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10TH EDITION LAUTECH JOURNAL OF NURSING

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College of Health Sciences,
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1.   LAUTECH Journal of Nursing (LJN) has the goal of becoming the most widely cited Nursing Journal in West Africa with Impact Factor Value of 0.861 based on International Citation Report (ICR) for the year 2020-2021.

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Prof. Florence O. Adeyemo
The Editor-in-Chief
doctoradeyemo@yahoo.com or
lautechjournal@gmail.com

LIST OF CONTRIBUTORS

ADETUNMISE OLUSEYI OLAJIDE

Faculty of Nursing Science,
Ladoke Akintola University of Technology,
Ogbomoso, Oyo State, Nigeria.
Phone No: 08037287328.
Email: adetunmiseolajide@gmail.com

ADERONKE JULIENNA ADETUNJI

School of Nursing,
Lagos University Teaching Hospital,
Idi-Araba, Lagos
Phone No: 08033308938
Email: ronkeadetunji56@gmail.com

ADEYEMO FLORENCE O.

Department of Community/Public Health,
Faculty of Nursing Sciences,
Ladoke Akintola University of Technology,
Osogbo, Nigeria
doctoradeyemo@yahoo.com
+2348033579737

AGATHA OGUNKORODE

Department of Nursing Science,
College of Medicine & Health Sciences,
Afe Babalola University, Ado-Ekiti, Nigeria;
Phone No: 08065821012, +2349078129160
Email:ogunkorodeqo@abuad.edu.ng

AJAYI, ANTHONY

Department of Physiotherapy,
Ahmadu Bello University Teaching Hospital
Zaria, Nigeria
Phone No: +2348023639269
Email: ehichristo@yahoo.com

ANYEBE, EMMANUEL EJEMBI

Department of Nursing Sciences,
Faculty of Clinical Sciences,
University of Ilorin, Kwara State, Nigeria
Phone No: +2348036422771
Email: ejembianyebe@gmail.com;
        anyebe.ee@unilorin.edu.ng;

AYISHETU U. MUSA-MALIKI

Department of Nursing Sciences,
Ahmadu Bello University, Zaria – Nigeria.
Email: aumusamaliki@abu.edu.ng,
aishaudu@yahoo.com
Phone Number: +234 7038159582
Twitter: @Ayi_1

BARAKAT BOLAJOKO

Department of Nursing Science,
College of Medicine and Health Sciences,
Afe Babalola University, Ado-Ekiti, Nigeria
Phone No: 08140551353
Email: ayooreoluwa@gmail.com

CHIKA C. H. ODIRA

Department of Nursing Science,
Nnamdi Azikiwe University Awka,
Anambra State, Nigeria
Email: chikachioma@gmail.com,
Phone No: +2347030615243

CHRISTIANA OLANREWAJU SOWUNMI;

Babcock University School of Nursing,
Ilishan Remo, Ogun State, Nigeria
lanresowunmi@hotmail.com
+2348023500321

CONSTANCE O. IZEKOR

School of Post Basic Nursing,
Irrua Specialist Teaching Hospital,
Irrua, Nigeria
Phone No: +234 8056461045
Email: constanceizekor@isth.com.ng

DALHAT SANI KHALID

Department of Nursing Science,
Faculty of Allied Health Sciences,
College of Medical Sciences,
Ahmadu Bello University Zaria, Nigeria
Phone No:07035385167
Email: dksanni@abu.edu.ng

DEBORAH TOLULOPE ESAN

Department of Nursing Science,
College of Medicine and Health Sciences,
Afe Babalola University, P.M.B. 5454,
Ado-Ekiti, Nigeria
esandt@abuad.edu.ng
+234(0)8062484864

DELIVERANCE BROTOBOR

Department of Nursing Science,
Ambrose Alli University, Ekpoma, Nigeria
deliverancebrotobor@gmail.com
+234 9055468987

EHWARIEME TIMOTHY A.

Department of Nursing Science,
School of Basic Medical Sciences,
University of Benin, Benin City,
Edo State, Nigeria
Phone No:08060696870
Email timy4real12@gmail.com

EDITH N. CHIEJINA

Department of Nursing Science,
Nnamdi Azikiwe University Awka,
Anambra State, Nigeria
Phone no: +2348037463279
Email:nkechichiejina@yahoo.com

EMMANUEL A. OYEDELE

Department of Nursing Science,
College of Health Sciences,
University of Jos, Jos, Plateau State, Nigeria
Phone No: 08038266157
Email: Juliedad2003@yahoo.com

ESEOGHENE OGBURU

Department of Nursing Science,
College of Medicine and Health Sciences,
Afe Babalola University, Ado-Ekiti, Nigeria
Phone No:08103769157
Email: aniogburu13@gmail.com

EZEAKA PATIENCE

Nursing Services department,
Lagos University Teaching Hospital, Lagos
Phone No:08060627242
Email: ezeakafavour@gmail.com

F. ELIZABETH OJO

Department of Nursing,
College of Medicine and Health Sciences,
Afe Babalola University of Ado-Ekiti
Phone no: +2348034292020
Email: ojofe@abuad.edu.ng

FOLASHADE WINA

Department of Nursing Science,
University of Jos, Jos. Plateau State, Nigeria
Phone no: 08065308349
Email:fshabal2002@yahoo.com.

GAKNUNG BONJI

Department of Nursing Science,
University of Jos, Jos. Plateau State, Nigeria
Phone No: +2348033959627
Email bonjigaknung@gmail.com
        gaknungb@unijos.edu.ng

GRACE O. DANIEL

Department of Nursing Science,
University of Jos, Jos. Plateau State, Nigeria
Phone no: +234 8036285950
Email:gracemola2002@yahoo.co.uk

I. D. OWOEYE

Department of Nursing,
College of Medicine and Health Sciences,
Afe Babalola University of Ado-Ekiti
Phone no: +2348034252290
Email: owoeyeid@abuad.edu

IDRIS ABDULRASHID DABAI

Department of Nursing Science,
Bayero University, Kano Nigeria
08063375818
idrizdabai@gmail.com

IRODI C. CANIS

Department of Nursing,
Igbinedion University, Okada, Edo State
Phone No: 08034901130.
Email: Irodicanis@yahoo.com

ISIBOR EWERE ANITA

Department of Nursing
University of Benin, Nigeria
Phone No:08085893875
Email ewere85@gmail.com

MERCY OLUFUNKE IWAOLA

Department of Nursing,
Babcock University Teaching Hospital,
Ilishan Remo, Ogun State, Nigeria
Phone No: 07036138033.
Email olufunkeiwalola@yahoo.com

MOHAMMED, ZULAIHA BALA.

Department of Physiotherapy,
Ahmadu Bello University Teaching Hospital
Zaria, Nigeria
Phone No: +2347035106155
Email zulybal27@gmail.com

NADYEN SHIKPUP JORDAN.

Department of Nursing Science,
University of Jos, Jos. Plateau State, Nigeria
Phone No: 070396424284.
Email nadyenshikpup@gmail.com

NDIE, E. C.

Department of Nursing Science,
National Open University of Nigeria,
Abuja Nigeria,
Plot 91 Cadastral Zone, Jabi, Abuja.
Phone No:07066789961.
Email: chubike05@yahoo.com

NZELUEAKA HELEN A.

Department of Nursing Science,
School of Basic Medical Sciences,
University of Benin, Benin City,
Edo State, Nigeria.
Phone No:07068813915
Email: nzelueakah@gmail.com

OGUNLEYE O. R.

School of Nursing Ekiti State Teaching Hospital,
Ado-Ekiti
+2347061825698
Oyinlolaogunleye12@gmail.com

OGWA, E. T.

Alex Ekwueme University Teaching Hospital
Abakaliki
Phone No:08035074128
Email: favourogwa@yahoo.com

OKO-OSE, JOSEPHINE

Department of Nursing
University of Benin, Nigeria
joechiazor@yahoo.com
08034078785,

OLADAPO T. OKAREH

Department of Environmental Health Sciences,
Faculty of Public Health,
University of Ibadan, Ibadan
Phone No: 08057311182.
Email: dapsy2001@yahoo.co.uk

OLAOLORUNPO OLORUNFEMI

Department of Medical-Surgical Nursing,
Faculty of Basic Medical Science,
Federal University Oye-Ekiti,
Ekiti State, Nigeria
Phone: +2348034694675
Email:olaolorunfemi@yahoo.com
https://orcid.org/0000-0001-9525-8757

OLAWALE JINAID JUBRIL

Department of Physiotherapy,
Ahmadu Bello University Teaching Hospital
Zaria, Nigeria
Phone No: +2347035106155.
Email; jjolawale@yahoo.com

OLUBIYI BISOLA

Research Hub, Africa
The bunker 3 Atabara Street, off Cairo Street ,
Wuse 2, Abuja
Phone No:08038105402
Email: omotooke@gmail.com

OLUBIYI M. VINCENT

Department of Physiology,
College of Health Sciences,
Kogi State University, Ayingba, Kogi State
Phone No: 09031151038
Email: mavolubiyi@yahoo.com

OLUBIYI SIMEON KAYODE

Department of Nursing Sciences,
Faculty of Clinical Sciences,
College of Health Sciences,
University of Ilorin
Phone No: 08033617649
Email simeonolubiyi@gmail.com
　　　olubiyiskunilorin.edu.ng

OLUBUNMI OLUWAKEMI YEJIDE

Department of Nursing,
National Open University of Nigeria,
Ado-Ekiti Study Centre
Phone No: 08169074178
Email: olubunmikemi3@gmail.com

OLUFAYOKE VICTORIA MIDE-ATOLANI

School of Nursing Ekiti State Teaching Hospital,
Ado-Ekiti
+2348068968892
mideatolanifayokemi@gmail.com

OLUWAFUNMILAYO ESTHER FADARE

Department of Nursing Science,
College of Medicine & Health Sciences,
Afe Babalola University, Ado-Ekiti, Nigeria;
07063545905
phadarephunmie@gmail.com

OLUWASEUN ENIOLA ADEGBILERO-IWARI

Department of Community Medicine,
College of Medicine & Health Sciences.
Afe Babalola University, Ado-Ekiti, Nigeria.
07060826910
Seuneniola01@gmail.com

OLUWASEYI ABIODUN AKPOR

Department of Nursing Science,
College of Medicine & Health Sciences,
Afe Babalola University, Ado-Ekiti, Nigeria;
Phone No: +234706851599.
akporoa@abuad.edu.ng

OLAWUYI VICTORIA FEHINTOLA

Department of Nursing,
National Open University of Nigeria,
Ado-Ekiti Study Centre
Phone No: 08139380475.
Email: fehintideraa@gmail.com

OMOROGBE CHRISTIE E.

Department of Nursing Science,
School of Basic Medical Sciences,
University of Benin, Benin City,
Edo State, Nigeria
Phone No: 08062304948.
Email: omorogbechristie@gmail.com

ONASOGAA. OLAYINKA

Department of Nursing Sciences,
Faculty of Clinical Sciences,
College of Health Sciences,
University of Ilorin
Phone No: 08064967578
Email yinka_onasoga@yahoo.

OPALUWA, SURAJO. AHMODU

Department of Medical Microbiology,
Ahmadu Bello University Teaching Hospital
Zaria, Nigeria
Phone No: +2348034516359
Email: ahmed_opaluwa@yahoo.co.uk

PATRICIA O. AKOWE

Primary Health Care Department,
Etsako East Local Government Area,
Agenebode, Edo State, Nigeria
Phone No: +234 9026339245
Email:patakowe@yahoo.com

PAULINE O. M. EZENDUKA

Department of Nursing Science,
Faculty of Health Sciences and Technology,
Nnamdi Azikiwe University Awka,
Anambra State, Nigeria
Email:poezendukap@gmail.com,
Email:+2348033476403

PETER UDEH ADA

Department of Nursing Science,
University of Jos, Jos. Plateau State. Nigeria
Phone No: 08039365746
Email:petersclevery@gmail.com

QUEEN STELLA OTAIGBE

Edo State School of Midwifery,
Benin City, Nigeria
Phone No: +234 7031841598
Email:otaigbeqs@gmail.com

RISIKAT IDOWU FADARE

Department of Nursing Science,
College of Medicine & Health Sciences,
Afe Babalola University, Ado-Ekiti, Nigeria;
08034679248
fadareri@abuad.edu.ng

SAROR, L. A.

Department of Nursing Services,
Ahmadu Bello University Teaching Hospital
 Zaria, Nigeria
Phone No: +234 8028483240
Email; awasaror2@gmail.com

SALIHU ABDURRAHMAN KOMBO

Department of Nursing Science,
Faculty of Allied Health Sciences,
College of Medical Sciences,
Ahmadu Bello University Zaria, Nigeria
08061307902
aksalihu@abu.edu.ng

SERAH OSAMUDIAMEN BOLAJI-OSAGIE

Department of Nursing,
University of Benin, UNIBEN
Phone No: 07064938101
Email: princy_911

SINEGUGU E. DUMA

Department of Health and Rehabilitation Sciences,
University of Cape Town, South Africa.
Phone Number: +27 824492635
Email: dumas1@ukzn.ac.za

TOLULOPE FUNMILOLA OJO

Department of Public Health,
Afe Babalola University, Ado-Ekiti, Nigeria
ojotolulopef@abuad.edu.ng
08169195591

TRENG NAANFWANG. URBANUS

Department of Nursing Science,
University of Jos, Jos. Plateau State Nigeria.
Phone No: 08138250941
Email:trengurbanus@yahoo.com

UMAR N. J.

Department of Nursing Sciences,
Faculty of Clinical Sciences,
College of Health Sciences,
University of Ilorin
Phone No: 08065482425
Emailumaribna@gmail.com

YAHAYA HAMZA SANI

Department of Nursing Science,
Faculty of Allied Health Sciences,
College of Medical Sciences,
Ahmadu Bello University Zaria, Nigeria
+2347035385167
hamzayahaya@abu.edu.ng

YUSUF ABDURRASHID GAMBARI

Department of Nursing Sciences
Faculty of Clinical Sciences
College of Health Sciences
University of Ilorin, Ilorin, Kwara State
08072777457
yusufgambary@gmail.com

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ASSESSMENT OF KNOWLEDGE AND COMPLIANCE WITH CORONAVIRUS PROTOCOLS AMONG HEALTHCARE PROFESSIONALS

DALHAT SANI KHALID; SALIHU ABDURRAHMAN KOMBO; IDRIS ABDULRASHID DABAI & YAHAYA HAMZA SANI

ABSTRACT

Coronavirus disease (COVID-19) is an infectious viral disease of the respiratory system, it is believed to be caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). This research was carried out to assess the knowledge and compliance to COVID-19 preventive measures and protocols among healthcare professionals in Ahmadu Bello University Teaching Hospital, Shika-Zaria. A cross-sectional descriptive study was used for the study. A sample size of sixty-three (63) was used for the study. Structured questionnaires were distributed among the respondents. The data were analyzed using a frequency table and a simple percentage. The result of this study indicated that the knowledge level of respondents about COVID-19 preventive measures and protocols was very high with a mean of percentage =76.9, the level of compliance was also very high with a mean of percentage =92.1, and lastly, the barrier to compliance to COVID-19 preventive measures and protocols was the inadequate provision of PPEs. The following recommendations were outlined; the hospital management should be encouraged to make more efforts on the provision of personal protective equipment for healthcare workers to decrease their risk and vulnerability, the hospital management should also be encouraged to make efforts to see that there is regular training and retraining of the healthcare professionals on COVID-19 preventive measures and protocols to sustain their knowledge and compliances.

Keywords: Assessment; Knowledge; Compliance; COVID-19; Protocols.

INTRODUCTION

Coronavirus disease (COVID-19) is an infectious viral disease of the respiratory system believed to be caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) (Lewis, 2020). Presentations of COVID-19 have ranged from asymptomatic/mild symptoms to severe illness and mortality. The most common symptoms are fever, cough, and shortness of breath (Chin et al., 2020). Other symptoms such as malaise and respiratory distress have also been unveiled (Morawska and Milton, 2020). Transmission is believed to occur via respiratory droplets from coughing and sneezing, as with other respiratory pathogens, including influenza and rhinovirus (Rabin., 2020). Viruses released in respiratory secretions can infect other indiviual with mucous membranes. Droplets usually cannot travel more than 6 feet. The virus can also survive on surfaces to varying durations and degrees of infectivity. One study (Spinato *et al.,* 2020) found that SARS-CoV-2 remained detectable for up to 72 hours on some surfaces despite decreasing infectivity over time. Notably, the study reported that no viable SARS-CoV-2 was measured after 4 hours on copper or after 24 hours on cardboard (Spinato*et al.,* 2020).

The disease was first identified in 2019 in Wuhan, the capital of China's Hubei province, and has since spread globally, resulting in the on going 2019–20 coronavirus pandemic. The World Health Organization (WHO) declared the outbreak to be a Public Health Emergency of International Concern on 30 January 2020 and recognized it as a pandemic on 11 March 2020, its first such designation since declaring H1N1 influenza a pandemic in 2009. The illness was recently termed COVID-19 by the WHO, the new acronym derived from "coronavirus disease 2019" The name was chosen to avoid stigmatizing the virus's origins in terms of populations, geography, or animal associations (WHO 2020). On February 11 2020, the Coronavirus Study Group of the International Committee on Taxonomy of Viruses issued a statement announcing an official designation for the novel virus: severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) (Gorbalenya, 2020).

In the United States, 4,715,540 cases of COVID-19 have been confirmed, as at August 3, 202O, resulting in 155,402 deaths (CDC, 2020). On the following ay, the United States declare that it has more confirmed infections than any other country in the world, including China and Italy (Ferguson et al., 2020). Current clusters of increased local transmission can be found throughout Western Europe, the United States, and Iran. The rate of newly reported infections in China has dropped precipitously.

COVID-19–related deaths in China have mostly involved older individuals (60 years) and persons with serious underlying health conditions. In the United States, attributable deaths have been most common in adults aged 85 years or older (10%-27%), followed by adults aged 65-84 years (3%-11%), adults aged 55-64 years (1%-3%), and adults aged 20-54 years (< 1%). As of March 16, 2020, no attributable fatalities have been reported in persons aged 19 years or younger (Li et al., 2020). On February 26, 2020, the first case of COVID-19, not associated with travellers from China or known contact with an infected traveller, was reported in California. Community spread of the virus has now been reported in multiple states (CDC, 2020). The Centers for Disease Control and Prevention (CDC) has stated that more cases of COVID-19 are likely to be confirmed in the United States in the near future. Also, they anticipate a widespread SARS-CoV-2 community spread and that most of the US population will be exposed to the virus in coming months, leading to a CDC recommendation against gatherings of 50 persons or more.

In Nigeria, the first case of COVID-19 was confirmed on 27th February 2020 from a 44 year old Italian who arrived at the Murtala Muhammad International Airport, Lagos at 10 pm on 24th February 2020 aboard a Turkish airline from Milan, Italy. He traveled on to his company site in Ogun state on 25th February. On 26th February, he went to the staff clinic in Ogun for a check up, and there was a high index of suspicion by the managing physician. He was referred to IDH Lagos and COVID-19 was confirmed on the 27th of February 2020, and from then till 17th of September 2020, a total of fifty- six thousand seven hundred and thirty-five (56,735) confirmed cases of COVID-19, 48,092 discharges, and 1093 fatalities have been reported (Nigeria Centre for Disease Control (NCDC), 2020).

Multi-sectoral national emergency operations centre (EOC) activated at level 3, continued to coordinate the national response activities. Patients with confirmed cases of COVID-19 infection are isolated at the various isolation centers in the country and treated according to the standard treatment guidelines provided by World Health Organization and the Nigeria Centre for Disease Control (NCDC) by healthcare providers. The NCDC recommended regular hand washing, use of face mask, maintaining social distancing, use of alcohol hand sanitizer, avoid touching the eye, nose, and mouth with the hands, and covering the mouth while sneezing or coughing. Healthcare professionals spent lots of time with patients in the hospital and with the incidence of this pandemic, the workload tend to increase as patients with COVID-19 require more intense and rapid care. Healthcare professionals are at the front line of the COVID-19 outbreak response and as such are exposed to hazards that put them at very high risk of infection. Hazards include pathogen exposure, long working hours, psychological distress, fatigue, occupational burnou, stigma, and physical and psychological violence.

Several barriers were reported by healthcare professionals regarding the knowledge and compliance to COVID-19 protocols, these include inadequate knowledge of COVID-19, deviations from the recommended PPE donning and doffing protocols despite the WHO recommendations to prevent the transmission of COVID-19 (Birihane et al., 2020). A recent study by Birihane et al., (2020), showed that 90% of observed doffing was incorrect, common errors were doffing gown from the front, removing face shield of the mask, and touching potentially contaminated surfaces and PPE. On COVID-19 compliance, Feyisa, (2021) observed that adherence to the preventive measures of the disease is primarily affected by variables such as knowledge, attitudes, and perception.

Adequate knowledge and strict compliance to measures and protocols set aside by WHO will go a long way in protecting health care workers from contracting the virus and also improve their overall performance, in terms of patient care and work commitment. This justifies the need for the study to assess the level of knowledge and compliance to COVID-19 preventive measures and protocols among healthcare professionals in Ahmadu Bello University Teaching Hospital (ABUTH), Shika, Zaria, Nigeria.

Objectives of the study

1. To determine the level of knowledge of COVID -19 preventive measures and protocols among healthcare professionals in Ahmadu Bello University Teaching Hospital (ABUTH), Shika, Zaria, Nigeria.

2. To assess the compliance level to COVID -19 preventive measures and protocols among healthcare professionals in Ahmadu Bello University Teaching Hospital (ABUTH), Shika, Zaria, Nigeria.

3. To identify the barriers to compliance to COVID -19 preventive measures and protocols among healthcare professionals in Ahmadu Bello University Teaching Hospital (ABUTH), Shika, Zaria- Nigeria.

METHODOLOGY

Design: A quantitative design, using a cross-sectional descriptive approach was employed for the study. It entails the collection of data at a single point in time.

Setting: The setting is Ahmadu Bello University Teaching Hospital (ABUTH), Shika, Zaria- Nigeria. ABUTH, formerly known as the Institute of Health, established in 1968, in accordance with statutes 15 of the university law (amendment act schedule 16) by the former Northern Nigeria government to provide facilities for training of doctors, nurses and other medical personnel. ABUTH Zaria is presently being run by a board, established by decree No. 10 of 1985 and it comprises the chief executive (chief medical director) and the other statutory officers. The hospital offers a wide range of services including medical and surgical services, pharmaceutical services, laboratory services, training, programmes among others. ABUTH also serves as a referral hospital.

Population: All (1,250) the healthcare professionals (Nurses, doctors, pharmacists, and medical laboratory scientists) working in Ahmadu Bello University Teaching Hospital (ABUTH), Shika, Zaria- Nigeria.

Sample Size Determination: A total of 63 respondents were used for the study, representing 5% of the total population.

Sampling Technique: A simple random sampling technique was employed to select the 63 respondents from the total population.

Instrument: a structured questionnaire was used for data collection. The questionnaire comprised of four sections: sections A, B, C and D. Section A focused on the demographic data of the participants, Section B contained questions on knowledge of covid -19, Section C contained questions on level of

compliance and Section D focused on barriers to covid-19 protocol compliance.

Validity of the instruments: A structured questionnaire was designed, and the validity of the instruments was ascertained by presenting to experts who read through to improve, modify and correct the instrument.

Reliability of the instruments: Pre-testing of the questionnaire was also carried out and modifications based on the results were incorporated into the final questionnaire. The test-retest method was used to assess the reliability of the questionnaire. Internal consistency of items showed an intra-class correlation coefficient of 0.86

Data collection: Questionnaires were shared among participants that met the inclusion criteria. Adequate time was given to participants for the successful completion of the questionnaire.

Data analysis: Afterward, the data collected were first checked for errors, cleaned, and analysed using the Statistical Package for Social Sciences (IBM SPSS version 25. The data were presented descriptively using frequency distribution tables and percentages.

Ethical consideration: An approval to conduct the study was given to the Ethics Committee of Ahmadu Bello University and Amadu Bello Teaching Hospital Zaria. Participants' rights to full disclosure and self-determination were explained. The respondents were informed about the purpose and benefits of the study and assured that their participation will not be used against them in any way. Informed consent was obtained from the respondents before administering the questionnaire and they were assured of the confidentiality of the information given.

RESULTS

Table 1showed that most 19 (30%) of the respondents were within the age range of 25-29, only a few 5(7.9%) were within the ages of 40 years and above. Majority of the respondents 32(50.8%) were male and married 40 (63.5%). Majority of the respondents 26(41.3%) were nurses. Doctors represent 13(20.6%,) Pharmacists and Medical Laboratory Scientists represent 10(15.9%) and 14(22.2%) respectively.

Table 1: Sociodemographic data of the respondents

Variables	No. of Respondents	Percentages (%)
Age		
20-24	14	22.2
25-29	19	30.2
30-34	16	25.4
35-39	9	14.3
40 and above	5	7.9
Total	63	100%
Gender		
Male	32	50.8
Female	31	49.2
Total	63	100%
Marital Status		
Married	40	63.5
Single	23	36.5
Divorced	0	0
Total	63	100%
Tribe		
Hausa	17	27.0
Igbo	12	19.0
Yoruba	19	30.2
Others	15	23.8
Total	63	100%
Religion		
Christianity	35	56.6
Islam	28	44.4
Others	0	0
Total	63	100%
Profession		
Nurse	26	41.3
Doctor	13	20.6
Pharmacist	10	15.9
Lab Scientist	14	22.2
Total	63	100%

Table 2 showed that majority of the respondents 59 (93.7%) believed that Covid-19 is a viral disease while 6.3% said that COVID-19 is not. A total of 93.7% knew that fever, cough, shortness of breath, and fatigue were the main clinical symptoms of COVID-19, while 6.3% of the respondents said otherwise. The majority of the respondents 61(96.8%) knew that symptoms of COVID-19 appear within 2-14 days, 82.5% of the respondents affirmed that COVID-19 spreads via respiratory droplets of infected individuals. Majority of the respondents 49(77.8%) agreed that COVID-19 currently had no vaccine. Some of the respondents 19 (19%) had the notion that carriers without symptoms cannot infect others, while majority of the respondents 51(81%) had the idea that carriers without symptoms can infect others.

Majority of the respondents 57(90.5%) affirmed that regular hand washing can prevent the spread of the virus, while the remaining 9.5% said the contrary. All the respondents 63(100%) affirmed that the use of face masks can prevent the inhalation of droplets. The majority of the respondents 59(93.7%) adhered to the use of hand gloves before touching or carrying out a procedure on the patients. Majority of the respondents 58(92.1%) opined that people who have contact with infected individuals should be isolated. This study concluded that the knowledge level of respondents about COVID -19 preventive measures and protocols is very high with a mean of percentage = 76.9.

Table 2: Knowledge Level of respondents about COVID -19

	ITEMS	RESPONSE			
		YES	%	NO	%
1	COVID-19 is a viral disease.	59	93.7	4	6.3
2	The main clinical symptoms of COVID-19 are fever, cough, shortness of breath, and fatigue	59	93.7	4	6.3
3	Symptoms of COVID-19 appear within 2-14 days.	61	96.8	2	3.2
4	The COVID -19 virus spreads via re spiratory droplets of infected individuals through the air during sneezing or coughing by infected patients.	52	82.5	11	17.5
5	Currently, COVID-19 has a vaccine.	14	22.2	49	77.8
6	Persons with COVID -19 cannot infect others i f he/she has no symptoms of CO VID-19.	12	19	51	81
7	Regular handwashing with soap or hand sanitizer can prevent the spread of the infection.	57	90.5	6	9.5
8	The use of facemasks can prevent the inhalation of droplets.	63	100	-	-
9	Hand gloves should be used whenever one wants to touch patients or carry a procedure on patients.,	59	93.7	4	6.3
10	People who have contact with someone infected with the COVID -19 virus should not be isolated.	5	7.9	58	92.1
	TOTAL				

Mean of percentage = 76.9

Table 3 revealed that 92.1% of the respondents were of the opinion that to follow the recommended hand hygiene practices, while 7.9% do not practice the recommended hand hygiene. 92.1% of the respondents use an alcohol-based hand sanitizer or soap and water before touching a patient while only 7.9% said no. While 88.9% of the respondents believed that to use alcohol-based hand sanitizer or soap and water after touching the patient or his/her surroundings. Majority of the respondents 60(95.2%) believed that to use alcohol-based hand rub or soap and water after a clean or aseptic procedure. Also, majority of the respondents 59(93%) believed that to practice general infection control and standard precautions when in contact with patients. On the practice of wearing PPEs, 88.9% of the respondents answered yes, while 11.1% of the respondents said no. This study concluded that the level of compliance was very high with a mean of percentage = 92.1

Table 3: Compliance Level of the respondents to COVID -19 protocols

	ITEMS	RESPONSE			
		YES	%	NO	%
1	Do you follow the recommended hand hygiene practices?	58	92.1	5	7.9
2	Do you use an alcohol -based hand rub o r soap and water before touching a patient?	58	92.1	5	7.9
3	Do you use an alcohol -based hand rub or soap and water cleaning or aseptic procedure?	60	95.2	3	4.8
4	Do you use an alcohol -based hand rub or soap and water after touching the patient or his/her surroundings?	56	88.9	7	11.1
5	Do you follow Infection Prevention Control (IPC) standard precautions when in contact with any patient?	59	93.7	4	6.3
6	Do you use an alcohol-based hand rub or soap and water after the risk of body fluid exposure	59	93.7	4	6.3
	Do you wear personal protective equipment (PPE) when indicated? (PPE includes face masks, gloves, face shields, etc.)	56	88.9	7	11.1
	TOTAL				

Mean of percentage = 92.1

Table 4 above showed that the majority 63(69.9%) is of the view that there is no adequate provision of PPEs, while 38.1% of the respondents believed otherwise. For the availability of hand washing facilities with clean running water and hygiene products, majority 63(69.8%) believed in the availability of hand washing facilities with clean running water, while 30.2% do not. Regarding sufficient supply for the collection of sharps and medical wastes, 50.8% is positive, while 49.2% is ngative. Also, 73% of the respondents said there is no training on infection control practices by the institution, while 27% believed there is training on infection control practices. This study therefore submitted that the barrier to compliance to COVID -19 preventive measures and protocols is inadequate provision of PPEs

Table 4: Barriers to compliance to COVID -19 protocols

Variables	Response			
	YES	Percentages (%)	NO	Percentages (%)
Adequate provision of PPEs.	24	38.1	63	69.9*
Availability of handwashing facilities with clean running water and hygiene products.	44	69.8	19	30.2
Sufficient supply for the collection of sharps and medical wastes.	32	50.8	31	49.2
Training on infection control practic es by the institution.	17	73	27	46
TOTAL				

DISCUSSION OF FINDINGS

This study determines the level of knowledge and compliance to COVID -19 preventive measures and protocols in Ahmadu Bello University Teaching Hospital (ABUTH), Shika, Zaria, Nigeria. The socio-demographic data of the respondents showed that majority of the respondents are within the age range of 25-29 years and the respondents are both male and female. Findings also revealed that majority of the respondents are married, Yoruba by tribe and Christian by religion. The respondent are majorly Christian by religion and professionally are nursing, doctors and lab scientists.

Knowledge of COVID-19 Preventive measures and protocols

This study reveals that the knowledge level of respondents about COVID -19 is very high with a mean of percentage = 76.9. This study supports a study conducted by the Institute of Public Health, College of Medicine and Health Sciences, United Arab Emirates, Abu Dhabi in 2020, where 85.6% of participants are very knowledgeable about COVID-19. This study is also similar to the findings of Beigel et al., (2020), whose participants are knowledge able about COVID-19. This study is supported by McIntosh et al., (2019), whose participants are knowledge able about the causes and prevention of COVID-19.

Compliance of the health workers with COVID-19 preventive measures and protocols

This study shows that the level of compliance is very high with a mean of percentage = 92.1, which is in consistent with Lewis (2020) who showed that respondents' compliance level is high. This study does not corroborate Pan et al (2019) who reveal that the level of hospital staff compliance is low. This study also disagree with Erasmus et al (2010) who observe that there are multiple reports from different countries that has shown that adherence to the use of personal protective equipment reduces the rate of transmission of infection by 40%.

Barriers to Compliance with COVID-19 Preventive measures and protocols

This study indicates that the barriers to compliance to COVID -19 preventive measures and protocols are the inadequate provision of PPEs and a lack of training on infection control practices by the institution. This is in line with studies on the perceived barriers to the practice of preventive measures for the COVID-19 pandemic among health professionals conducted by Mersha et al., (2021) and Birihane et al., 2020) who describe the shortage of PPEs and inadequate training, and trained staffs are the most common barriers that influence the practice of preventive measures. However, regarding the supply of hand-washing facilities, the majority of the respondents with a frequency of 69.8% affirm that there are available handwashing facilities with clean running water in the current study. This is also in contrast with the same study by Mersha et al., (2021) and Birihane et al., 2020) where scarcity of hand cleaning solutions is found to be a barrier to the practice of preventive measures.

CONCLUSION AND RECOMMENDATIONS

The study assesses the level of knowledge and compliance with COVID-19 preventive and protocols among healthcare professionals in Ahmadu Bello University Teaching Hospital, Shika. A cross-sectional descriptive study is used for the study. The data generated are analyzed using statistical measures. Findings reveal that there are high level of knowledge and compliance with COVID-19 preventive measures and protocols among the healthcare professionals, while the institutional supply of PPEs and training on infection control practices is low.

From the findings of this study, most of the health workers have a good level of knowledge and compliance with COVID-19 preventive measures and protocols, however, provision of Personal Protective Equipment (PPE) and training on infection control practices by the hospital is low. Hospital Management should make more efforts on the provision of personal protective equipment for the healthcare professionals to reduce their risk and vulnerability. Also, Hospital Management should also make efforts to see that there are regular training and retraining of healthcare professionals on COVID-19 preventive measures and protocols to sustain their knowledge and compliances.

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