

Assessment of Knowledge, Attitude and Practice on Prevention of Novel Corona Virus (COVID-19) in Yobe State, Northeast Nigeria

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ABSTRACT

Novel Corona virus (COVID-19) has become a global pandemic in 2020. In less than 60 days, the virus has rapidly spread across the globe. This is faster than any infectious disease in human history. Although similar to Severe Acute Respiratory Syndrome (SARS) and Middle East Respiratory Syndrome (MERS) in terms of symptoms, COVID-19 is deadlier. Governments around the world alongside WHO are working to reduce if not break the chain of transmission. In this study, Knowledge, Attitudes and Practices of general public and Health Care Professionals (HCPs) in Yobe State, Northeastern, Nigeria were assessed to understand the nature of compliance to WHO guidelines through online questionnaires. It was established that 100% of HCPs have knowledge of COVID-19, its mode transmission and preventive measures. However, 89.6% of respondents (general public) have heard of the disease and are complying with government and the WHO guidelines on preventive measures. The study further revealed that qualification is playing vital role towards the KAPs of citizens on the novel disease. It is evident that organisations responsible for enlightenment and sensitization have done the needful.

Keywords: Novel Corona virus (COVID-19), Yobe State

INTRODUCTION

On 31st December 2019 to be precise, a pneumonia like illness with unknown etiology was first reported to have

emerged in Wuhan, China (WHO, 2020 a; Lupia *et al.*, 2020). Following 44 reported cases of this illness between December and 4th January 2020, the Chinese authorities isolated and confirmed the etiological agent as corona virus (WHO, 2020 a). This newly identified strain of corona virus was isolated from biologic samples and classified as beta-coronavirus (Peeri *et al.*, 2020). It is responsible for respiratory illness involving fever, dry cough, general body weakness, myalgia and dyspnea (Zhong *et al.*, 2020). Other strain of corona virus for example: the Severe Acute Respiratory Syndrome (SARS) and Middle East Respiratory Syndrome (MERS) which emerged in 2002 and 2012 respectively, present similar symptoms with the novel corona virus (SARS-CoV-2 or COVID-19) (Fung *et al.*, 2020; Peeri *et al.*, 2020). Although, the rate of COVID-19 transmission is thought to be more than SARS with a case-fatality rate of 2.3%, this is considerably higher than a seasonal influenza (Dong and Bouey, 2020). Few weeks following the first reported case of Corona virus (2019-nCoV2), infection from this virus was classified as both infectious, contagious and a pandemic, with thousands of cases reported in more than 25 countries worldwide (Peeri *et al.*, 2020). Of these, more than 250,618 confirmed cases and 10,254 deaths were recorded in Wuhan, China (Hageman, 2020). As of March 31st 2020, a total of 750, 890 confirmed cases and 36,405 deaths were recorded globally (WHO, 2020 b). In Nigeria, an imported

case involving an Italian national was first reported on 27th January, 2020 in Lagos, South-West Nigeria (Ebenso and Otu, 2020; NCDC, 2020 a).

Since the first reported case of COVID-19 in Nigeria, several other cases were subsequently recorded which increased by the day (NCDC, 2020 b). As at the time of compiling this article, 617,750 samples were tested, with 62,224 confirmed cases and 1135 deaths due to COVID-19 were recorded from all the 36 States of the federation and the Federal Capital Territory (FCT). Of these states and the FCT, Lagos State has the highest recorded case (20, 935) and Kogi State had the least, with only 5 case reported. Out of the total confirmed cases, 57,916 have been discharged while 3, 173 are currently receiving care in health centers around the country (NCDC, 2020 c). The Nigerian authorities had imposed series of measures including but not limited to social distancing, regular handwashing with soap and water, use of face masks, banning large crowds, imposing lockdown and so forth to contain the disease and ensure safety. The main objective of this study was to assess the knowledge, attitude and practice of Nigerians on the novel corona virus disease (COVID-19).

METHODOLOGY

Literature review and questionnaire surveys were used to obtain information on Knowledge, Attitude and Practice of Health Care Professionals (HCPs) and general public during the Covid-19 pandemic in Nigeria. Online questionnaires targeting these categories of Nigerians were divided into sociodemographic information of the respondents, knowledge of respondents regarding the corona virus disease (COVID-19), as well attitudes and practices of respondents respectively. Similarly,

questionnaire survey being the most suitable technique to collect large data-sets, was employed in this study. Internal validation was conducted to ensure that the questionnaires and the research work were free of bias (Gomn, 2008). The study was conducted in Yobe State, North eastern, Nigeria. Yobe State (lat. 10.578-13.377⁰N; long. 9.654-12.689⁰E) is among the 36 States of Nigeria and covers 47,153 km². According to the National Population Commission (NPC), Yobe State had a population of 2,321,339 million people at the last (2006) census (NPC, 2006).

Data obtained was analysed using GraphPad Prism (version 5.0). Simple descriptive statistics was used to summarize the outcomes all the variables. Non-parametric test (Mann-Whitney U test) was also used to determine the statistical significant difference between general public and HCPs in terms of KAPs, with P values <0.05 considered statistically significant.

Focus Group Discussion was also conducted for in-depth information and validation of the survey results. 12 discussants participated in the FGD, 5 HCP (2 medical doctors, 1 nurse, 1 epidemiologist, 1 lab scientist) and 7 people from the general public having different level of qualifications from SSCE to PhD holders took part in the discussion. All the participants were given codes during the analysis. The session was recorded with phones and cameras. Findings of the survey results were project to all the discussant questions were raised to discussion.

RESULTS

Results presented below are on KAP of both general public and HCPs, they are all presented in simple percentage.

Table 1. Distribution of the respondents (General public and Health Care Professionals) according to their socio-demographic characteristics

Variables	General Public (n=299)		Health care professionals (n=29)	
	Number	Percentage (%)	Numbers	Percentage (%)
Age group				
15-20	13	4.4	-	-
21-30	137	46.0	6	20.7
31-40	109	36.6	20	69
41-50	31	10.4	3	10.3
51-60	7	2.3	-	-
61 Above	13	4.4	-	-
Gender				
Male	239	80	18	62.1
Female	60	20	4	13.8
Marital status				
Married	156	52	25	86.2
Single	142	48	4	13.8
Widowed	0	0	-	-
Divorced	0	0	-	-
Education level				
Primary	0	0	-	-
Secondary	3	1.0	-	-
Tertiary	288	96	29	100
Non-formal	5	2	-	-
Non	3	1.0	-	-
Occupation				
Student	113	37.7		
Civil servant	153	52.0	10	34.5
Business	28	9.3		
Farming	5	1		
Health care professionals	-	-	19	65.5

Table 2. Knowledge of the general public (N=299) on novel Corona Virus (COVID-19)

Knowledge on COVID-19	Response		
	Yes N (%)	No N (%)	Don't know N (%)
Have you heard about the novel Corona Virus (COVID-19)	268(89.6)	29 (9.6)	2 (0.8)
Do you believe that Corona Virus (COVID-19) really exist	294(99)	4 (1)	1 (0.3)
Have you met or known any infected person	41 (14)	236(79)	22 (7)
Is anyone close to you infected with Corona Virus (COVID- 19)	5 (2)	273(91)	21 (7)
Do you know the symptoms of Corona Virus (COVID- 19)	263 (88)	33 (11)	3 (1)
Do you know how Corona Virus (COVID- 19) is transmitted	276 (92)	22 (7)	1 (1)
Do you know how to protect yourself against Corona Virus (COVID- 19) infection?	266(89.3)	27(9.1)	5 (1.7)
Is self-isolation/quarantine an effective means of prevention against Corona virus (COVID-19)	267(90)	20 (7)	10 (3)
Is Corona Virus a deadly disease	258(86)	24 (8)	18 (6)

Table 3. Knowledge of Health Care Professionals (N=29) on novel Corona Virus (COVID-19)

Knowledge on COVID-19	Response		
	Yes N (%)	No N (%)	Don't know N (%)
Have you heard about the novel Corona Virus (COVID-19)	29 (100)	-	-
Do you believe that Corona Virus (COVID-19) really exist	29 (100)	-	-
Have you met known any infected person	4 (13.8)	24(82.8)	1 (3.4)
Is anyone close to you infected with Corona Virus (COVID-19)	1 (3.4)	28(96.6)	-
Are fever, difficulty in breathing, dry cough, and general body weakness the symptoms of Corona Virus (COVID- 19)	28 (96.6)	-	1 (3.4)
Are there any effective treatment of Corona Virus in clinical use?	7(24.1)	18(62.1)	4(13.8)
Is Corona Virus transmitted by hand shake, body contact or sneezing of infected person	29 (100)	-	-
Is regular washing of hands and face with soap and water a precautionary measure against COVID- 19	29 (100)	-	-
Is Corona Virus a deadly disease	28(89.7)	2(6.9)	1(3.4)

Table 4. Attitudes and practice of the general public (N=299) towards novel Corona Virus (COVID-19)

Attitudes and practice on COVID-19	Response		
	Yes N (%)	No N (%)	Don't know N (%)
Have you been using face mask since the declaration of Corona Virus (COVID-19) diseases as pandemic	105 (35)	194(65)	-
Have you been having handshakes with friends and relatives since you heard of Corona Virus (COVID-19) diseases	178 (59)	101(33.6)	20(6.7)
Have you been washing your hands with soap and water regularly	263(87.9)	36(12.1)	-
Have you been avoiding crowded places (e.g. mosque, churches, schools, market places and offices) since you heard of Corona Virus	162(54)	115(39)	22 (7)
Have you been keeping distance of at least 1 meter in social gathering	169(56.5)	105(35.1)	25(8.4)
Have you had self-medication in the event of sneezing, fever or cough in recent days	88 (29.4)	205(68.5)	6(2)
Have you sought medical advice since the news of Corona Virus broke in Nigeria	138(46.3)	155(51.7)	6(2)
Is stigmatization against Corona Virus patients a good practice	96(32)	158(53)	45(15)

Table 5. Attitudes and practice of health care professionals (N=29) towards novel Corona Virus (COVID-19)

Attitudes and practice on COVID-19	Response		
	Yes N (%)	No N (%)	Don't know N (%)
Have you been using face mask since the declaration of Corona Virus (COVID-19) diseases as pandemic	15 (51.7)	14 (48.3)	-
Have you been having handshakes with friends and relatives since you heard of Corona Virus (COVID-19) diseases	14 (48.3)	14 (48.3)	1 (3.4)
Have you been washing your hands with soap and water regularly	29 (100)	-	-
Have you been avoiding crowded places (e.g. mosque, churches, schools, market places and offices) since you heard of Corona Virus	20 (69)	7 (24.1)	2 (6.9)
Have you been keeping distance of at least 1 meter in social gathering	16 (55.2)	10 (34.5)	3 (10.3)
Have you experience fever, dry cough, difficulty in breathing, or fatigue in recent days	2 (6.9)	27 (93.1)	-
Have you had self-medication in the events of sneezing, fever, or cough in recent days	3 (10.3)	26 (89.7)	-
Have you sought medical advice since the news of Corona Virus broke in Nigeria	15 (51.7)	14 (48.3)	-
Is stigmatization against Corona Virus patients a good practice	7 (24.1)	21 (72.4)	1 (3.4)

Table 6. Mean score of knowledge and attitude in relation to occupations of the respondents

	General public	Health care professional	
Variables	(Mean±SD)	(Mean±SD)	P. Value
Knowledge	215 ±109	13.4 ±8.01	0.0036*
Attitude and practice	149.9±53.6	14.3 ± 8.2	0.0009*

P<0.05, there is a significant difference in terms of knowledge between general public and health care professionals,

**P<0.05, there is a significant difference in terms of attitude and practice between general public and health care professionals*

Focus Group Discussion (FGD) analysis

For in-depth information on COVID-19 KAP in Yobe state, Focus Group Discussion was conducted to validate some results from the survey. HCP and general public were invited to participate in the FGD. According to most of the participants especially those drawn from the General Public (GP) category, people in the

state do not use face masks because they believe that COVID-19 is a conspiracy considering that they have not seen or known any person infected with the virus. Some stated that there was insufficient supply of face mask in the state and even if available, it is very uncomfortable to wear as well. Participants were asked if they regularly have handshakes. Most of the participants have handshakes because they do not believe the diseases really exist. They also stated that handshake is a common act to exchange pleasantries in their culture and region. People are also stereotyped if they strictly follow COVID-19 WHO protocols. GPI stated that “*you will be stigmatized as someone who does not want to die or someone very weak*”. As reported in the survey, discussants from GP also lamented

that they wash their hands regularly as it is a common practice.

On the other hand, HCP complied with the COVID-19 WHO protocols by wearing face mask as reported in the survey results. As professionals who are always in the frontline, they are virtually the first contact with patients reporting to the hospitals with symptoms related to COVID-19. On the issue of observing social/physical distancing, the HCP stated that it is difficult for them to comply with this, as they have no option but to stay close while clacking lots of patients that reported to the hospitals. Similarly, some of the facilities they work with are not spacious enough for such practices. Considering their professions, HCP always sought medical advice in the event they have/feel any COVID-19 symptoms as reported in the survey.

DISCUSSION

The novel SARS-CoV-2 was regarded as a conspiracy to bring down or restart world economy (Abaido and Takshe, 2020) or is targeted at reducing the population of African, whose attitudes and practice pose a great threat to the containment effort of this pandemic. Understanding the Knowledge, Attitude and Practice of people towards COVID-19 is essential at these trying times. While resources and energy are expended on this deadly disease (COVID-19), containment efforts will not be achieved without total compliance to set rules by the authorities.

Findings of the sociodemographic status of respondents in this study, contradicts the results of Zhong *et al.* (2020) who reported in a KAP study among Chinese residents on COVID-19 that female are majority of respondents. However, other finding, for example, educational status of respondents in this study, corroborates with that of Zhong *et al.* (2020) (Table 1). Despite the fact that most of the respondents in this group have higher degrees, some (1%) had secondary and no formal education. Some (46%) respondents fall

between age group of 21-30 and (36.6%) 31-40 respectively. This is likely that adults respond more to online questionnaire surveys due to their access to internet and possession of android smart phones. Among the categories of respondents, civil servants had (52%) response rate which was considered highest, of which, 29 were Health Care Professionals.

Knowledge of the general public on one hand and those of Health Care Professionals on the other hand, in relation to the novel corona virus (COVID-19) was determined, with questions targeted at individual groups. Responses were divided into three (3) categories, those who claimed to have known a certain question responded as "Yes", those who have no idea on a specific question responded as "No" and those who are not sure of what to choose, and wouldn't want to give a false claim, responded as "Don't know". On whether the respondents have heard of COVID-19, some (89.6%) (Table 2) had responded to have heard of the disease, while (9.6%) have not heard of it. It is worthy to note that some group of people are still doubting the existence of the disease. On whether the disease exist or not, (1%) disagreed on its existence, while (0.3%) do not know if the disease exists or not. This result is in consonance with the finding of Chan *et al.*, (2015) who reported in a study on SARS in China, that some respondents did not believe the existence of SARS (H7N9) and so do not take it seriously. However, a sizeable number of the respondents in this study agreed on the existence of COVID-19. Although, till date little is known about COVID-19, some (14%) of respondents claimed to have met infected persons, while (7%) do not know if they actually met infected persons or not. Although ways of getting infected with the disease are still unfolding, these numbers are quite robust to cause serious public health challenge and threatening the lives of those who might not have contact with infected persons. While the disease and its etiology is just recently identified, about (2%) were said to have

close relatives infected with COVID-19 and (7%) do not know if they had any close relative infected with the virus. Conversely, some infected persons could be asymptomatic and may also pose health challenges. It is important to also note that a good number of the respondents (88%) had knowledge of the symptoms of COVID-19, this could be attributed to sensitization and enlightenment campaigns by the governments and Civil Society Organisations (CSOs). On how the disease is transmitted, (92%) claimed to have knowledge of COVID-19's means of transmission. This may be due to the mass campaigns in local media stations and advocacies by CSOs, governmental and non-governmental organizations. Questions related to protection, prevention and death due to COVID-19 also had similar responses.

HCPs comprising doctors, nurses/midwives, pharmacists, medical laboratory scientists/technologists, community health workers and epidemiologists were targeted during this study. Considering the limited number of healthcare providers in the community, only 29 responded to the questions. It is not surprising that 100% of the respondents have heard of COVID-19 (Table 3). The possible ways of transmission include but are not limited to: direct contact with infected person, sneezing or as droplets in aerosols. Some methods of preventions include regular hand washing with soap and water, use of hand sanitizer, hand gloves to prevent contact and the use of face masks. However, based on the finding of this study, not all Health Care Professionals know the symptom of COVID-19. On the availability of effective treatment for COVID-19, (62.1%) of the respondents opined that no drug exists specifically for the treatment of COVID-19, while (24.1%) claimed the availability of effective treatment. This assertion could be attributed to treatments served to any sign or symptom presented by COVID-19 patients and of course the use of antiviral drug, lopinavir and ritonavir in patients

hospitalized with COVID-19 (Peeri *et al.*, 2020) and hydroxychloroquine as reported in the literature (Agrawal *et al.*, 2020).

Table 4 assessed the attitude and practice of the general public. According to the findings of the survey, 65% of the General Public (GP) do not use face mask as means of self-protection, but (59%) of those who use face masks have handshakes with friends and relatives in social gatherings. This findings contradicts the guidelines established by WHO in respecting social and physical distancing (WHO, 2020). It is evident that discussants (GP) believed that the disease does not exist as they only hear about it on the radio, TV stations and other means of enlightenment. This is a prove that creating awareness plays a vital role in educating people societal problems. However, in the same study, people do not observed social distancing of at least 1 metre in social gatherings. It was observed that respondents have the knowledge but are not properly adhering to WHO's established guidelines of hand shakes as this is another means of transmission. Most respondents use self medication in the events of sneezing and coughing instead of seeking professional advice. The discussants stated that they are scared to seek medical advice or go to hospital when they have cough symptoms due to the fear of COVID-19 or being asked to go for COVID-19 test. Most people avoid hospitals and clinics during the peak of the pandemic in the state.

Table 5 assessed the KAP of HCPs where (51%) used face mask since the declaration of the disease in Nigeria. 50% of HCPs have hand shakes with friends and relative and the same number of the HCPs do not have hand shakes with friends and relatives. During the FGD HCPs lamented that stigmatisation plays role in their behaviours towards adherence to WHO COVID-19 guidelines. Their family members and colleagues at work determine whether they have handshakes or not. Most HCPs practice regular hand washing with soap and water as described by WHO (2020). However, it is not surprising that,

despite their knowledge and clinical practice, most HCPs (89.7%) do not use self medication in the event of coughing, sneezing and/or fever. In order to obtain the correlation of respondents' occupation on KAP in the study, inferential statistics was employed to calculate for each category (Table 6). The P-value for both category are 0.0036 for general public and 0.0009 for HCPs respectively. A statistical significant difference ($P < 0.05$) exist for both categories. Considering the significant relationship between KAP of the general public and that of HCPs, it is not surprising that qualification and occupation plays role in people's KAP on COVID-19. It is important that henceforth if such pandemic or epidemic occurs the level of sensitisation and enlightenment between communities with high and low literacy should differ. The study of Gwahirisa *et al.* (1999), reported that communities with prior knowledge on health education have shown positive response to KAP on issues regarding diseases.

CONCLUSIONS

Covid-19 has caused serious concern to many people around the world and more deaths than many natural disasters in recent years. WHO and governments in many countries around the world have been working to ensure that transmission of the disease has been reduced. Guidelines have been set by WHO and new information on the disease are still emerging every day due to its novelty. Some governments are concern with people's compliance to such guidelines, which will influence people's KAP on the disease. This study has conducted an online survey to assess the level of awareness and compliance on COVID-19. It was established that HCPs have more knowledge of the disease and adhered to the guidelines on attitudes and practices, than general public in the study. In this part of the country culture and religion plays role in people's attitude and practices towards COVID-19 guidelines. Respondents have shown that most of them

are aware of the disease, its modes of transmission and preventive measures. However, discussants have shown that they believe the disease is a conspiracy as they have met/seen people infected by the virus. It is evident that organisations responsible for enlightenment and sensitisation have done the needful. The study show that qualification plays vital role in KAP towards the novel disease. Thus, urging more enlightenment to communities and places with low literacy.

AKNOWLEDGEMENT

The authors acknowledged Tertiary Education Trust fund (TET Fund) for their financial sponsorship through the Institutional Based Research Grant of Yobe State University, Damaturu, Nigeria (2019/2020 Intervention). The authors would also like to thank the participant of the study for their responses.

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How to cite this article: Mustapha T, Daskum AM, Gana AH. Assessment of knowledge, attitude and practice on prevention of novel corona virus (COVID-19) in Yobe State, Northeast Nigeria. *International Journal of Research and Review*. 2020; 7(11): 23-30.
