problems of erroneous diagnosis occurrence, poor medical facilities amidst Nigerian battered economy, where electric power supply is inconsistent, poor funding of health institutions. When medical practitioners continue to brainstorm, apply certain technical experience, be willingness to share their knowledge, operate on normal routine, reporting on when to dialogue among colleagues, solutions to how covid and other ailment could be solved will bring assurance. KMIs of the codification of tacit knowledge, organisational culture, people's management, organisational processes, creating awareness, learning procedure and divergence of views among medical practitioners did not only supported medical practitioners but became the engine oil that lubricate their practices on regular basis. The reasons is that, KMIs could contend with the dilemma of COVID-19 and related ailments. The actualisation of this drive depends on the organisational culture; the calibre of people that works in the health sectors and the will power and affirmed policies that was supposed to be followed, if not neglected. The study also affirmed that, health sectors in Nigeria could only be sustained, only when medical practitioners become proactive in KMIs applications. The reason is that, several production of employees' lacks valuable knowledge for retention purposes. Unlike medical practitioners who have to go extra mile in the sustainability of patient lives and the organisation, in order for them not to suffer. The satisfaction beckon on organisational roles and diverse KMIs offered in health sector is determine in the provision of adequate ICTs to work with by medical practitioners. The authors of this paper believed that, when KMIs of individual to organisational level, are fused together, the goals of healthcare service delivery, especially in the fight of covid-19 is minimised to a certain level.

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