Level of Compliance to Covid-19 Prevention Protocol in Primary Healthcare Centres in Obingwa Local Government Area

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ABSTRACT: *This study was carried out to assess the level of compliance to COVID-19 prevention protocol in in primary healthcare centres in Obingwa LGA. Eight research objectives and corresponding eight research questions were raised to guide the study along with three hypotheses. The Cross-sectional research design adopted and 250 primary healthcare workers were sampled using multi-stage sampling technique. Questionnaire and checklist were used for data collection while descriptive and inferential statistics contained in SPSS version were used for data analysis, the research question were answered using descriptive statistic while hypotheses were tested using independent sample t-test and ANOVA. The results revealed that; there is inadequate provision of facilities and material required for effective compliance to COVID-19 prevention protocols in the primary health caters within the studied area because only four (4) out of the eleven (11) identified essential facilities are fairly available in the sampled study area. the results revealed that the level of compliance to Coughing and Sneezing Protocols is high (2,79> 2.50), compliance level for Personal Protective Equipment Protocols is low (2.07<2.50), compliance level for Self-isolation Protocols is high (2.89>2.50), the level of compliance for Mouth and Nose Covering (Masking) Protocols is low (2.21<2.50), the compliance level for Social and Physical Distancing Procedure is high (2.53>2.50(and compliance level for Hand-washing Procedure is low (2.08<2.50). the results of the hypothesis testing revealed that the demographic characteristics (gender, type of work and years of experience) are significant predictor of compliance to the COVID-19 prevention protocols at 0.05 significance level. It was concluded, among others, that there is low level of compliance to COVID-19 prevention protocols by the health care workers in the study area. It was, therefore, recommended, among others, that government, and concerned non-governmental organizations should make provision for the facilities and material needed for effective compliance to COVID-19 protocols in primary healthcare Centre in the studied area.*
KEYWORDS: COVID-19, Compliance, Prevention, Protocols.

INTRODUCTION

Severe acute respiratory syndrome coronavirus (SARS-COV) otherwise known as Covid-19 is a worldwide pandemic that affected the whole world (Yang et al., 2020).. COVID-10 pandemic is the global outbreak of communicable disease that started in December 2019 in Wuhan, China (Yang et al., 2020). The emergence of COVID-19 infection in different parts of the world cannot be underestimated because it has posed a big health challenge globally (Zhu et al., 2020). This scenario has made scientist venture into research to find out the consequence of the virus (Sheikh and Rabin, 2020). There were confirmed cases of Covid-19 in different countries including African countries. After the spread of the virus from China to different parts of the world, there has been a concern about the global health challenge as literature contends (Wang et al., 2020). World Health Organization (WHO) identified thirteen countries in Africa including Nigeria with potential high-risk of the contagiousness of the virus. As a result of the severity of the pandemic to the global health challenge, according to the WHO (2020a; 2020b), the outbreak of Covid-19 is considered as a Public Health Emergency.

The virus primarily spreads among people during close contact, often via small droplets produced by coughing, sneezing, or talking (WHO, 2020). People, including health workers, may also become infected by touching a contaminated surface and then touching their eyes, nose, or mouth especially nurses who spend more time with patients than other professionals. The symptoms experienced by persons who contracted the COVID-19 virus include cough, fever, headache, and chest pain including mild to moderate respiratory illness. Older people and those with underlying medical problems are more likely to develop severe illness (WHO, 2020). The best way to stem the tide of this deadly scourge on the human population is to get adequate information about the virus, its causes and how it spreads. More so, washing of hands or using an alcohol-based rub frequently and not touching one's face, including wearing of personal protective equipment (PPE) by health workers, especially nurses, are right preventive measures against the disease (WHO, 2020). Everybody, especially nurses that are always in close contact with the patients, is expected to practice appropriate preventive strategies which are the most important interventions to prevent themselves from being infected by the coronavirus disease.

In Nigeria, the first case of COVID – 19 was confirmed on the 27th of February 2020 in Lagos state, by the Federal Ministry of Health. As a result, the Federal Government, through the Federal Ministry of Health began to put measures in place to control person–to–person transmission and spread of the virus in Nigeria. Consequently, a Presidential Task Force (PTF) was inaugurated by the President to coordinate all strategic efforts towards containing the spread of the virus (Majemu, 2021). The regular number of reported cases of COVID-19 was collected from the Nigeria Centre for Disease Control (NCDC) and the Abia State Ministry of Health's publicly accessible epidemic situation survey, as well as a preliminary epidemiological overview of the COVID-19 outbreak in

Abia state between February 27th and June 28th, 2020, and a breakdown of the disease in the state's local governments. In Abia state,, a total of 374 reported cases and 8 COVID-19 deaths were registered in 11 of the state's 17 local government areas. Abia state has recorded 216 cases of COVID-19 as at 4th March 2020 (NCDC, 2020). This makes the State 19th placed in Nigeria with 14 patients recorded dead through the disease.

In order to contain the spread of COVID-19 pandemic which has claimed many lives globally, authorities across the globe have adopted strict measures aimed at protecting vulnerable individuals from contagion. These measures include enforcement of social distancing rules, total national lockdown, and ban on international flight, among others. According to recent estimates, complying with mitigation measures can save up to 20 million lives globally, and 38.7 million lives if the measures are adopted early (Wang et al., 2020). Closely related to this estimate is an excerpt of media briefing by WHO Director General on March 16, 2020. Health workers play a critical role not only in the clinical management of patients but also in ensuring that adequate infection prevention and control measures are implemented in health care facilities. As initial surveillance activities focus primarily on patients with severe disease the full spectrum of disease, including the extent and fraction of mild or asymptomatic infections that do not require medical attention, will not be immediately clear, along with the role that such infections may play in secondary transmission. Understanding COVID-19 infection among health workers and the risk factors for adverse outcomes is important not only for characterizing virus transmission patterns and risk factors for infection, but also for preventing the future infection of health workers and other patients, for informing and updating infection prevention and control measures at health care facility and national level, and for reducing secondary COVID-19 transmission within health care settings.

The significant occupational risks that increase the rate of transmission of COVID-19 infection among health workers, especially nurses, include late recognition or suspicion of COVID-19 in patients, working in a higher-risk department, longer duty hours, sub-optimal compliance to measures for prevention and control of infection such as effective hand-washing and lack of or improper use of personal protective equipment (PPE). The WHO on 28th April 2020, raised awareness of health workers on the need for infection prevention and control (IPC) protocol which can aid the reduction of the number of deaths and injuries associated with work (WHO, 2020). Focus on good health behaviors, such as covering coughs and sneezes with the elbow and washing hands. Help children understand the basic concepts of disease prevention and control. Use exercises that demonstrate how germs can spread. For example, by putting colored water in a spray bottle and spraying over a piece of white paper. Observe how far the droplets travel. Demonstrate why it is important to wash hands for 20 seconds with soap and water - Put a small amount of glitter in hands and have them wash them with just water, notice how much glitter remains, then have them wash for 20 seconds with soap and water. Have people analyze texts to identify high risk behaviors and suggest modifying behaviors.

Despite the huge success of these measures across many countries, implementing them, and ensuring that people maintain social distance and refrain from unnecessary outdoor activities in authoritarian and liberal societies for weeks result into ultimate human challenge (Habib et al., 2021). This is consistent with Ibrahima (2020) editorial review following the 2020 pandemic that killed millions of people worldwide: "It does not lie in human nature for a man who thinks he has only a slight cold to shut himself up in rigid isolation as a means of protecting others on the bare chance that his cold may turn out to be a really dangerous infection" (p. 15).

Finding reveals that there is no published empirical or theoretical evidence that examined people's compliance of COVID-19 guidelines in Nigeria, and factors that shape such compliance. However, related studies have been conducted to: track public perceptions towards the reality of the disease (Ezigbo & Ifijeh, 2020; Falokun., 2020; Adenubi et al 2020a and Adenubi et al 2020b); examine its psychological distress and experiences (Olapegba et al., 2020); and forecast its spread (Reuben et al., 2020), among others. Similar studies had been conducted in country-specific settings, employing different analytic methods. For example, Folmer et al. (2020), investigated the level of compliance and adherence to social distancing measures in the Nigeria, with a view to understanding the processes that sustained citizens' compliance; how their compliance with mitigation measures developed; and how resources that sustained their compliance developed throughout the study period. Using two waves of online surveys administered on 2087 nationally representative samples between 7-10 and 21-23, July, 2020, the authors reported increase in compliance as opposed to decline in their previous study between May-June. Overall, they found important predictors of compliance, including capacity to comply, perceived health threat, and support for mitigation measures. Similarly, Odikpo et al (2020), examined the level of compliance with COVID-19 mitigation measures in the Nigerias. Using an online survey administered to 570 participants across 11 states that adopted such measures, the authors found that while perceptual deterrence was not associated with compliance, the later does depend on people's capacity to obey rules, opportunity to break rules, self-control, moral support and social norms.

Several studies have revealed the fact that some Health care workers (HCWs') have inadequate awareness of safety protocol for prevention practices particular as concerned COVID-19 (Wu & M-Googan., 2020). Moreover, knowledge and compliance to COVID-19 safety protocol can reduce the rate of infection among the HCWs' (McEachan *et al.,* 2016). With regards to practices of compliance to COVUD-19 preventive measures, research evidence shows that it is associated with work experience, working-time, and other factors. Non-frontline HCWs were less likely to maintain quarantine with family than frontline workers, especially nurses (Minghe *et al.,* 2020). Moreover, HCW must, in most cases, collect saliva samples from patients' pharyngeal isthmus, and if they neglect their protection in this process, they may significantly increase the risk of the infection among themselves. Moreover, they are more vulnerable to the infection if they do not wash their hands carefully and frequently (Murthy *et al.,* 2020). Therefore, it is necessary to possess adequate knowledge and comply with the ideal protocol to prevent further contamination

and infection (WHO, 2020) despite the barriers that might be present within the practice settings including inadequate PPE.

In Nigeria, however, there are lots of reports presently on the alarming level of infection and death mostly among frontline health care workers. Poor compliance to COVID-19 safety and preventive measures seems to be the prime cause of this increasing rate of COVID-19 infection among the health care workers. The extent of what health care workers know about the preventive measures and painstaking comply with these safety protocols seemingly determines the extent of their being protected from the disease. Therefore, there is need to assess the level of compliance with the practice of safety preventive measures or protocol to COVID-19 among health care workers. Thus this particular study is focused on the assessment of compliance to COVID-19 safety protocols among health workers in primary health centers in Obingwa LGA of Abia state

Aim and Objectives of the Study
The aim of this study is to assess the level of compliance to COVID-19 safety protocol in Abia state, particularly among primary health care workers in Obingwa LGA, and the objectives includes,
1.   To find out the level of compliance of the health care workers to effective hand-washing protocols for COVID-19 prevention.
2.   To assess the level of compliance of the health care workers to social and physical distancing protocols for COVID-19 prevention.

Hypothesis Testing
The null hypothesis raised to in guide this study are as follows;
1.   There is no significant difference in the compliance of the workers to COVID-19 prevention protocols based on their gender
2.   There is no significant difference in the compliance of the workers to COVID-19 prevention protocols based on the workers years of experience

METHODOLOGY

This study adopted cross sectional design. The population of this study comprised of all the primary health centers in Obingwa local government area of Abia state. According to the Abia State Strategy Health Development Plan, as at November 25 2021, there are 687 primary health care centers across the 17 Local Government Areas, and 28 are located within Obinwga local government area. Each of the health care centers has a work force of at least 25 workers making a population of 700 health care workers in Obingwa local government area. The sample size of this study 245 healthcare workers. Two different type of instrument were used for data collection in this study, and they include checklist and structured questionnaire. The data collected in this study was analyzed using descriptive statics (mean, percentage and weighted average) and inferential

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statistics. The data collected in this study were analyzed using the Statistical package for social sciences (SPSS) version 20.

RESULTS

It was observed that out of the five hundred and fifty (250) questionnaires administered to the respondents in this study, 243 were returned, and out of the 243 that was returned, 230 were completely and correctly filled. This means that the actual questionnaire return rate is 92%.

Results of the Demographic variables of the Respondents
Table 4.1 show the summary of the results of the demographic variable of the respondents in which three major demographic factors were considered namely, gender, years of experience and type of work. From these results, it was revealed that there are more female (61.30%) in the study population that male (38.70%). This is as expected because in the health sector female are usually more because they are usually employed in sector like midwives, nursing care-givers and other areas. From the results, it was revealed that workers with 7 to 9 years working experience are the highest (40.90%) while workers with 1 to 3 years' experience are the least (10.90%). Also, it was observed that there are more full time (62.60%) workers among the population considered compare to part time (21.70%) and contract workers 915.70%).

Table 1 Results of the Demographic Variables of the Respondents

Demographic factor	Groups	Number	Percentage
Gender	Male	89.00	38.70%
	Female	141.00	61.30%
Years of Experience	1-3 years	25.00	10.9%0
	4-6 years	49.00	21.20%
	7-9 years	94.00	40.90%
	10 years and above	62.00	27.00%
Type of Work	Full time	144,00	62.60%
	Part time	50.00	21.70%
	Contract work	36.00	15.70%

Results of the Descriptive Statistics Analysis

1.   What is the level of compliance of the health care workers to effective hand-washing protocols for COVID-19 prevention in primary health centers in Obingwa LGA
Table 4.3 showed the results of the response of the respondents on their level of compliance to hand-washing procedures which considered as one of the crucial prevention procedures for COVID-19. The results revealed that out of the four (4) research items used to assess the level of

compliance to hand-washing procedures, the majority of the respondent agree on only one (1) while they disagree on the remaining three (3). This implies that the level of compliance to proper hand-washing rules in the primary health centers within the study area is low. This finding could be attributed to low availability of facilities and provision for proper handwashing procedures as was discovered and expressed in table 4.2.

Table 2 Level of compliance to Hand-washing Procedure

S/N	Items	SA	A	D	SD	Mean	Remark
1	Most workers wash their hands using running clean water using the wash-hand system	24.00 10.40%	108.00 47.00%	74.00 32.20%	24.00 10.40%	2.57	High
2	Most workers always use detergents or soaps while washing their hands	0.00 0.00%	65.00 28.30%	117.00 50.90%	46.00 20.90%	2.07	Low
3	Our workers wash their hands using the NCDC recommended hand washing pattern	0.00 0.00	48.00 20.80%	91.00 39.60%	91.00 39.60%	1.81	Low
4.	Most workers wash their hands for at least 20 seconds as recommended by NCDC effective hand washing procedures	0.00 0.00%	62.00 27.00%	116.00 50.40%	52.00 22.60%	2.04	Low
5	Our workers also use Alcohol-base hand sanitizers when they are available	0.00 0.00%	46.00 20.90%	113.00 49.10%	69.00 30.00%	1.91	Low
	Total					2.08	Low

What is the level of compliance of the health care workers to social and physical distancing protocols for COVID-19 prevention?

Table 4.4 showed the results of the descriptive statistics analysis on the level of compliance of the respondents to social and physical distancing rule for COVID-19 prevention. The results revealed that out of the four (4) research items used to assess the level of compliance to social and physical distancing rules, the majority of the response agree on three (3) and disagree on one (1). This means that the majority of the workers in the primary health centers comply with social and physical distancing rules. This could be attributed to the fact that no tangible facility or special provision in required for one to comply to the social and physical distancing rules, thus most the workers comply to the rules willingly.

Table 3 Level of compliance to Social and Physical Distancing Procedure

S/N	Items	SA	A	D	SD	Mean	Remark
1	Our workers usually avoid hand shake and other form of physical contacts	49.00 21.30%	105.00 45.70%	64.00 27.80%	12.00 5.20%	2.83	High
2	Most workers maintain good distance between themselves, their patients and others when they are inside the clinic	24.00 10.40%	117.00 51.30%	64.00 27.80%	12.00 5.20%	2.67	High
3	Workers try as much as possible to avoid crowd in the clinic by directing people to stay in the shades made outside the clinic	36.00 15.70	118.00 20.80%	91.00 39.60%	12.00 5.20%	2.77	High
4.	Workers usually clean and disinfect high-touching surface like doorknobs, light-switches and counters on regular bases	0.00 0.00%	24.00 10.40%	144.00 62.80%	62.00 27.00%	1.83	Low
	Total					2.53	High

Hypothesis Test

There is no significant difference in the compliance of the workers to COVID-19 prevention protocols based on their gender Table 4.11 showed the results of the independent sample t-test carried out to determine whether there is a significance difference in the level of compliance of the respondents to COVID-19 prevention rules based on their gender. Six (6) major COVID-19 prevention protocols were considered and they include handwashing rules, social and physical distancing rules, self-isolation rules, mouth and nose (masking0 rules, cough and sneezing rules and personal protective equipment protocols. The results of the independent same t-test revealed that there is a significance difference in the compliance level of male and female respondent in hand-washing rules ($p=0.000 < 0.05$), social and physical distancing rules ($p-0.020 < 0.05$), self-isolation rules ($p= 0.046 < 0.05$) , cough and sneezing rules ($p=0.000 < 0.05$) and personal protective equipment protocols ($p=0.000 < 0.05$), and there is no significant difference in compliance level of the male and female respondents in mouth and nose (masking) rules ($p= 0.965 > 0.05$). Thus, the null hypotheses of no significance difference in compliance of the respondents to hand-washing rules, social and physical distancing rules, self-isolation rules, cough and sneezing rules and personal protective equipment protocols were rejected while alternate hypothesis of presence of significance difference is accepted. Also, the null hypotheses of no significance difference in compliance of male and female respondents to mouth and nose (masking) rules is upheld while the alternate hypothesis was rejected.

These results implied that gender of the primary health-care workers is a notable factor that determine how they comply to COVID-19 rules especially as it concerns hand-washing rules,

social and physical distancing rules, self-isolation rules, cough and sneezing rules and personal protective equipment protocols

Table 4 T-test for relationship between compliance protocols and gender

S/N	Compliance protocols	F-value	t-value	Df	p-value (Sig.at 2-tailed)	Remark
1	Hand washing protocol	38.350	-4.015	226.010	0.000	Significant
2	Social and physical distancing protocols	13.176	2.347	157.004	0.020	Significant
3	Mouth and Nose Covering (Masking) Protocols	12.913	0.044	151.421	0.965	Not significant
4	Self-isolation protocol	19.949	-2.017	133.289	0.046	Significant

There is no significant difference in the compliance of the workers to COVID-19 prevention protocols based on the workers years of experience. Table 4.13 showed the results of the one-way Analysis of Variance (ANOVA) carried out to determine whether there is a significance difference in the level of compliance of the respondents to COVID-19 prevention rules based on their years of experience. Six (6) major COVID-19 prevention protocols were also considered and they include handwashing rules, social and physical distancing rules, self-isolation rules, mouth and nose (masking0 rules, cough and sneezing rules and personal protective equipment protocols. The results of the One-way ANOVA revealed that there is a significance difference in the compliance level of respondent based on their years of experience in hand-washing rules ($p=0.004 < 0.05$), social and physical distancing rules ($p-0.000 < 0.05$), self-isolation rules ($p= 0.000 < 0.05$), cough and sneezing rules ($p=0.001 < 0.05$) and personal protective equipment protocols ($p=0.000 < 0.05$), and mouth and nose (masking) rules ($p= 0.000 < 0.05$). Thus, the null hypotheses of no significance difference in compliance of the respondents all the COVID-19 prevention protocols as concerned the workers years of experience were rejected while alternate hypothesis of presence of significance difference is accepted.

These results implied that years of experience of the primary health care workers is crucial demographic factor that determine how they comply to COVID-19 rules especially as it concerns hand-washing rules, social and physical distancing rules, self-isolation rules, cough and sneezing rules and personal protective equipment protocols and mouth and nose (masking) rules.

Table 5 ANOVA test for relationship between compliance protocols and Years of Experience

S/N	Compliance protocols	Total sum of square	Df	F-value	p-value (Sig.at 2-tailed)	Remark
1	Hand washing protocol	205.048	229	3.986	0.004	Significant
2	Social and physical distancing protocols	205.048	229	15.726	0.000	Significant
3	Mouth and Nose Covering (Masking) Protocols	205.048	229	19.164	0.000	Significant
4	Self-isolation protocol	205.048	229	7.496	0.000	Significant

DISCUSSION OF FINDINGS

The finding of this study revealed that there is inadequate provision of materials and facilities required for effective compliance to COVID-19 protocols in the primary health caters within the studied area. This is because only four (4) out of the eleven (11) identified crucial facilities and provision are fairly available in the sampled primary health centres. This results aligned with work of Nwakaego and Amosu (2021) who carried out research to evaluation the Covid-19 Prevention and Control Protocol Compliance Among Pupil's In Ikenne Local government Area, Ogun State and their results revealed that they schools are also facing inadequate provision of material for effective prevention and compliance with COVID-19 protocols such as inadequate supply of hand washing soap and water, inadequate supply of hand sanitizers, inadequate classroom, inadequate enforcement of social distance and inadequate cleaning and disinfectant for cleaning of surface objects

The finding on the level of compliance to some of the major COVID-19 protocols revealed that the level of compliance to Coughing and Sneezing Protocols is high (2,79> 2.50), compliance level for Personal Protective Equipment Protocols is low (2.07<2.50), compliance level for Self-isolation Protocols is high (2.89>2.50), the level of compliance for Mouth and Nose Covering (Masking) Protocols is low (2.21<2.50), the compliance level for Social and Physical Distancing Procedure is high (2.53>2.50(and compliance level for Hand-washing Procedure is low (2.08<2.50). These results is in accordance with outcome of the empirical study carried out by Mukonzo et al (2021) aimed at determining the extent of implementation of Covid19 protocols by auxiliary personnel in quarantine centres in Kenya Medical Training College campuses in which their results revealed that there were varying extends of compliance to Covid19 prevention protocols as was observed in this current study. They also uncovered that the most adhered protocol was wearing of masks by security personnel at 100% which is contrary to current study as we

recorded low compliance in wearing of mask. The study also recorded lapse in using PPE while cleaning at 44.4% which aligned with current study as we also recorded low compliance to using PPEs.

This current study also aligned with work of Nwakaego and Amosu (2021) who carried out research to evaluation the Covid-19 Prevention and Control Protocol Compliance Among Pupil's in Ikenne Local government Area, Ogun State and their results revealed that compare to other prevention strategies, wearing of face mask was the least complied measures which is similar to what was observed in this current study. The work also aligned with work of Alao et al (2020) who carried out research to assess Health workers' knowledge about, attitudes towards, beliefs on, and use of PPE to prevent COVID-19 infection in a resource-limited setting and their results revealed poor knowledge on use of PPE for COVID-19 prevention.

CONCLUSIONS

Based on these findings from these results, it was concluded that;
1. There is inadequate availability of the facilities and provisions needed for effective compliance to COVID-19 prevention protocols in the primary healthcare centers in Obingwa local government area.
2. There is low level of compliance to COVID-19 prevention protocols by the health care workers in Obingwa local government area.
3. Some of the some of the major challenges hindering the ability of the primary healthcare workers to comply with the COVID-19 prevention protocols were Lack of knowledge and awareness of the health workers concerning the COVID-19 protocols, Inability of government to provide the facilities and material needed for proper compliance to the COVID-19 protocols, Worker's carelessness and insensitivity of workers towards dangers of COVID-19 and Lack of trainings and sensitization programs for the workers on the current COVID-19 prevention protocols and why they require utmost compliance
4. The demographic characteristic such as gender, years of experience and type pf work are significant predictor of compliance to all the COVID-19 prevention protocols considered in this study

Recommendations
From these conclusions drown based on the findings of this study, it was recommended that;
1. The government, particularly the local government, and other non-governmental organizations should make provision for the facilities and material needed for effective compliance to COVID-19 protocols in primary healthcare centers in Obingwa local government area.
2. The Nigerian Center for Disease Control should organize awareness programs for the healthcare workers in the primary healthcare centers in Obingwa local government area. As such

would help them understand the importance and essence of full compliance to the COVID-19 prevention protocols.

3. The government and the NGOs should also ensure that they mitigate all the uncovered challenges hindering effective compliance to the COVID-19 prevention protocols by the healthcare workers in the primary healthcare centers in Obingwa local government area.

References

Alao M. A. Durodola, A. O Ibrahim O. R and Asinobi O. R (2020) Assessment of Health Workers' Knowledge, Beliefs, Attitudes, and Use of Personal Protective Equipment for Prevention of COVID-19 Infection in Low-Resource Settings *Hindawi Advances in Public Health* Article ID 4619214, 10 pages https://doi.org/10.1155/2020/4619214

Basiem A &, Yusuff J.A (2021) Comparative report of compliance to precautionary measures against COVID-19 in Nigeria and Jordan, Hellyon : www.cell.com/heliyon

CDC (2003).Centers for Disease Control and Prevention. Update: Outbreak of severe acute respiratory syndrome--worldwide, 2003. MMWR Morb Mortal Wkly Rep. 2003;52(12):241–6.

Ezigbo, O & Ifijeh, M., (2020). Coronavirus Spread: WHO Lists Nigeria Among High RiskCountries. This Day Newspaper. Retrieved from. www.thisdaylive.com. (Accessed 7 October 2022).

Falokun, L., (2020). Impact of Covid-19 on Micro, Small and Medium-Sized Enterprises in Nigeria. Retrieved from. https://smetoolkit.ng/articles/17096-impact-of-covid-19-on-micro-small-and-medium-sized-enterprises-in-Nigeria. (Accessed 4 October 2022).

Habib, M.A., Dayyab, F.M., Illiyasu, G. & Habib, A.G. (2021).Knowledge, Attitude and Practice Survey of Covid -19 Pandemic in Northern Nigeria.Plos Global Public Health. https://doi.org/10.1371/journal.pone.0245176

Ibrahima, T (2020). Challenges of Fighting Covid-19 Pandemic: The Nigerian Case.http://rosalux .sn/en/5146

Majemu, S.A. (2021). A Position Paper on Religion and Covid-19 Pandemic: Role of Interfaith Leaders and Faith-based Organizations in Nigeria.https://www. Peacemaker snetwork.org/wp-content/uploads/2020/03/Position-on-Religion-and-COVID-19.pdf

McEachan, R., Taylor, N., Harrison, R., Lawton R., and Gardner, C. M. (2016). Meta-Analysis of the Reasoned Action Approach (RAA) to Understanding Health Behaviors Annals of Behavioral Medicine 50, 592-612

Minghe, Z., Fang, T., Yunjian, W., Luyang, Z., and Guohua You, M. Z. (2020). Knowledge, attitude and practice regarding COVID-19 among health care workers in Henan. *China Journal of Hospital Infection*, DOI: https://doi.org/10.1016/j.jhin.2020.04.012

Mukonzo, J., Marsellah O Oluoch K, Kiplagat E & Claris A (2021) Assessment of the Adherence to Covid19 Prevention Protocols by Auxiliary Health Personnel In The Kenya Medical Training College Quarantine Centres, *International Journal of Scientific and Research Publications,* 11, (1) 286-296. ISSN 2250-3153

Murthy, S. Gomersall, C. D., and Fowler, R. A. (2020). Care for Critically Ill Patients With COVID-19. JAMA 323(15), 1499-1500; doi:10.1001/jama.2020.3633

Nwakaego D.E and Amosu A. M (2021) Evaluation Of Covid-19 Prevention And Control Protocol Compliance Among Pupil's In Ikenne Local government Area, Ogun State. *African Journal of Health, Nursing and Midwifery,* 4, (3) 74-91 ISSN: 2689-9418

Odikpo L.C**.,** Abazie O.H.,Gbahabo, Dooshima Dorothy.,Musa-Malikki, A.U., Duke, Emon ., Mobolaji-Olajide, O. M. (2021). Knowledge And Reasons For Anxiety Among Nurses Towards Covid -19 In Nigeria. African Journal of Infectious Diseases, 15 (2), 16-23

Olapegba P. O., Ayandele O., Kolawole S. O., Oguntayo R., Gandi J. C., Dangiwa A. L. (2020). (2020). A Preliminary Assessment of Novel Coronavirus (COVID-19) Knowledge and Perceptions in Nigeria. Preprint 2020; med Rxiv 2020.04.11.20061408. https://doi.org/10.1101/2020.04.11.20061408

Reuben RC, Danladi MMA, Saleh DA, Ejembi PE (2020) Knowledge, Attitudes and Practices Towards COVID-19: An Epidemiological Survey in North-Central Nigeria. J Community Health. 2020; https://doi. org/10.1007/s10900-020-00881-1 PMID: 32638198

Sheikh, K. & Rabin, R.C., (2020). The Coronavirus: what Scientists Have Learned So Far. TheNew York Times. Retrieved from. www.nytimes.com. (Accessed 7 October 2022).

Ukonu. M.O & Mbamalu M (2021), Predictors of Compliance to COVID-19 Containment Communications in Nigeria's Federal Capital Territory, Enugu, and Lagos States. Sage DOI: 10.1177/21582440211047243

Wang, C., Horby, P.W., Hayden, F.G. & Gao, G.F., (2020). A Novel coronavirus outbreak of global health concern. Lancet 395–470.

World Health Organization, (2020a). Coronavirus Disease 2019 (COVID-19) situationreport –36. 25th Feb, 2020 retrieved from. https://www.who.int/docs/defaultsource /coronaviruse/situation-reports/20200225-sitrep-36-covid-19.pdf?sfvrsn=2

World Health Organization, (2020b). Coronavirus Disease 2019 (COVID-19). Situation report 43, 3rd March, 2020. https://www.who.int/docs/default-source/corona

Wu, Z. and Mc Googan, J. M. (2020). Characteristics of and Important Lessons From the Coronavirus Disease 2019 (COVID-19) Outbreak in China: Summary of a Report of 72314 Cases From the Chinese Center for Disease Control and Prevention. Journal of the American Medical Association, doi: 10.1001/jama.2020.2648. Online ahead of print (Accessed 4th April 2020)

Yang, B., Leung, G.M., Feng, Z., (2020) Early transmission dynamics in Wuhan, China, ofnovel coronavirus-infected pneumonia. Nat. Engl. J. Med. 382 (13), 1199–1207.

Zhu, N., Yang, B., Leung, G.M & Feng, Z (2020). A novel coronavirus from patients with pneumonia in China, 2019. Nat. Engl. J. Med. 20;382 (8), 727–733.