Original Research Article

Investigating the level of Awareness on Transmission and use of Protective Devices against covid – 19 among non – Clinical staff of National Eye Center, Kaduna, Nigeria.

Abstract

A study on awareness of non-clinical staff on the use of protective devices for prevention of covid-19 transmission in NEC Kaduna. A non-experimental design used. Out of the targeted 176 respondents the study sampled 146 comprises of; 10 Gardeners, 12 Drivers, 66 Attendants and 80 respondents. Using a multi-stage sampling technique of stratified convenient and simple random sampling. The instrument used an adapted (W.H.O) Covid 19 awareness guideline. Findings revealed that; the whole respondents absolutely agreed that they have heard about corona virus (COVID-19) before with 146 (100%). On the respondent's sources of information Majority 80 (54.8%) of the respondents got their information about COVID-19 through radio and television news, furthermore; findings also revealed that 79 (54.1%) respondents opined that (COVID-19) is viral disease, Majority;109 (74.7%) of the respondents stated that Corona Virus (COVID-19) was discovered from Wuhan China. Majority 26 (17.8%) stated that Corona Virus (COVID-19) spread via touching, 41 (28.1%) stated that (COVID-19) spread via coughing, 45 (30.8%) stated via sneezing, majority 78 (53.4%) stated that (COVID-19) is airborne disease; Majority 77 (52.7%) stated sore throat is a symptom of (COVID-19), Majority 66 (45.3%) stated wearing face mask as the protocol against (COVID-19), Majority 111 (76.0%) stated that hand washing frequently is easy. Majority 59 (40.4%) of the respondents that they disagreed that traditional medicine cannot cure Coronavirus (COVID-19). Majority; 99 (67.8%) stated that government is doing enough to stop the global pandemic in Nigeria, Majority 102 (69.9%) stated that they can accept COVID-19 vaccine conclusively respondents are aware of the Sources of information on the Use of Protective Devices against Transmission of COVID-19 in NEC via Radio and Television news. Hence the researcher recommended Community-based health campaigns are necessary to hold optimistic attitudes and practice appropriate intervention measures devoid of misconceptions.

Keywords: Awareness/Knowledge, Attitude, Practice, Public health, COVID-19, Kaduna, Nigeria.

Introduction

“Coronavirus Disease 2019 (COVID-19) was declared as pandemic by the World Health Organization on March 11th, 2020 mainly due to the speed and scale of the transmission of the disease” (WHO, 2020). “Corona viruses (CoVs) are positive-stranded RNA (+ssRNA) viruses with a crown-like”. (WHO, 2020). “Global Disease 2019 (COVID-19) was declared as pandemic by the World Health Organization on March 11th, 2020 mainly due to the speed and scale of the transmission of the disease” (WHO, 2020). “Before that, it started as an epidemic in mainland China with the focus being firstly reported in the city of Wuhan, Hubei province in February 26th” (Zhang, et al., 2020). “The etiologic agent of COVID-19 was isolated and identify as a novel corona virus, initially designated as 2019-nCoV” (Gralinski, 2020). “Later the virus genome was sequenced (Zhang, et. al., 2020) and was genetically related to the corona virus outbreak responsible for the SARS outbreak of 2003, the virus was named as severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2) by the International Committee for Taxonomy of Viruses” (Virological.org.Novel 2019 and WHO, 2020). “The origin and source of the SARS-CoV-2 remains unknown, although the initial cases have been associated with the Wuhan South China Seafood Market where snakes, birds and other animals such as bats were sold. Considering that many of the early patients worked in or visited the market in contrast to the exported cases, it was suggested either a human-to-human transmission or a more widespread animal source” (Li et al., 2020). “A suspected bat origin was suggested after 96 % genome sequence identity was demonstrated between SARS-CoV-2 and another corona virus named Bat-CoV-RaTG13 isolated from bat species which colonized a province nearly 2000 km away from Wuhan” (Zhang, et. al., 2020). “Since the first outbreak recognized in February 2020, the disease spread rapidly around the world. According to the European Centre for Disease Prevention and

Control, as of 17th of June 2020; 8,142,129 cases of COVID-19 and 443,488 deaths have been reported worldwide since 31st December 2019. American continent was among the ones with highest number of cases (3,987,543) with United States and Brazil the leading countries (2,137,731 and 923,189 respectively). Several SARS-CoV-2 samples have been isolated from di erent people and genomic sequences have been available aiming to better understand the virus and to provide information for the development of diagnostic tools and a potential vaccine". (WHO, 2020). Since covid-19 is a global pandemic that have grossly affected the entire world, including developed countries of; Europe, America and China which by implication putting the developing countries such as Nigeria at more risk if there is non-proper awareness on the use of protective devices hence the researcher is motivated to investigate the level of awareness of non-clinical staff on the use of protective devices for prevention of covid-19 transmission: a study of National Eye Center Kaduna-State Nigeria.

Justification

Findings of the study will help in reducing mortality rates among the general populations as they use the preventive devices; will significantly reduce the covid-19 transmission. The outcomes of the research work will add to the body of literatures on the topics, also the study outcomes will enable the policy makers to enact necessary laws that will enforce the use of protective devices among the clinical and the non-clinical staff of the tertiary institutions. The report of the research findings thereby providing basis for necessary counsel and recommendation that will widen the knowledge and improve non-clinical staff attitude and practice towards the prevention and transmission of Covid-19 (Nwagbara, 2021.)

Overview of covid-19

Corona virus disease 2019 (COVID-19) is a contagious respiratory disease caused by severe acute respiratory syndrome corona virus 2 (SARS-CoV-2), a specific type of corona virus responsible for the ongoing worldwide outbreak.

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Historical antecedent

“The origin and source of the SARS-CoV-2 remains unknown, although the initial cases have been associated with the Wuhan South China Seafood Market where snakes, birds and other animals such as bats were sold. Considering that many of the early patients worked in or visited the market in contrast to the exported cases, it was suggested either a human-to-human transmission or a more widespread animal source” (Li, *et. al.,* 2020). “A suspected bat origin was suggested after 96 % genome sequence identity was demonstrated between SARS-CoV-2 and another coronavirus named Bat-CoV-RaTG13 isolated from bat species which colonized a province nearly 2000 km away from Wuhan” (Andersen, *et. al.,* 2020). “Pangolins were also suggested as natural host of corona viruses” (Liu *et al.*, 2020). “However, evidence of human-to-

human transmission became strongly supported on January 22nd, 2020 after a visit conducted by a WHO delegation to the city of Wuhan" (WHO, 2020). "Since the first outbreak recognized in February 2020, the disease spread rapidly around the world. According to the European Centre for Disease Prevention and Control, as of 17th of June 2020; 8,142,129 cases of COVID-19 and 443,488 deaths have been reported worldwide since 31st December 2019. American continent was among the ones with highest number of cases (3,987,543) with United States and Brazil the leading countries (2,137,731 and 923,189 respectively). Several SARS-CoV-2 samples have been isolated from different people and genomic sequences have been available aiming to better understand the virus and to provide information for the development of diagnostic tools and a potential vaccine. To date more than 42,000 SARS-CoV-2 RNA genomes have been uploaded in the Global Initiative on Sharing All Influenza Data, known as GISAID" (Global Initiative on Sharing All Influenza Data, 2020).

Groups of covid-19

"SARS-CoV-2 belongs to the beta sub grouping of the Coronaviridae family and are enveloped virus containing a positive-sense, single stranded RNA with 29,891 bases of size" (Chen, *et. al.*, 2020). "The genome encodes for 29 proteins involved in the infection, replication and virion assembly process. Like other corona viruses they are characterized by the presence of crown-like spikes on their surface" (Schoeman, *et al.,* 2020). "The spike S protein from SARS-CoV-2 contains a receptor binding domain (RBD) that binds the human angiotensin-converting enzyme 2 (ACE2) and thereby, promotes membrane fusion and uptake of the virus into human cells by endocytosis" (Yan, *et, al.*, 2020). "The RBD present in the spike protein is the most variable region of the coronavirus genome" (Wu, *et. al.,* 2020). "Structural and biochemical studies have suggested that RBD from SARS-CoV-2 binds with high affinity to ACE2 compared to other

SARS-CoV viruses" (Wan, *et, al.,* 2020). "However, the human ACE2 protein variability may also be a factor for the high binding affinity" (Wan, *et. al.,* 2020).

Mode of transmission

"SARS-CoV-2 infection, replication and clinical implications SARS-CoV-2 can be transmitted human to human by respiratory droplets, close contact with diseased patients, and possibly by fecal-oral and aerosol contact" (Hindson, *et. al.,* 2020). "It was recently shown that airborne transmission is highly virulent and represents the dominant route to spread the disease" (Zhang, *et. al.,* 2020). "This finding was obtained based on the analysis of the trend and mitigation measures in three different cities considered epicenters of COVID-19: Wuhan, China, Italy, and New York City, in the period from January 23 to May 9, 2020. Importantly, this result reveals that among the adopted mitigation measures such as social distancing and wearing of masks, the difference with and without mandated face covering represents the determinant in shaping the trends of the pandemic and spread of the disease. Majority of SARS-CoV-2 infected individuals (80 %) are asymptomatic or present mild symptoms most likely due to a good immune response able to control the advance of the disease" (Channappanavar, *et. al.,* 2020). "There is evidence that these asymptomatic people can infect others with SARS-CoV-2" (Aguirre-Duarte, *et. al*., 2020).

Signs and symptoms of covid-19

"Symptoms and signs associated with viral pneumonia such as fever, cough, sore throat, headache, fatigue, myalgia and dyspnea are frequently shown by patients during the onset of COVID-19" (Chen, *et al.,* 2020). "Additionally, loss of taste or smell and gastrointestinal symptoms like nausea, vomiting or diarrhea has also been reported by infected patients"

(Paderno, *et. al.,* 2020). “Nevertheless, disease severity seems to be strongly associated with underlying host conditions including age, sex and overall health. The latter seems to play a critical role in susceptibility and contribute to the risk of infection. When severe and non-severe patients are compared, conditions such as hypertension, diabetes, cardiovascular and kidney diseases increase the risk of infection two to three-fold” (Yang, *et. al.,* 2020).

Type of covid-19

“Besides interferon family (IFN) type 1 and IFN type 2, a third type of interferon family, termed lambda (IFN-λ), was identified. In fact, this family consists of four members in humans: IFN-λ1/IL-29, IFN-λ2/IL-28A, IFN-λ3/IL28B, and IFN-λ4. They share low homology with type I IFNs and IL-1 and exhibit potent antiviral activity” (Andreakos, *et. al.,* 2019).

“IFN-λ act by binding to a heterodimeric IFN-λ receptor (IFNLR) complex, activating a STAT phosphorylation-dependent signaling cascade and thereby inducing several genes that modulate immunity through a complex forward and feedback loops” (Syedbasha, *et. al.,* 2017). “It has been shown that IFN-λ is induced at lower viral burden in influenza virus infections and before type I IFNs. This is considered a mechanism to limit the initial infection by inducing viral resistance to cells and helping them deal with the virus load” (Galani, *et. al.,* 2017). Also, IFN-λ seems to lack the strong pro-inflammatory effects of type I IFNs and are rather tissue-protective and anti-inflammatory and therefore has been proposed as a potential strategy for the treatment of COVID-19 patients to help with two main clinical problems: persistent virus presence in the lung and induction of a “cytokine storm” (Andreakos, *et. al.,* 2020).

Phases of covid-19

Considering the current knowledge acquired with research data from other coronavirus infections such as Middle East Respiratory Syndrome (MERS) and Acute Respiratory Syndrome (SARS), associated with the clinical features observed in patients infected with SARS-CoV2, it is possible to identify basically three stages or phases in the natural history of COVID-19, regarding disease severity, as below;

First phase

The first phase is related to the onset of the disease and generally characterized by the development of influenza-like symptoms from mild to moderate (Kong, *et. al.,* 2020). In this phase virus can be detected by molecular analysis via reverse transcriptase-polymerase chain reaction (RT-PCR). Most patients in this initial phase may be asymptomatic and even transmit the disease to other people, however, depending on yet unknown factors they may progress to a second stage known as pulmonary phase.

Second phase (pulmonary phase)

In this phase, it is possible to detect pneumonia-like symptoms evidenced as lung opacities as seen in chest radiography or as glass opacities in computed tomography (CT) (Kanne, *et. al.,* 2020). COVID-19 pneumonia presents particularly distinctive features such as severe hypoxemia often associated with near normal respiratory system compliance with variable degrees of severity (Gattinoni, *et. al.,* 2020). Depending on the severity of phase 2 patients can improve or worsen with the necessity of intubation and ventilation.

Third phase (hyper inflammatory phase)

This phase is characterized by hyper inflammation and sepsis of lungs and patient often requires intensive care unit (ICU) and most of them unfortunately cannot overcome the infection.

Mode of entry of covid-19

Upon cell contact, the virus can enter the cells in two ways, either via endosomes or plasma membrane fusion. In both ways spike proteins (S1 e S2) from SARS-CoV-2 mediate attachment to the cell membrane by binding to the angiotensin converting enzymes-2 (ACE2) as the entry receptor (Hoffmann, *et. al.*, 2020). On the other hand, virions are taken up into endosomes, spike proteins are activated by cathepsin L or alternatively by transmembrane protease serine 2 (TMPRSS2) in close proximity to ACE2 receptor, which initiates fusion of the viral membrane with the plasma membrane. The latter mechanism is less likely to trigger an antiviral immune response and is more efficient for viral replication (Shirato, *et. al.*, 2018). Once inside the cell, viral ribonucleic acid (RNA) is released, and polyproteins are translated. Coronavirus genomic RNA encodes nonstructural proteins (NS), that play a critical role in viral RNA synthesis, and structural proteins which are important for new virion assembly. First NS proteins 1a and 1ab are translated and cleaved by the papain-like protease (PIpro) and 3C-like protease (3CLpro) to form functional NS proteins such as helicase or RNA-dependent RNA polymerase complex (RdRp). Structural proteins S1, S2, envelope (E), membrane (M) is translated by ribosomes bound to the endoplasmic reticulum (ER) and presented on its surface as a preparation of virion assembly. The nucleocapsids (N) remain in the cytoplasm and are assembled together with the genomic RNA. The virion precursor is then transported from the ER through the Golgi apparatus to the cell surface via vesicles. Finally, virions are released from the infected cell through exocytosis and a new replication cycle begins (De wit, *et. al.*, 2016).

Prevention of covid-19 transmission

The best way to prevent transmission and illness is to avoid being exposed to the virus. Therefore, some recommendations include wash hands often, avoid close contact, cover mouth and nose with a mask, cover coughs and sneezes, and clean and disinfect frequently touched surfaces daily (CDC, 2020). In this regard, wearing of face masks in public corresponds to the most effective means to prevent inter human transmission (Zhang, *et. al.*, 2020).

Morphology of covid-19

These preliminary observations based on medical experiences since the outbreak of COVID-19 have been driving the search of novel or repurposed drugs to treat this disease. Proteins involved in the SARS-CoV-2 entry and replication mechanism into host cell have been the main targets for drug testing and development. As mentioned before corona viruses are composed by nonstructural proteins (NS) and structural proteins (S). In fact, the SARS-CoV-2 RNA genome consists of eleven open reading frames (ORFs), disposed in the following order: ORF1ab, ORF2 (Spike protein), ORF3a, ORF4 (Envelope protein), ORF5 (Membrane protein), ORF6, ORF7a, ORF7b, ORF8, ORF9 (Nucleocapsid protein), and ORF10 in the 5' to 3' direction. The ORF1a/b codes for a polyprotein (PP1a and PP1ab), which comprises 16 nonstructural proteins (NSPs) (Lei, *et. al*., 2018) NSP1, known as Leader protein, binds to 40S RNA intact (Baez-Santos, *et. al.,* 2015). NSP2, a conserved protein in SARS-CoV-1, was shown to bind two host proteins: prohibitin 1 and prohibitin 2 (PHB1 and PHB2) involved in cell cycle progression, cell migration, cellular differentiation, apoptosis, and mitochondrial biogenesis (Sakai, *et. al.*, 2017). NSP3 is a large papain-like proteinase with approximately 200 kDa in size, whose sequence contains several conserved domains including ssRNA binding, ADPr binding, G-quadruplex

binding, protease (papain-like protease), and NSP4 binding domains besides a transmembrane domain (Lei, *et. al.,* 2018). The papain like protease domain is responsible for the release of NSP1, NSP2, and NSP3 from the N-terminal region of polyproteins 1a and 1ab from corona viruses and therefore is considered an important target for antiviral agents (Baez-Santos, *et. al.*, 2015). NSP4 is a protein that interacts with NSP3 which is essential for viral replication. It contains a transmembrane domain and possibly interacts with host proteins with a function of membrane rearrangement in SARS-CoV-1 (Sakai, *et. al.,* 2017). NSP5 is a 3C-like proteinase (3CLpro) with homology to the Middle East Respiratory Syndrome (MERS) coronavirus protease. This protease is able to cleave at eleven different sites to yield mature and intermediate nonstructural proteins (Tomar, *et. al.,* 2015). NSP6 is thought to be involved in the generation of autophagosomes from the endoplasmic reticulum based on studies with avian coronavirus NSP6, which facilitate assembly of replicase proteins and avoid degradation of viral components (Cottam, *et. al.,* 2014). NSP7 form a complex with NSP8 and NSP12 proteins to produce an active RNA polymerase TeVelthuis, *et. al.,* 2012). Based on studies with porcine reproductive and respiratory syndrome virus (PRRSV), NSP9 has been shown to interact with the DEAD-box RNA helicase 5 (DDX5) cellular protein, an important association for viral replication (Zhang, *et. al.,* 2020). NSP10 interacts with NSP14 resulting in the stimulation of the activity of this latter protein, which function as Sadenosylmethionine (SAM)-dependent (guanine-N7) methyl transferase (N7-MTase) (Ma, *et. al.,* 2015). NSP10 also interacts with NSP16, a 2′-O-methyltransferase, whose activity is stimulated as result of this interaction (Wang, *et, al.,* 2015). NSP11 is a small protein with 13 amino acids that has an unknown function. Its first nine amino acids are identical to the first nine amino acids of NSP12 protein. This latter protein is an RNA-dependent RNA polymerase (RdRp) that makes copies of the viral RNA. NSP12 forms a

complex with NSP7-NSP8 essential for its activity (Subissi, *et. al.,* 2014). NSP13 works as a helicase that seems to interact with NSP12 and have 5′- triphosphatase activity as well. This activity is important to introduce 5′-terminal cap of the viral mRNA during its processing (Ivanov, *et. al.,* 2004) together with NSP14, which has 3′-5′ exoribonuclease activity and N7-methyltransferase activity (Case, *et. al.,* 2016). NSP15 has been characterized as an endoribonuclease that cleaves RNA at specific regions (Bhardwaj, *et. al.,* 2006). NSP15 proteins prevent the host immune sensing system from detecting the virus by degrading viral polyuridine sequences (Hackbart, *et. al.,* 2020). NSP16 is a 2′-O-Ribose-Methyltransferase that methylates the 2′-hydroxy group of adenines during viral RNA processing by using S-adenosylmethionine as the methyl source (Decroly, *et. al.,* 2011). The spike glycoprotein S is a main target of strategies using neutralizing antibodies since SARS-CoV-2 uses this protein to bind to its receptor to mediate membrane fusion and virus entry. Protein S has a trimeric structure with each monomer consisting of two subunits, named S1 and S2, that together account for a molecular weight of approximately 180 kDa (Ou, *et. al.,* 2020). It was shown that SARS-CoV-2 S protein is less stable than SARS-CoV-1, another coronavirus responsible for SARS, and antibodies anti-SARS-CoV-1 S1 protein is able to inhibit SARS-CoV1 entry but not SARS-CoV-2. Also, sera from recovered SARS and COVID-19 patients showed limited cross- neutralization suggesting that a possible recovery from one infection may not protect against other. Interestingly, the S protein of SARS-COV-2 was shown to have a furin cleavage site which is lacking in the S protein of SARS-COV-1 (Walls, *et. al.,* 2020). This could be one of the explanations for the difference in pathogenicity of these two viruses. Besides spike (S) protein, nucleocapsid (N), envelope (E) and membrane (M) proteins, as well as 3CL protease (3CLpro), papain like

protease and RNA-dependent RNA polymerase complex (RdRp) proteins which include the helicase protein have been suggested to be antiviral targets (Calligari, *et. al.*, 2020).

Materials and Methodology

The research design was non-experimental design specifically the cross- sectional descriptive survey, in which the researcher collected data from a large sample drawn from a given population and described certain features of the sample as they were without manipulating any independent variables of the study. According to Schoeman (2019), descriptive surveys help to identify and describe specific phenomena and to identify relationships and differences amongst variables in a study.

Target Population

The target population was 176 non-clinical staff of (NEC) which comprises of the; Gardeners (10), Drivers (12), Attendants (66), and Securities (80) of National Eye Center Kaduna respectively. The respondents were of sound mental status.

Sampling Size

The researcher used sample 146, via Taro-Yamane formular Gardener =10 Where n=correct sample size, N=Population size (10) e=margin of error $(0.05)^2$

The researcher used sample size of 146, via Taro-Yamane formular

FOR GARDENER=10

- $n = \frac{N}{1+N(e)^2}$
- $n = \frac{10}{1+10(0.05)^2}$

- $n = \frac{10}{1+10(0.0025)}$
- $n = \frac{10}{1+(0.025)}$
- $n = \frac{10}{1.025}$
- $n = 9.7 \approx 10$

FOR DRIVERS=12

- $n = \frac{N}{1+N(e)^2}$
- $n = \frac{12}{1+12(0.05)^2}$
- $n = \frac{12}{1+12(0.0025)}$
- $n = \frac{12}{1+0.03}$
- $n = \frac{12}{1.03}$
- $n = 11.6 \approx 12$

FOR ATTENDANTS=66

- $n = \frac{N}{1+N(e)^2}$
- $n = \frac{66}{1+66(0.05)^2}$
- $n = \frac{66}{1+66(0.0025)}$
- $n = \frac{66}{1+0.165}$
- $n = \frac{66}{1.165}$
- $n = 56.65 \approx 57$

FOR SECURITIES=80

- $n = \frac{N}{1+N(e)^2}$
- $n = \frac{80}{1+80(0.05)^2}$
- $n = \frac{80}{1+80(0.0025)}$
- $n = \frac{80}{1+0.2}$
- $n = \frac{80}{1.2}$
- $n = 66.6 \approx 67$

TOTAL SAMPLE = 10+12+57+67 = 146

Sampling Technique

The researcher sampled 146, via Taro- Yamane formular while a multi-stage sampling technique was used. Firstly, a stratified sampling technique was used to classify non-clinical staff of (NEC), Kaduna into 4 groups while a convenient sampling technique was adopted to select groups which were; 10-Gardener, 66- Attendants, 12-Drivers and 80-Securities while a simple random sampling was utilized to distribute questionnaires to the respondents.

Data Collection

The study instrument was an adaptation of the (W.H.O) guideline recommendation for the awareness of Covid-19 questionnaire, made up of 38 questions with numerous sub-questions titled: Questionnaire on awareness of non-clinical staff on the use of protective devices for prevention of covid-19 transmission: A study of (NEC) Kaduna state. It specifically consists of two sections; section A and B. Section A consist of socio-demographic characteristics which has

five (5) items on socio-demographic data of the respondents. Section B comprises of closed ended questions developed; based on the objectives of the study and the information gathered from the literature review.

Data Collection

Prior to data collection, an initial visit was made to the Hospital under the study. An approval letter from the school Research and ethical committee was given to the chief medical advisory committee (C-MAC) of NEC; in other to gain consent to proceed with data collection. The questionnaires were collected immediately in other to ensure high returned rate and minimal errors.

Data Analysis

The data generated was collated, and analyzed using descriptive statistics which comprises of frequency table, bar charts, pie charts and percentages (SPSS-2021 Version).

Results

Table 1.0: Socio-Demographic Data of the Respondents among Non-Clinical Staff of National Eye Centre, Kaduna.

	Age	**Frequency (f)**	**Percentage (%)**
1.	18 – 25 years	13	8.9
	26 – 30 years	24	16.4
	31 – 40 years	65	44.5
	41 year and above	44	30.2
	Sex		
2.	Male	109	74.7

	Female	37	25.3
	Marital Status		
3.	Single	43	29.5
	Married	83	56.8
	Widow	7	4.8
	Divorced	13	8.9
	Educational Qualification		
4.	Primary	19	13.0
	SSCE	109	74.7
	Others	18	12.3
	Working Area		
5.	Gardener	10	6.8
	Attendant	67	45.9
	Securities	57	39.0
	Driver	12	8.3

Table 1.0 (1) shows the age distribution of the respondents, 13 (8.9%) of the respondents are within the range of 18 – 25 years, 24 (16.4%) of the respondents are within the range of 26 – 30 years, 65 (44.5%) of the respondents are within the range of 31 – 40 years while 44 (30.2%) of the respondents are within the range of 41 years and above.

Table 1.0 (2) shows the marital status of the respondents, 43 (29.5%) of the respondents were single, 83 (56.8%) of the respondents were married 7 (4.8%) of the respondents were widow while 13 (8.9%) of the respondents were divorced.

Table 1.0 (3) shows the educational level of the respondents, 19 (13.0%) of the respondents were primary holder, 109 (74.7%) of the respondents were SSCE holder while 18 (12.3%) of the respondents were specified among others qualification (OND/NCE and above).

Table 1.0 (4) shows the working area of the respondents, 10 (6.8%) of the respondents are gardeners, 67 (45.9%) of the respondents are attendants, 57 (39.0%) of the respondents are securities while 12 (8.3%) of the respondents are drivers.

Table 2.0: Levels of Awareness on the Transmission of COVID-19 among Non-Clinical Staff of National Eye Centre, Kaduna.

	How does corona virus spread? Through;	**Frequency (f)**	**Percentage (%)**
1.	Touching	26	17.8
	Coughing	41	28.1
	Sneezing	45	30.8
	Talking	4	2.7
	All of the above	30	20.6
	None of the above	–	–
	COVID-19 is?	**Frequency (f)**	**Percentage (%)**
2.	Airborne Disease	78	53.4
	Water Borne Disease	37	25.3
	Sexually transmitted diseases (STDs)	15	10.3
	Blood Contamination disease	16	11.0

	Symptoms of COVID-19 include the followings: -	**Frequency (f)**	**Percentage (%)**
3.	Fever	12	8.2
	Dry cough	77	52.7
	Sore throat	35	24.0
	Difficulty in breathing	7	4.8
	Fatigue	8	5.5
	Chest-pain	7	4.8
	Have you seen person infected with Corona Virus before?	**Frequency (f)**	**Percentage (%)**
4.	Yes	93	63.7
	No	53	36.3
	The followings are the basic NCDC Protocol:	**Frequency (f)**	**Percentage (%)**
5.	Regular hand washing	39	26.7
	Keeping social distance	47	32.3
	Staying at home	30	20.5
	Wearing face mask	26	17.8
	Wearing face shield only	4	2.7
	Which among the below protocol do you always observe?	**Frequency (f)**	**Percentage (%)**
6.	Regular hand washing	27	18.5
	Keeping social distance	37	25.3
	Staying at home	10	6.8
	Wearing face mask	66	45.3
	Wearing face shield only	6	4.1

	Which among the below protocol do you found difficult to observe?	Frequency (f)	Percentage (%)
7.	Regular hand washing	17	11.6
	Keeping social distance	34	23.4
	Staying at home	71	48.6
	Wearing face mask	19	13.0
	Wearing face shield only	5	3.4
	Which among the below protocols you have never observed?	**Frequency (f)**	**Percentage (%)**
8.	Regular hand washing	11	7.5
	Keeping social distance	62	42.5
	Staying at home	46	31.5
	Wearing face mask	19	13.0
	Wearing face shield only	8	5.5
	Where and when do you observe the COVID-19 protocols?	**Frequency (f)**	**Percentage (%)**
9.	Hospital	37	25.3
	Market	29	19.9
	Car-park	21	14.4
	At home	6	4.1
	Religious and social gathering	27	18.5
	None of the above	2	1.4

	All of the above	24	16.4
	Which way is the best way to curb the spread of the disease?	**Frequency (f)**	**Percentage (%)**
10.	Observing NCDC non-pharmaceutical protocols	81	55.4
	Vaccinating all citizens	23	15.8
	Quarantine	23	15.8
	Lockdown	5	3.4
	Testing everyone	14	9.6
	How easy is frequent hand washing?	**Frequency (f)**	**Percentage (%)**
11.	Not easy	4	2.7
	Easy	31	21.3
	Very easy	111	76.0
	How often do you use facemask?	**Frequency (f)**	**Percentage (%)**
12.	Occasionally	61	41.8
	Always	54	37.0
	When the need arises	31	21.2

Table 2.0 (1) reveals that 26 (17.8%) of the respondents stated that Corona Virus (COVID-19) spread through touching, 41 (28.1%) of the respondents stated that Corona Virus (COVID-19) spread through coughing, 45 (30.8%) of the respondents stated that Corona Virus (COVID-19) spread through sneezing, 4 (2.7%) of the respondents stated that Corona Virus (COVID-19) spread through talking, 30 (20.6%) of the respondents stated that Corona Virus (COVID-19) spread through all of the above mentioned options while none of the respondents mentioned anything against the options above.

Table 2.0 (2) reveals that 78 (53.4%) of the respondents stated that Corona Virus (COVID-19) is airborne disease, 37 (25.3%) of the respondents stated that Corona Virus (COVID-19) is water borne disease, 15 (10.3%) of the respondents stated that Corona Virus (COVID-19) is sexually transmitted diseases (STDs) while 16 (11.0%) of the respondents stated that Corona Virus (COVID-19) is blood contamination disease.

Table 2.1 (3) reveals that 12 (8.2%) of the respondents stated that fever is a symptom of Corona Virus (COVID-19), 77 (52.7%) of the respondents stated that sore throat is a symptom of Corona Virus (COVID-19), 35 (24.0%) of the respondents stated that difficulty in breathing is a symptom of Corona Virus (COVID-19), 8 (5.5%) of the respondents stated that fatigue is a symptom of Corona Virus (COVID-19) while 7 (4.8%) of the respondents stated that chest-pain is a symptom of Corona Virus (COVID-19).

Table 2.0 (4) reveals that a greater proportion of the respondents have seen person infected with Corona Virus (COVID-19) with 93 (63.7%) while 53 representing 36.3% of the respondent declared that they not see person infected with Corona Virus (COVID-19) before.

Table 2.0 (5) shows that 39 (26.7%) of the respondents stated that regular hand washing is basic NCDC protocol, 47 (32.3%) of the respondents stated that keeping social distance is basic NCDC protocol, 30 (20.5%) of the respondents stated that staying at home is basic NCDC protocol, 26 (17.8%) of the respondents stated that wearing of face mask is basic NCDC protocol while 4 (2.7%) of the respondents stated that wearing face shield only is basic NCDC protocol.

Table 2.0 (6) reveals that 27 (18.5%) of the respondents stated that they observed regular hand washing as the protocols against Corona Virus (COVID-19), 37 (25.3%) of the respondents stated that they observed keeping social distance as the protocols against Corona Virus (COVID-

19), 10 (6.8%) of the respondents stated that they observed staying at home as the protocols against Corona Virus (COVID-19), 66 (45.3%) of the respondents stated that they observed wearing face mask as the protocols against Corona Virus (COVID-19) while 6 (4.1%) of the respondents stated that they observed wearing face shield only as the protocols against Corona Virus (COVID-19).

Table 2.0 (7) shows that 17 (11.6%) of the respondents stated that they observed difficult with regular hand washing as the protocols against Corona Virus (COVID-19), 34 (23.4%) of the respondents stated that they observed difficult with keeping social distance as the protocols against Corona Virus (COVID-19), 71 (48.6%) of the respondents stated that they observed difficult with staying at home as the protocols against Corona Virus (COVID-19), 19 (13.0%) of the respondents stated that they observed difficult with wearing face mask as the protocols against Corona Virus (COVID-19) while 5 (3.4%) of the respondents stated that they observed difficult with wearing face shield only as the protocols against Corona Virus (COVID-19).

Table 2.0 (8) shows that 11 (7.5%) of the respondents stated that they have never observe regular hand washing as the protocols against Corona Virus (COVID-19), 62 (42.5%) of the respondents stated that they have never observe keeping social distance as the protocols against Corona Virus (COVID-19), 46 (31.5%) of the respondents stated that they have never observe staying at home as the protocols against Corona Virus (COVID-19), 19 (13.0%) of the respondents stated that they have never observe wearing face mask as the protocols against Corona Virus (COVID-19) while 8 (5.5%) of the respondents stated that they have never observe wearing face shield only as the protocols against Corona Virus (COVID-19).

Table 2.0 (9) shows that 37 (25.3%) of the respondents stated that they observed Corona Virus (COVID-19) protocol in hospital, 29 (19.9%) of the respondents stated that they observed Corona Virus (COVID-19) protocol in market, 21 (14.4%) of the respondents stated that they observed Corona Virus (COVID-19) protocol at car-park, 6 (4.1%) of the respondents stated that they observed Corona Virus (COVID-19) protocol at home, 27 (18.5%) of the respondents stated that they observed Corona Virus (COVID-19) protocol in any religious and social gathering, 2 (1.4%) of the respondents stated that they do not observe Corona Virus (COVID-19) protocol at none of the above stated places while 24 (16.4%) of the respondents stated that they observed Corona Virus (COVID-19) protocol at all of the above stated places.

Table 2.0 (10) shows that 81 (55.4%) of the respondents stated that Corona Virus (COVID-19) can be curbed by observing NCDC non-pharmaceutical protocols, 23 (15.8%) of the respondents stated that Corona Virus (COVID-19) can be curbed by vaccinating all citizens, 23 (15.8%) of the respondents stated that Corona Virus (COVID-19) can be curbed by quarantine, 5 (3.4%) of the respondents stated that Corona Virus (COVID-19) can be curbed by lockdown while 14 (9.6%) of the respondents stated that Corona Virus (COVID-19) can be curbed by testing everyone.

Table 2.0 (11) shows that 4 (2.7%) of the respondents stated that hand washing frequently is not easy, 31 (21.3%) of the respondents stated that hand washing frequently is easy while 111 (76.0%) of the respondents stated that hand washing frequently is very easy.

Table 4.2 (12) shows that 61 (41.8%) of the respondents stated that they used facemask occasionally, 54 (37.0%) of the respondents stated that they used facemask always while 31 (21.2%) of the respondents stated that they used facemask when the need arises.

Table 3.0: Levels of Awareness on the Use of Preventive Devices against COVID-19 among Non-Clinical Staff of National Eye Centre, Kaduna.

	Traditional medicine can cure Corona virus?	**Frequency (f)**	**Percentage (%)**
1.	Yes	41	28.1
	No	59	40.4
	I don't know	46	31.5
	What do you understand by social distance?	**Frequency (f)**	**Percentage (%)**
2.	2 feet apart	102	69.9
	4 feet apart	24	16.4
	6 feet apart	20	13.7
	Which of the following hand hygiene actions can prevent transmission of virus to non-clinical staff of NEC, Kaduna?	**Frequency (f)**	**Percentage (%)**
3.	After touching a patient	27	18.5
	Immediately after exposure to body fluid	27	18.5
	After exposure to the immediate surroundings of the patient	22	15.0
	Before putting on and upon removal of PPE including gowns	20	13.7
	All of the above	50	34.3
	What do you think we can do as a community to reduce the spread COVID-19?	**Frequency (f)**	**Percentage (%)**
4.	Eat healthy/practice sports	19	13.0
	Attending religious gatherings	–	–

	Social distancing/avoid crowd	51	34.9
	Volunteer to support whenever possible	25	17.1
	Avoid handshakes and face kissing	49	33.6
	I don't know	2	1.4
	Do you think we can prevent such a global pandemic in the future?	**Frequency (f)**	**Percentage (%)**
5.	Yes	128	87.6
	No	3	2.1
	May be	15	10.3
	Which of these can prevent/help against the occurrence of such a global pandemic in the future?	**Frequency (f)**	**Percentage (%)**
6.	Reduced international travels	11	7.5
	Improve surveillance in the human and animal health sectors	9	6.2
	Establish early alerts and global warning systems for infectious diseases	10	6.8
	Collaboration between environmental, animal and human health workers	10	6.8
	Intensify research on preventive measures such as vaccines/diagnosis	50	34.2
	Raise public awareness of proper hygiene/healthy habits	33	22.7
	Prioritize human life/health welfare over animal or environmental ones	23	15.8

Table 3.0 (1) shows that 41 (28.1%) of the respondents agreed that traditional medicine can cure Corona Virus (COVID-19), 59 (40.4%) of the respondents disagreed that traditional medicine cannot cure Corona Virus (COVID-19) while 46 (31.5%) of the respondents are undecided if traditional medicine can cure Corona Virus (COVID-19) or not.

Table 3.0 (2) shows that 102 (69.9%) of the respondents stated that 2 feet apart from other is what they understood by social distance, 24 (16.4%) of the respondents stated that 4 feet apart from other is what they understood by social distance while 20 (13.7%) of the respondents stated that 6 feet apart from other is what they understood by social distance.

Table 3.0 (3) shows that 27 (18.5%) of the respondents stated that after touching a patient is the hand hygiene actions that can prevent transmission of Corona Virus (COVID-19) from non-clinical staff of NEC, Kaduna, 27 (18.5%) of the respondents stated that immediately after expose to body fluid is the hand hygiene actions that can prevent transmission of Corona Virus (COVID-19) from non-clinical staff of NEC, Kaduna, 22 (15.0%) of the respondents stated that after exposure to the immediate surroundings of the patient is the hand hygiene actions that can prevent transmission of Corona Virus (COVID-19) from non-clinical staff of NEC, Kaduna, 20 (13.7%) of the respondents stated that before putting on and upon removal of PPE including gowns is the hand hygiene actions that can prevent transmission of Corona Virus (COVID-19) from non-clinical staff of NEC, Kaduna while 50 (34.3%) of the respondents stated that all of the above mentioned options are the hand hygiene actions that can prevent transmission of Corona Virus (COVID-19) from non-clinical staff of NEC, Kaduna.

Table 3.0 (4) shows that 19 (13.0%) of the respondents stated that eat healthy/practice sport is what we can do as a community to reduce the spread of Corona Virus (COVID-19), 51 (34.9%)

of the respondents stated that social distancing/avoiding crowd is what we can do as a community to reduce the spread of Corona Virus (COVID-19), 25 (17.1%) of the respondents stated that volunteer to support whenever possible is what we can do as a community to reduce the spread of Corona Virus (COVID-19), 49 (33.6%) of the respondents stated that avoiding handshakes and face kissing is what we can do as a community to reduce the spread of Corona Virus (COVID-19) while 2 (1.4%) of the respondents stated that they do not know anything about what to do as a community to reduce the spread of Corona Virus (COVID-19).

Table 3.0 (5) shows that 128 (87.6%) of the respondents agreed that we can prevent such global pandemic in the future, 3 (2.1%) of the respondents disagreed that we cannot prevent such global pandemic in the future while 15 (10.3%) of the respondents undecided maybe we can prevent such global pandemic in the future or not.

Table 3.0 (6) shows that 11 (7.5%) of the respondents stated that reduced international travels is the logic to prevent/help against the occurrence of such a global pandemic in the future, 9 (6.2%) of the respondents stated that improve surveillance in the human and animal health sector is the logic to prevent/help against the occurrence of such a global pandemic in the future, 10 (6.8%0 of the respondents stated that established early alerts and global warning system for infectious diseases is the logic to prevent/help against the occurrence of such a global pandemic in the future, 10 (6.8%) of the respondents stated that collaboration between environmental, animal and human health workers is the logic to prevent/help against the occurrence of such a global pandemic in the future, 50 (34.2%) of the respondents stated that intensify research on preventive measures such as vaccines/diagnosis is the logic to prevent/help against the occurrence of such a global pandemic in the future, 33 (22.7%) of the respondents stated that raise public awareness of proper hygiene/healthy habits is the logic to prevent/help against the occurrence of such a

global pandemic in the future while 23 (15.8%) of the respondents stated that prioritize human life/health welfare over animal or environmental ones is the logic to prevent/help against the occurrence of such a global pandemic in the future.

Table 4.0: Possible Protective Devices Commonly Used among Non-Clinical Staff of National Eye Centre, Kaduna.

	Do you think that the government is doing enough to stop the global pandemic in Nigeria?	**Frequency (f)**	**Percentage (%)**
1.	Yes	99	67.8
	No	19	13.0
	May be	28	19.2
	Do you agree with the obligatory lockdown/measures Nigeria is taking?	**Frequency (f)**	**Percentage (%)**
2.	Yes	40	27.4
	No	77	52.7
	May be	29	19.9
	Do you agree with the government stay-at-home order?	**Frequency (f)**	**Percentage (%)**
3.	Yes	22	15.1
	No	86	58.9
	May be	38	26.0
	Are you complying with the government stay-at-home order?	**Frequency**	**Percentage (%)**
4.	Yes	11	7.5

	No	72	49.3
	Sometimes	63	43.2
	Do you believe in Chinese doctors' intervention in Nigeria?	**Frequency (f)**	**Percentage (%)**
5.	Yes	38	26.0
	No	51	34.9
	May be	57	39.1
	Will you accept COVID-19 vaccine?	**Frequency (f)**	**Percentage (%)**
6.	Yes	102	69.9
	No	28	19.2
	May be	16	10.9
	On a Scale of 1–5, how satisfied are you with your country's response against the COVID-19 pandemic?	**Frequency (f)**	**Percentage (%)**
7.	Not satisfied	29	19.9
	Partly satisfied	33	22.6
	Satisfied	38	26.0
	More than satisfied	27	18.5
	Very satisfied	19	13.0
	How satisfied are you with the media/social media coverage of the COVID-19 pandemic?	**Frequency**	**Percentage (%)**
8.	Very satisfied/keeps me updated	16	11.0
	Makes me worry more/stressful	30	20.5
	Not enough information	14	9.6

	There are more lies than truth	66	45.2
	I don't follow any media update	14	9.6
	No comment	6	4.1
	Where do you wear facemask?	**Frequency (f)**	**Percentage (%)**
9.	At home	5	3.4
	In the hospital	80	54.8
	Everywhere	61	41.8

Table 4.0 (1) shows that 99 (67.8%) of the respondents stated that government is doing enough to stop the global pandemic in Nigeria, 19 (13.0%) of the respondents stated that government is not doing enough to stop the global pandemic in Nigeria while 28 (19.2%) of the respondents stated that they do not really know if is government is doing enough to stop the global pandemic in Nigeria or not.

Table 4.0 (2) shows that 40 (27.4%) of the respondents agreed with the obligatory lockdown/measures Nigeria is taking, 77 (52.7%) of the respondents disagreed with the obligatory lockdown/measures Nigeria is taking while 29 (19.9%) of the respondents undecided with the obligatory lockdown/measures Nigeria is taking.

Table 4.0 (3) shows that 22 (15.1%) of the respondents agreed with the government stay-at-home order, 86 (58.9%) of the respondents disagreed with the government stay-at-home order while 38 (26.0%) of the respondents undecided with the government stay-at-home order.

Table 4.0 (4) shows that 11 (7.5%) of the respondents complied with the government stay-at-home order, 72 (49.3%) of the respondents did not comply with the government stay-at-home

order with the government stay-at-home order while 63 (43.2%) of the respondents are sometime complied with the government stay-at-home order.

Table 4.0 (5) shows that 38 (26.0%) of the respondents believed in Chinese doctors' intervention in Nigeria, 51 (34.9%) of the respondents did not believe in Chinese doctors' intervention in Nigeria while 58 (39.1%) of the respondents may believe and may not believe in Chinese doctors' intervention in Nigeria.

Table 4.0 (6) shows that 102 (69.9%) of the respondents stated that they can accept COVID-19 vaccine, 28 (19.2%) of the respondents stated that they cannot accept COVID-19 vaccine while 16 (10.9%) of the respondents did not sure if they can accept COVID-19 vaccine or not.

Table 4.0 (7) shows that 29 (19.9%) of the respondents stated that they are not satisfied with the country's response against the Corona Virus (COVID-19), 33 (22.6%0 of the respondents stated that they are partly satisfied with the country's response against the Corona Virus (COVID-19), 38 (26.0%) of the respondents stated that they satisfied with the country's response against the Corona Virus (COVID-19), 27 (18.5%) of the respondents stated that they are more satisfied with the country's response against the Corona Virus (COVID-19 while 19 (13.0%) of the respondents stated that they are very satisfied with the country's response against the Corona Virus (COVID-19).

Table 4.0 (8) shows that 16 (11.0%) of the respondents stated that they are very satisfied/keeps them updated with the media/social media coverage about the COVID-19 pandemic, 30 (20.5%) of the respondents stated that media/social media coverage about theCOVID-19 pandemic makes them worry more/stressful, 14 (9.6%) of the respondents stated that there is not enough information with the media/social media coverage about the COVID-19 pandemic, 66 (45.2%) of

the respondents stated that there are more lies than truth with the media/social media coverage about the COVID-19 pandemic, 14 (9.6%) of the respondents stated that they do not follow any media update about the COVID-19 pandemic while 6 (4.1%) of the respondents gives no comment about the media/social media coverage with the COVID-19 pandemic.

Table 4.0 (9) shows that 5 representing 3.4% of the respondents stated that they were facemask at home, 80 representing 54.8% of the respondents stated that they ware their own facemask in the hospital while 61 representing 41.8% of the respondents reveal that they were facemask everywhere they are.

Discussion

Majority of the respondent's ages 65 represent 44.5% of the respondents are within the age range of 31-40 years, Majority of the respondents were male 109 (74.7%), also the respondents of marital status, majority 83 represent 56.8% of the respondents were married, educational level of the respondents, 109 (74.7%) of the respondents were SSCE holder. Finally, on the working areas of the respondents, majority 57 (39.0%) of the respondents were securities, 10 (6.8%) of the respondents were gardeners, 67 (45.9%) of the respondents were attendants, while 12 (8.3%) of the respondents were drivers. This implies that a greater percentage of the respondents were securities.

The whole respondents absolutely agreed that they have heard about corona virus (COVID-19) before with 146 representing 100%. Which was supported by the study outcome of; (Reuben, et al., 2021). On knowledge, Attitudes and Practices towards COVID-19: An Epidemiological Survey in North-Central Nigeria. Who opined that; respondents had good knowledge (99.5%) (Walls, *et. al.,* 2020) COVID-19, gained mainly through the internet/social media (55.7%) and

Television (27.5%) contrary to the study outcomes of; (Li, *et. al*., 2020) On Knowledge, attitudes, and practices related to Corona virus disease 2019 during the outbreak among workers in China, which opined that; older respondents had decreased levels of knowledge and practices related to COVID-19(both P values for the trend & amp; lt; 0.001), while better-educated respondents had increased levels of knowledge and practices related to COVID-19 (both P values for the trend & amp; lt; 0.001) On the respondents sources of information Majority 80 (54.8%) of the respondents got their information about COVID-19 through radio and television news, which is the same with the study outcomes of; (Gattinoni, *et. al*., 2021). On role of mass media and its impact on general public during corona virus disease 2019 pandemic in North India: An online assessment, whose result revealed that; the use of internet/social media was the highest, followed by TV news before and during lockdown Majority; 103 (70.5%) accepted that Corona Virus (COVID-19) is real, furthermore, findings also revealed that 79 (54.1%) respondents opined that Corona Virus(COVID-19) is viral disease, Majority;109 (74.7%) of the respondents stated that Corona Virus (COVID-19) was discovered from Wuhan – China.

Majority 26 (17.8%0 of the respondents stated that Corona Virus (COVID-19) spread through touching, 41 (28.1%) of the respondents stated that Corona Virus (COVID-19) spread through coughing, 45 (30.8%) of the respondents stated that Corona Virus(COVID-19) spread through sneezing, also study findings revealed that, majority 78 (53.4%) of the respondents stated that Corona Virus (COVID-19) is airborne disease; Majority 77 (52.7%) of the respondents stated that sore throat is a symptom of Corona Virus(COVID-19), furthermore, study shows that; 27 (18.5%) of the respondents stated that they observed regular hand washing as the protocol against Corona Virus (COVID-19), 37 (25.3%) of the respondents stated that they observed keeping social distance as the protocol against Corona Virus (COVID-19), 10 (6.8%) of the

respondents stated that they observed staying at home as the protocol against Corona Virus (COVID-19), 66 rep (45.3%) of the respondents stated that they observed wearing face mask as the protocol against Corona Virus (COVID-19), majority; 37 (25.3%) of the respondents stated that they observed Corona Virus (COVID-19) protocol in hospital, Majority 111 (76.0%) of the respondents stated that hand washing frequently is very easy. The above study findings were similar to that of; (Hactabart, *et. al.,* 2020). On knowledge, Attitudes, and practices about COVID-19 among Healthcare Workers in Iran which revealed that; More than 90% of participants correctly recognized the main symptoms, transmission route, and preventive measures for COVID-19.

Majority 59 (40.4%) of the respondents disagreed that traditional medicine cannot cure Coronavirus (COVID-19). Which is on the contrary to the study findings of; (Ivanov, *et. al.,* 2021) On knowledge, attitude and practice of Nigerian medical students towards complementary and alternative medicine in covid-19 management who stated that; 112 (74.7%) had a good attitude, toward CAM use in COVID-19 prevention and managements Also, study shows that 102 (69.9%) of the respondents stated that 2 feet apart from other is what they understood by social distance 50 (34.2%) of the respondents stated that intensify research on preventive measures such as vaccines/diagnosis is the logic to prevent/help against the occurrence of such a global pandemic in the future, 33 (22.7%) of the respondents stated that raise public awareness of proper hygiene/healthy habits is the logic to prevent/help against the occurrence of such a global pandemic in the future, which is in line with the study outcomes of; (Paderno, *et. al.,* 2021). Knowledge, Attitudes and Practices towards COVID-19: An Epidemiological Survey in North-Central Nigeria. Who stated that; 82.3% practicing social distancing/self-isolation, improved personal hygiene and using face mask respectively.

Majority; 99 (67.8%) of the respondents stated that government is doing enough to stop the global pandemic in Nigeria, 77 (52.7%) of the respondents disagreed with the obligatory lockdown/measures Nigeria is taking, 86 (58.9%) of the respondents disagreed with the government stay-at-home order. Also, the study's finding revealed that; 102 (69.9%) of the respondents stated that they can accept COVID-19 vaccine. But, in opposite to the study outcomes of (Paderno, *et. al.,* 2021). Knowledge, Attitudes and Practices towards COVID-19: An Epidemiological Survey in North-Central Nigeria who opined that; 61.8% of the respondents have no confidence in the present intervention by Chinese doctors, only 29.0% would accept COVID-19 vaccines when available.80 (54.8%) of the respondents stated that they wear their own facemask in the hospital while 61 (41.8%) of the respondents revealed that they wear facemask everywhere they are. The study outcomes conformed with the study results of; (Kampf, *et. al.*,2020) on Potential sources, modes of transmission and effectiveness of prevention measures against SARS-CoV-2. Who stated that; various prevention measures such as hand washing, hand disinfection, face masks, gloves, surface disinfection or physical distancing for the healthcare setting and in public are analyzed for their expected protective effect.

Awareness of the non-clinical staff of any health care facilities, on the preventive principles will go a long way in curtailing the spread of the diseases since their knowledge deficit of the clinical jargons and pathophysiology of the diseases make them an high risk populace, however it will be a compliments to nurses and the profession at large if the clinical staff are acquainted with the preventive knowledge especially in this challenging era of pandemic will further prevent the disease spread hence, support the eradication of the menace.

Limitations

- Financial constraint hinders the researcher from covering a large population that could have been used to generalize the study.
- Attitude of respondents towards answering some questions as they felt reluctant to answer some questions, they were however assured of the confidentiality and anonymity.
- Cross-sectional nature of the research may not have showed a direct causal relationship between variables as it only explores views of respondents.

Summary

A study on awareness of non-clinical staff on the use of protective devices for prevention of covid-19 transmission: a study of NEC Kaduna. A non-experimental design specifically the cross- sectional descriptive survey was used while Out of the targeted 176 non-clinical staff comprises of; 10 Gardener, 12 Drivers, 66 Attendants and 80 Securities respondents. The study sample 146, via taro- Yamane formular while a multi-stage sampling technique comprises of stratified convenient and simple random sampling techniques respectively. The study instrument was an adaptation of the (W.H.O) guideline recommendation for the awareness of Covid-19. Findings revealed that; the whole respondents absolutely agreed that they have heard about corona virus (COVID-19)before with 146 (100%).On the respondents sources of information. Majority 80 (54.8%) of the respondents got their information about COVID-19 through radio and television news. Furthermore, findings also revealed that 79 (54.1%) respondents opined that Corona Virus (COVID-19) is viral disease. Majority; 109 (74.7%) of the respondents stated that Corona Virus (COVID-19) was discovered from Wuhan – China. Majority; 26 (17.8%) of the respondents stated that Corona Virus (COVID-19) spread through touching, 41 (28.1%) of the respondents stated that Corona Virus (COVID-19) spread through coughing, 45 (30.8%) of the respondents stated that Corona Virus (COVID-19) spread through sneezing, also study findings

revealed that, majority 78 (53.4%) of the respondents stated that Corona Virus (COVID-19) is airborne disease. Majority 77 (52.7%) of the respondents stated that sore throat is a symptom of Corona Virus.

(COVID-19), furthermore, study shows that; 27 (18.5%) of the respondents stated that they observed regular hand washing as the protocol against Corona Virus (COVID-19), 37 (25.3%) of the respondents stated that they observed keeping social distance as the protocol against Corona Virus (COVID-19). Majority 66 (45.3%) of the respondents stated that they observed wearing face mask as the protocol against Corona Virus (COVID-19). Majority 111representing 76.0% of the respondents stated that hand washing frequently is very easy. Majority 59 (40.4%) of the respondents that they disagreed that traditional medicine cannot cure Coronavirus (COVID-19). Majority; 99 (67.8%) of the respondents stated that government is doing enough to stop the global pandemic in Nigeria, 77 (52.7%) of the respondents disagreed with the obligatory lockdown/measures Nigeria is taking, 86 (58.9%) of the respondents disagreed with the government stay-at-home order. Also, the study finding revealed that; 102 (69.9%) of the respondents stated that they can accept COVID-19 vaccine.

Conclusion

The finding showed that many majorities of the non-clinical staff are aware of the Sources of information on the Use of Protective Devices against Transmission of COVID-19 in NEC Kaduna through Radio and Television news. The important of awareness of non-clinical staff on the use of protective devices for prevention of covid-19 transmission cannot be over emphasized because many staff maintained social distancing and wore face-mask to protect and prevent

themselves from highly contagious corona virus. As good as its, there is need for adequate knowledge/awareness on the spread of corona virus.

Recommendations

- Community-based health campaigns are necessary to hold optimistic attitudes and practice appropriate intervention measures devoid of misconceptions.
- Government should provide Personal Protective Equipment (PPE) and Quarantine center.
- Enlightenment campaigns on the benefits of corona virus vaccine issues should be arranged for public consumption from time to time so that even the uneducated can have access to covid19 vaccine related knowledge.
- Massive awareness of corona virus transmission should be propagated by the government and non-governmental organizations (NGOs) through the mass media for effective information dissemination to urban and rural area so as to get them more informed.
- School eye health and outreach programmers should be encouraged in order to create awareness of infection, prevention and control of corona virus disease.

Suggestions for Further Studies

Based on the findings of this study, it is therefore suggested that further study should be carried out to include the non-clinical staff of all tertiary facilities in Kaduna state and Nigeria at large on awareness of non-clinical staff on the use of protective devices for prevention of covid-19 transmission.

Ethical approval and Consent

The approval for this research was given by the Research and Ethics Committee (REC) of National Eye Centre, Kaduna State, Nigeria. Respondents' written consent has been collected and preserved by the author(s).

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