

Knowledge and Utilization of Aseptic Technique towards Covid-19 Infection Prevention among Primary Healthcare Workers in Ibadan North-East Local Government, Oyo

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Abstract: The COVID-19 pandemic has put the healthcare system under immense pressure, with primary healthcare workers being at the forefront of the fight against the disease. Healthcare workers face a high risk of contracting COVID-19 due to their close proximity to infected patients. Therefore, knowledge and utilization of aseptic technique is critical for the prevention of COVID-19 transmission among primary healthcare workers. This research was therefore designed to investigate the knowledge and utilization of aseptic technique towards Covid-19 infection prevention among health workers in Ibadan North-East local government, Oyo State. A descriptive cross-sectional study design was adopted to elicit information from the respondents. A pre-tested semi-structured interviewer-administered questionnaire was used to elicit information from 125 consenting respondents who were randomly selected. Data collected was analyzed using SPSS version 20. Majority primary healthcare workers in Ibadan North-East local government were within the age group 18 and 27 years and more than half of them were females. Most were single, Christians, junior staff and had NCE/Diploma as their highest educational qualification. Furthermore, High prevalence of good knowledge, positive attitude and utilization of aseptic technique towards Covid-19 infection prevention were observed among the respondents. This study revealed that there is no association between knowledge and utilization of aseptic technique towards Covid-19 infection prevention among the respondents, also this study also showed that there is no significant association between attitude and utilization of aseptic technique towards Covid-19 infection prevention among the respondents but there was association between the utilization of aseptic technique towards Covid-19 infection prevention and primary healthcare workers. In conclusion, since there was an association between attitude towards utilization of aseptic techniques in preventing Covid-19 infection but they were significantly utilized aseptic technique towards Covid-19 infection prevention. Therefore, arranging training programs for HCWs might be useful in improving their knowledge of infection control standard precautions and is also expected to facilitate positive attitude and practice.

Keywords: Knowledge, Attitude, Utilization, Aseptic Technique, Healthcare Workers.

INTRODUCTION

Coronavirus Disease 19 (COVID-19) is a communicable disease caused by a novel coronavirus designated SARS-CoV-2 (Severe Acute Respiratory Syndrome Coronavirus 2). Evidence indicates that it has a zoonotic source with a wholesale food market in Wuhan City, China either being the source of the outbreak or contributing to amplifying the outbreak. The outbreak of Covid-19 started in Wuhan, Hubei state of China and was first reported by the World Health Organization (WHO) on the 31st December 2019 and announced as a global pandemic on 30th January 2020 (Gebretsadik, Ahmed, Kebede, Gebremicheal, Belete & Adane, 2021). The novel coronavirus also referred to as severe acute respiratory syndrome coronavirus-2 is a single-strand, positive-sense Ribonucleic Acid (RNA) virus, causes a severe respiratory disease known as Covid-19. The Covid-19 is a highly transmissible virus which has placed unprecedented strain on healthcare services world-wide and surpassed the other recent pandemics caused by SARS and Middle East Respiratory Syndrome (MERS) CoV (Singh, Supehia, Gupta, Narula, Sharma, Devi & Bhute, 2021). This animal coronavirus spill over to humans is the third one to be documented in the past twenty years.

Human-to-human transmission of Covid-19 occurs through close contact with an infected individual via respiratory droplets generated by symptoms such as coughing, talking or singing. Transmission can also occur through direct contact with infected individuals and infected secretions or indirect contact through touching surfaces that have been contaminated by respiratory droplets or secretions from the infected individual. There is also increasing evidence for the airborne spread of Covid-19 with enclosed environments with poor ventilation of particular concern (Moodley, Zungu, Malotle, Voyi, Claassen, Ramodike & Mlangeni, 2020). Available evidences have indicated that the major route of transmission of COVID-19 is droplet and close contact. The predominant ways of exposure are contact with contaminated surfaces, hands, and touching of faces, eye, nose and mouth. The Covid-19 causes disease of mild respiratory illness to severe complications characterized by acute respiratory distress syndrome, septic shock, and other metabolic disorders and death. Most of the older men with medical comorbidities like cancer, diabetes, hypertension, lung, heart, and kidney diseases developed fatal cases and severe illnesses like acute respiratory distress syndrome. The symptoms of Covid-19 include fever, fatigue, cough, sore throat, breathing difficulty, myalgia, nausea, vomiting, and diarrhoea (Gebretsadik et al., 2021).

According to Isiekwe, Umeizudike, Daramola, Akeredolu and Leo-Olagbaye (2021), the common transmission routes of the novel coronavirus include direct transmission (cough, sneeze and droplet inhalation) and contact transmission (contact with oral, nasal and eye mucous membranes). It has been considered as a type of self-limiting infectious disease, and most cases present with mild symptoms and can recover in 1–2 weeks. Symptoms include fever, cough, shortness of breath, myalgia, headache and loss of taste and smell. However, severe cases may lead to pneumonia, kidney failure and even death especially in older patients with comorbidities. Persons infected may be asymptomatic, yet can still transmit the disease. The virus has also been found in the saliva of infected persons (Isiekwe, Umeizudike, Daramola, Akeredolu & Leo-Olagbaye, 2021). The recent 2019 novel coronavirus has caused more than 2,622,571 confirmed cases in more than 185 countries, and over 182,359 deaths globally. Prior to the present pandemic of Covid-19, there have been multiple large-scale epidemics and pandemics of other viral respiratory infections, such as seasonal flu, Spanish flu (H1N1), SARS, MERS and others (Ghai, 2020). The rapid spread of Covid-19 and a large number of fatalities have caused anxiety and exposed the lack of human preparedness for such a medical catastrophe. Experiences, like Ebola in 2014, MERS-CoV in 2012 and SARS-CoV in 2003 have demonstrated patient to patient and patient to Health Care Professional (HCP) transmission in health-care settings; and the critical role of Infection Prevention and Control (IPC) programmes

to deal with such infections. In the current ongoing Covid-19 pandemic, infection rates in HCPs vary between countries, in the United Kingdom, 14% of HCPs tested positive on screening, whereas in the United States, over 9000 cases were reported in health-care workers, of whom 55% had a history of contact only in a health-care setting (Singh et al., 2021). Covid-19 is currently a global health threat and public health emergency of international concern. The infection has outreached almost all over the world where the total confirmed number of cases is over 37 million and over 1 million deaths have been reported globally due to Covid-19 until October 11, 2020. Africa is the last continent to be hit by this pandemic; however, it is expected to be the most vulnerable continent where Covid-19 spreading will have a major impact. The first confirmed case of Covid-19 in Africa continent was reported in Egypt on 14th of February, 2020, and then in Nigeria on 27th of February, in an Italian passenger who flew to Nigeria from Italy on 25th of February, 2020 (Gebretsadik et al., 2021).

IPC continues to be scrutinized as our healthcare facilities face an unforeseen public health crisis. The Covid-19 pandemic has changed the perspective of healthcare organizations regarding infection control to protect patients and staff from the potential exposure within their facilities and has also prompted leaders to consider how they can IPC processes and train their staff to prevent further spread in healthcare facilities and prepare all HCPs for Covid-19 and such pandemics (Singh et al., 2021). IPC at healthcare facilities is critical in limiting transmission of Covid-19 to health workers and patients. WHO has identified a number of strategies to reduce the risk of transmission of Covid-19 in health settings including isolation of suspected cases, the application of standard precautions to all patients, and the implementation of additional precautions for suspected Covid-19 cases. Administrative controls should be implemented, engineering and environmental controls should be utilized to limit transmission in health facilities (Moodley et al., 2020).

Healthcare workers play a critical role in fighting the Covid-19 pandemic and are at greater risk of being infected in the line of duty. For instance, data from recent studies showed that healthcare workers are more likely to be exposed to Covid-19 and are, therefore, at higher risk of being infected than the general community. Hence, the impact of the Covid-19 pandemic on healthcare workers has been enormous. However, prevention remains the best weapon for protecting healthcare workers against the Covid-19 pandemic. Therefore, adherence to IPC protocols is critical at minimizing healthcare workers exposure to the Covid-19. Compliance with IPC protocols is facilitated by training of healthcare workers on IPC, provision of IPC materials and regular audit of IPC practices (Ashinyo, Dubik, Duti, Amegah, Ashinyo, Asare & Kuma-Aboagye, 2021). Generally, IPC strategies in response to highly infectious diseases, such as Covid-19, should include early recognition, physical distancing, source control, taking precautions and appropriate use of PPEs, restriction of movement, environmental cleaning and disinfection as well as support for healthcare workers (Ashinyo et al., 2021).

Covid-19 infection among frontline healthcare workers put patients, healthcare workers and the general community at risk of infection. Minimizing exposure of healthcare workers to the Covid-19 is the best option for protecting frontline healthcare workers from being infected, and this is best done through healthcare worker adherence with IPC protocols as well as inoculating against the virus (Ashinyo et al., 2021). This Covid-19 pandemic underlined how crucial it is to develop a comprehensive system to sustain health of HCWs at health facility. In Covid-19 outbreak period, a total of 42,322 HCWs coming from all over the country joined the medical aid team at Hubei province, to relieve the shortage of health human resource in China. Health care workers are among the most vulnerable group who has the greatest risk of getting infected. There have been reports of medical staff acquiring the disease while taking care and treating infected individuals. The HCWs in primary health facilities are working in a riskier environment because of high possibility of cross-infection between them and patients. Although most of the primary healthcare facilities are closed during these times, however emergencies do come and it is healthcare workers moral duty to treat them thereby establishing a close contact (Gambhir, Dhaliwal, Aggarwal, Anana, Anana & Bhangu, 2020).

Aseptic technique behaviour is crucial in Covid-19 pandemic, and the high compliance to the technique is the cornerstone to protect HCWs and keep patients safe. The inappropriate adherence to the technique may induce terrible cross-infection between HCWs and patients, causing unnecessary morbidity, mortality and healthcare cost (Zhou, Lai, Wan, Zhang & Tan, 2020). A Covid-19 positive case can go symptomless for many days, therefore various guidelines are recommended by Centre for Disease Control and Prevention (CDC) and WHO for healthcare workers so as to prepare for adequate precautions. Still, the exact behaviour of the virus is not fully understood by the scientists, making it even more risky for a HCWs (Gambhir et al., 2020). Similarly, according to Assefa, Melaku, Bayisa and Alemu (2021), so far, no medication therapy is available to manage Covid-19. Preventing spread is therefore extremely important to reduce the overall burden of the disease and to remain safe. Currently, WHO recommends physical distances, appropriate use of all personal protective equipment such as masks, goggles, and Hand Hygiene (HH) practices to reduce its spread (Derek, Elie, Stephanie, Karla, Sally & Holger, 2020). Practicing HH, which includes the use of Alcohol-Based Hand Sanitizer (ABHS) or hand washing with soap and water, is a simple and yet effective way to prevent the spread of Covid-19 in healthcare settings (WHO, 2020; CDC, 2020). Unless hands are visibly soiled, ABHS is recommended by the WHO over hand washing with soap and water in most clinical situations. The ABHS should contain at least 60% ethanol or 70% isopropanol to kill the Covid-19 virus

Michel-Kabamba, Ngatu, Leon-Kabamba, Katumbo-Mukemo, Mukuku, Ngoyi-Mukonkole and Kafusthi-Mukemo (2021) in their reports, attitudes and utilization scores towards aseptic technique covid-19 infection prevention were relatively low. Only 27.7% of HCWs were willing to receive a Covid-19 vaccine when it is available, whereas 55% of HCWs complied with good practices; 49.4% wore masks consistently and, surprisingly, only 54.9% used Personal Protective Equipment (PPE) consistently at work and during contact with patients (Michel-Kabamba et al., 2021). Knowledge level was positively associated with the use of social media as a primary source of Covid-19-related information and the category of residence, with HCWs from towns already affected by the Covid-19 epidemic being more likely to have positive attitudes and comply with good practices (Michel-Kabamba et al., 2021).

Gebretsadik et. al. (2021) reported that the proportion of health workers who had low level of practice towards the prevention and control of Covid-19 pandemic was less than half of the participants and those who had 1–3 family members, among them, had more than five times the likelihood of having low practice level towards the control and prevention of the pandemic in comparison with study participants who had greater than 6 family members. Study participants in the age category between 16 and 65 years were 35 times more likely to have poor practice compared to those study participants who were older than 65 years. In another way, the study participants who had travel history and those who had usual alcohol drinking habit had an inverse statistical association with low level practice towards the prevention and control means of COVID-19 in reference to their counterparts (Gebretsadik et al., 2021).

The Primary Healthcare Centre (PHC) is the basic structural and functional unit of the public health services in developing countries. PHCs were established to provide accessible, affordable and available primary health care to people, in accordance with the Alma Ata Declaration of 1978 by the member nations of the WHO. Knowledge of HCWs at the PHC level about Covid-19 and utilization of its preventive measures have to be optimum for successful implementation of preventive measures. Thus, the aim of this study was to identify the level of knowledge and utilization of aseptic technique towards Covid-19 infection prevention among health workers in Ibadan North-East local government, Oyo State.

Aim of the Study

The aim of this study was to determinants of knowledge and utilization of aseptic technique towards COVID-19 infection prevention among primary healthcare workers in Ibadan North-East local government, Oyo State,

Objectives of the Study

The specific objectives of this study are to:

- 1) Determine the knowledge of primary healthcare workers on the use of aseptic technique towards Covid-19 infection prevention in Ibadan North-East local government, Oyo State.
- 2) Determine the attitude of primary healthcare workers towards aseptic technique in Covid-19 infection prevention in Ibadan North-East local government, Oyo State.
- 3) Investigate the utilization of aseptic technique towards Covid-19 infection prevention among primary healthcare workers in Ibadan North-East local government, Oyo State.

Research Questions

- 1) What is the knowledge of the primary healthcare workers in Ibadan North-East local government, Oyo State on the aseptic technique towards Covid-19 infection?
- 2) What is the attitude of primary healthcare workers towards aseptic technique in Covid-19 infection prevention in Ibadan North-East local government, Oyo State?
- 3) What is the level of utilization of aseptic technique towards Covid-19 infection prevention among primary healthcare workers in Ibadan North-East local government, Oyo State?

Research Hypotheses

H0: There is no significant knowledge of primary healthcare workers on the use of aseptic technique towards Covid-19 infection prevention in Ibadan North-East local government, Oyo State.

H0: There is no significant positive attitude of primary healthcare worker towards aseptic technique in Covid-19 infection prevention in Ibadan North-East local government, Oyo State.

H0: There is no significant utilization of aseptic technique towards Covid-19 infection prevention among primary healthcare workers in Ibadan North-East local government, Oyo State.

MATERIALS AND METHODS

Description of the Study Area

This study was carried out in Ibadan North-East local government area. Ibadan North-East local government, Ibadan is one of the 33 local government areas in Oyo State, Nigeria. Ibadan is also the capital city of Oyo State, one of the 36 states in Nigeria in the South-Western Nigeria. A descriptive cross-sectional research design was adopted for this study. This was adopted because it helped to obtain firsthand information within a population. Therefore, the design was appropriate for this study.

Population of the Study

The population for the study comprised all primary healthcare workers in Ibadan North-East local government. The respondents for this study include doctor, nurses, laboratory scientist, pharmacy technicians, health attendants, and health assistants and all administrative offices working in primary healthcare centers in Ibadan North-East local government totaling one hundred and fifty six (156).

SAMPLING TECHNIQUES

A multi-stage sampling procedure was adopted for the selection of participant.

Method of Data Analysis

Data collected were sorted, coded and subjected to appropriate statistical analysis. Data entry and analysis were done using Statistical Package for Social Science Software (SPSS INC, Chicago IL Version 20). Demographic data of the respondents were analyzed using descriptive statistics

and presented in charts and tables. Inferential statistics such as Chi square was used to test the level of association between selected independents and dependents variables at $p < 0.05$.

RESULTS

4.1. Demographic characteristics of the respondents

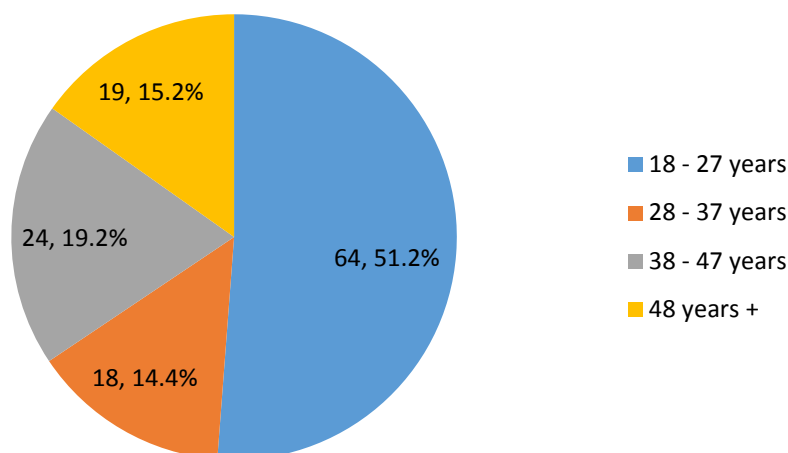


Fig. 4.1: Age Distribution of the Respondents

The data in figure 4.1 above shows the age distribution of the respondents. The majority of the respondents 64 (51.2%) were within the age range 18 - 27 years, follow by 38 to 47 years 24 (19.2%); 48 years and above 19 (15.2%), and age range 28 – 37 years 18 (14.4%).

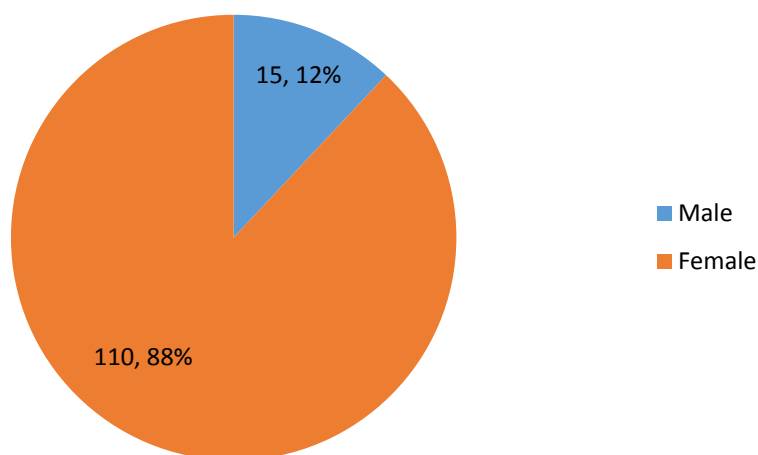


Fig. 4.2: Gender Distribution of the Respondents

The data in the figure 4.2 above shows the gender of the respondents. The largest respondents 110 (88.0%) were female; while the rest 15 (12.0%) were male.

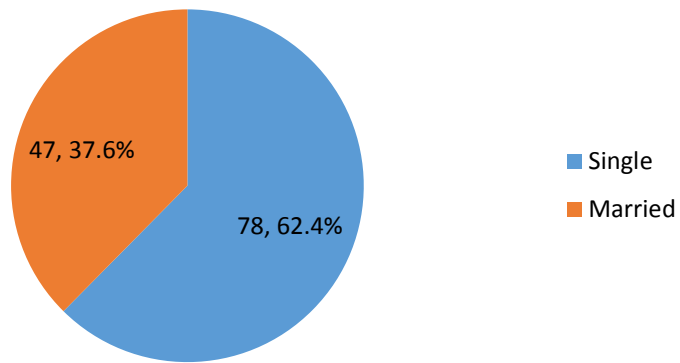


Fig. 4.3: Marital Status of the Respondents

The data in the figure 4.3 below above shows the marital status of the respondents. Majority of the respondents were singles 78(62.4%); while only 47 respondents 37.6% were the married among them.

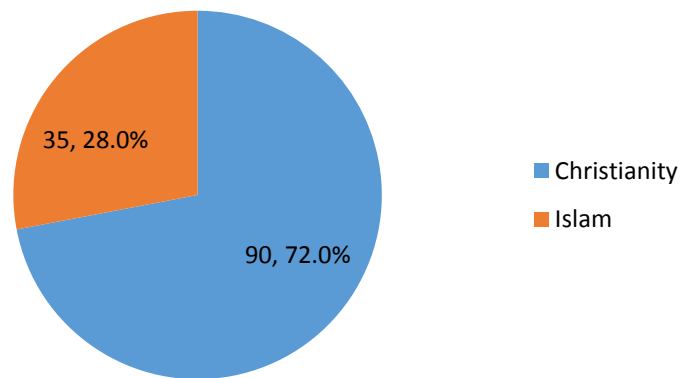


Fig. 4.4: Religion of the Respondents

The data in the figure 4.4 above shows the religion of the respondents. The largest proportion of the respondents 90 (72.0%) were Christians; while 35 respondents 28.0% were Muslims.

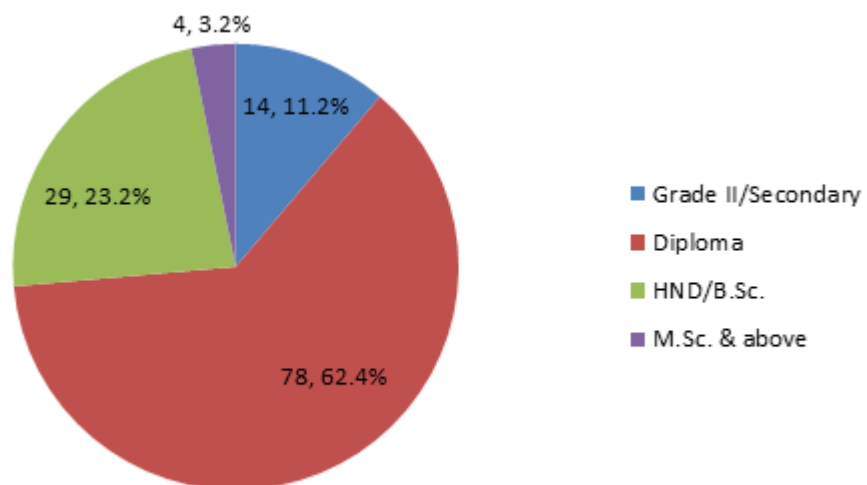


Fig. 4.5: Educational Status of the Respondents

The data in the figure 4.5 shows the educational status of the respondents. Majority of the respondents 78(62.4%) Diploma certificate, followed by HND/B.Sc. 29(23.2%), grade II/secondary certificate 14 (11.2%); and only 4 (3.2%) had M.Sc., and above.

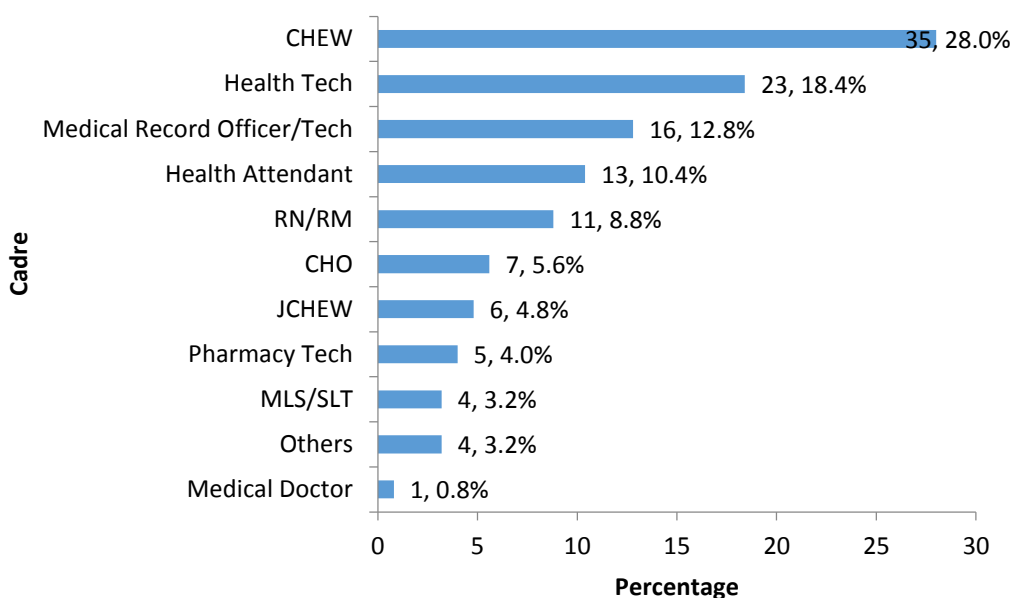


Fig. 4.6: Cadre of the Respondents

The data in figure 4.6 above shows the cadre of the respondents. A higher percentage 35 (28.0%) were CHEW, followed by health technicians 23 (18.4%); medical health records/technicians 16 (12.8%); health attendants 13 (10.4%); RN/RM 11 (8.8%), CHO 7 (5.6%), JCHEW 6 (4.8%), pharmacy tech 5 (4.0%), MLS/SLT 4 (3.2%), others 4 (3.2%) while only 1 (0.8%) of the respondents is doctor.

4.2. Answers to Research Questions

Research Question One: Knowledge of primary healthcare workers on the use of aseptic technique towards Covid-19 infection prevention

Table 4.1: Respondents' responses on knowledge about aseptic technique towards Covid-19 Infection Prevention

S/N	Statements	Responses	Frequency	Percentage
1	Hand hygiene with running water and soap is always preferred over alcohol- based hand rubs	Strongly Disagree	11	8.8
		Disagree	18	14.4
		Agree	44	35.2
		Strongly Agree	52	41.6
2	Boots is required in the routine care of Covid-19 patients	Strongly Disagree	8	6.4
		Disagree	10	8.0
		Agree	59	47.2
		Strongly Agree	48	38.4
3	Overalls is required in the routine care of Covid-19 patients	Disagree	7	5.6
		Agree	48	38.4
		Strongly Agree	70	56.0
4	Aprons is required in the routine care of Covid-19 patients	Strongly Disagree	4	3.2
		Disagree	22	17.6
		Agree	33	26.4
		Strongly Agree	66	52.8
5	N95 respirators should be used for	Strongly Disagree	6	4.8

	procedures in Covid-19 patients that are aerosol generating	Disagree	24	19.2
		Agree	52	41.6
		Strongly Agree	43	34.4
6	Medical masks should be used during the routine care of Covid-19 patients	Strongly Disagree	4	3.2
		Disagree	10	8.0
		Agree	22	17.6
		Strongly Agree	89	71.2
7	Patients with suspected Covid-19 infection should be given N95 respirators to prevent transmission to healthcare	Strongly Disagree	3	2.4
		Disagree	13	10.4
		Agree	54	43.2
		Strongly Agree	55	44.0

Based on the knowledge of the respondents on the use of aseptic technique towards Covid-19 infection prevention, a higher percentage 52 (41.6%) of the respondents strongly agreed that hand hygiene with running water and soap were preferred over alcohol-based hand rubs; while 59(47.2%), 70 (56.0%) and 66 (52.8%) that boots, overall and apron respectively were required in the routine care of Covid-19 patients. Also, 52 (41.6%) agreed that N95 respirators should be used for procedures in Covid-19 patients that are aerosol generating;89 (71.2%) strongly agreed that medical masks should be used during the routine care of Covid-19 patients; while 55 (44.0%) strongly agreed that patients with suspected Covid-19 infection should be given N95 respirators to prevent transmission to healthcare.

Research Objective Two: Attitude of primary healthcare workers towards aseptic technique in Covid-19 infection prevention

Table 4.2: Respondents' responses on attitude towards Covid-19 Infection Prevention

S/N	Statements	Responses	Frequency	Percentage
8	I do wear the required personal protective equipment even if it is uncomfortable.	Strongly Disagree	3	2.4
		Disagree	23	18.4
		Agree	29	23.2
		Strongly Agree	70	56.0
9	I do boycott duty in order to avoid contact with Covid-19 patients instead of using PPE.	Strongly Disagree	29	23.2
		Disagree	53	42.4
		Agree	34	27.2
		Strongly Agree	9	7.2
10	I do make excuses to avoid utilization of PPE while treating Covid-19 patients	Strongly Disagree	44	35.2
		Disagree	43	34.4
		Agree	21	16.8
		Strongly Agree	17	13.6
11	I am not concern myself in using aseptic technique for prevention of Covid-19 infection as i am still relatively young.	Strongly Disagree	3	2.4
		Disagree	26	20.8
		Agree	32	25.6
		Strongly Agree	64	51.2
12	I am adequately prepared to deal with patients with Covid-19 by using aseptic technique	Strongly Disagree	6	4.8
		Disagree	13	10.4
		Agree	45	36.0
		Strongly Agree	61	48.8

Table 4.2 shows the respondents responses on the attitude of primary healthcare workers in Ibadan North-East local Government towards the use of aseptic techniques to prevent Covid-19 infection. The analysis in the table 3 above revealed that 70 (56.0%) of the respondents strongly agreed that they do wear the required personal protective equipment even if it is uncomfortable

for them;53 (42.4%) disagreed that they do boycott duty in order to avoid contact with Covid-19 patients instead of using PPE;44 (35.2%) strongly disagreed that they do make excuses to avoid utilization of PPE; while treating Covid-19 patients at work;64 (51.2%) strongly agreed that they were not bothered in using aseptic technique for prevention of Covid-19 infection because they were still relatively young and while 48.8% strongly agreed that they were adequately prepared to deal with patients with Covid-19 by using aseptic technique.

Research Objective Three: Utilization of aseptic technique towards Covid-19 infection prevention

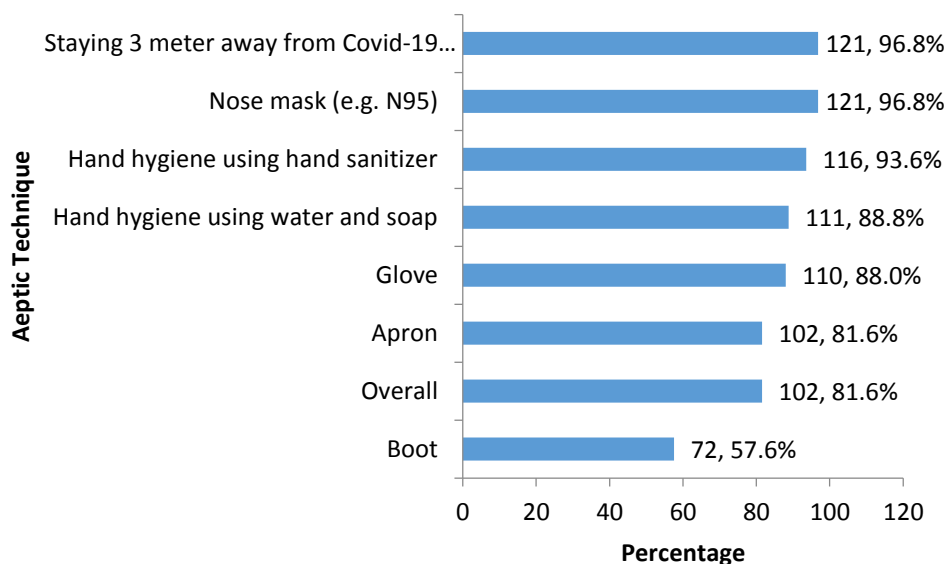


Fig. 4.7: Various aseptic techniques used by primary healthcare workers

The data in figure 4.7 above shows the various aseptic techniques being used by primary healthcare workers. Staying 3 meters away and use of nose mask was mostly used 121 (96.8%) followed by hand hygiene using hand sanitizer 116 (93.6%), hand hygiene using water and soap 111 (88.8%), use of glove 110 (88.0%), use of apron and overall 102 (81.6%); and use of boot 72 (57.6%).

4.3. Testing of Hypotheses

The hypotheses in this study were tested using inferential statistics such as chi-square test. This was done in order to establish relationships and make predictions. The contingency tables below are the chi-square test statistic for the relationships between socio-demographic characteristics, knowledge and attitude among primary healthcare worker on the utilization of aseptic techniques towards prevention of Covid-19 infection in Ibadan North-East local government, Ibadan, Oyo State, and the corresponding degree of freedom (df) as well as p-values.

Hypothesis 1 H0: There is no significant knowledge of primary healthcare workers on the use of aseptic technique towards Covid-19 infection prevention in Ibadan North-East local government, Oyo State.

Table 4.3: Knowledge on the use of Aseptic Technique towards Covid-19 Infection Prevention

S/N	Statements	Responses	Frequency	Percentage
1	Hand hygiene with running water and soap is always preferred over alcohol- based hand rubs	Strongly Disagree	11	8.8
		Disagree	18	14.4
		Agree	44	35.2
		Strongly Agree	52	41.6

2	Boots is required in the routine care of Covid-19 patients	Strongly Disagree	8	6.4
		Disagree	10	8.0
		Agree	59	47.2
		Strongly Agree	48	38.4
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		Agree	48	38.4
		Strongly Agree	70	56.0
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		Disagree	22	17.6
		Agree	33	26.4
		Strongly Agree	66	52.8
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		Agree	22	17.6
		Strongly Agree	89	71.2
7	Patients with suspected Covid-19 infection should be given N95 respirators to prevent transmission to healthcare	Strongly Disagree	3	2.4
		Disagree	13	10.4
		Agree	54	43.2
		Strongly Agree	55	44.0
$\chi^2 = 0.369, df = 18, p = 0.560, \text{Remark } H_0 \text{ accepted}$				

Table 4.3 showed that there is no significant knowledge of primary healthcare workers and the use of aseptic technique towards Covid-19 infection prevention ($\chi^2 = 0.369, df = 18, p > 0.05$).

Decision: Since p-value (0.560) is greater than 0.05 level of significant i.e. $p > 0.05$ we therefore fail to reject the null hypothesis and conclude that there is no significant association between the knowledge of primary healthcare workers and the use of aseptic technique towards Covid-19 infection prevention in Ibadan North-East local government, Oyo State. This means that knowledge has nothing to do with the use of aseptic technique towards Covid-19 infection prevention.

Hypothesis 2:H0: There is no significant positive attitude of primary healthcare worker towards aseptic technique in Covid-19 infection prevention in Ibadan North-East local government, Oyo State.

Table 4.4: Attitude about the use of Aseptic Technique towards Covid-19 Infection Prevention

S/N	Statements	Responses	Frequency	Percentage
8	I do wear the required personal protective equipment even if it is uncomfortable.	Strongly Disagree	3	2.4
		Disagree	23	18.4
		Agree	29	23.2
		Strongly Agree	70	56.0
9	I do boycott duty in order to avoid contact with Covid-19	Strongly Disagree	29	23.2
		Disagree	53	42.4

	patients instead of using PPE.	Agree	34	27.2
		Strongly Agree	9	7.2
10	I do make excuses to avoid utilization of PPE while treating Covid-19 patients	Strongly Disagree	44	35.2
		Disagree	43	34.4
		Agree	21	16.8
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11	I am not concern myself in using aseptic technique for prevention of Covid-19 infection as i am still relatively young.	Strongly Disagree	3	2.4
		Disagree	26	20.8
		Agree	32	25.6
		Strongly Agree	64	51.2
12	I am adequately prepared to deal with patients with Covid-19 by using aseptic technique	Strongly Disagree	6	4.8
		Disagree	13	10.4
		Agree	45	36.0
		Strongly Agree	61	48.8
$\chi^2 = 0.017, df = 12, p = 0.896, \text{Remark} = H_0 \text{ accepted}$				

Table 4.4 above showed that there is no significant positive attitude of primary healthcare worker towards aseptic technique in Covid-19 infection prevention ($\chi^2 = 0.017, df = 12, p > 0.05$).

Decision: Since p (0.896) is greater than 0.05 level of significant i.e. $p > 0.05$. Therefore we fail to reject the null hypothesis and conclude that there is no significant association between the attitude of primary healthcare worker and the used of aseptic technique in Covid-19 infection prevention in Ibadan North-East local government, Oyo State. This means that the attitude of the respondents does not determine utilization of aseptic technique among primary healthcare workers in Ibadan North-East local government, Ibadan.

Hypothesis 3 H0: There is no significant utilization of aseptic technique towards Covid-19 infection prevention among primary healthcare workers in Ibadan North-East local government, Oyo State.

Table 4.5: Utilization of aseptic technique towards Covid-19 infection prevention

Aseptic Techniques	Yes	No	Chi-Square	df	p-value
Nose mask (e.g. N95)	121 (96.8)	4 (3.2)	149.659	7	<0.001
Staying 3 meter away from Covid-19 infected patients	121 (96.8)	4 (3.2)			
Hand hygiene using hand sanitizer	117 (93.6)	8 (6.4)			
Hand hygiene using water and soap	111 (88.8)	14 (11.2)			
Glove	110 (88.0)	15 (12.0)			
Overall	102 (81.6)	23 (18.4)			
Apron	102 (81.6)	23 (18.4)			
Boot	72 (57.6)	28 (42.4)			

This implies that there is significant association between the utilization of aseptic technique towards Covid-19 infection prevention and primary healthcare workers in Ibadan North-East local government, Oyo State.

The table above 4.5 shows that the calculated value is 149.659 with degree of freedom of 7; while p value (0.000) is less than 0.05 level of significant. We therefore reject the null hypothesis

Table 4.6: Association between Socio-demographic Characteristics and use of Aseptic Technique towards Covid-19 Infection Prevention

Socio-Demographic Characteristics	Utilization of Aseptic Techniques		Total	χ^2	df	p-value
	Yes	No				
Age				1.822	3	0.593
18 - 27 years	59 (52.7)	5 (38.5)	64 (51.2)			
28 - 37 years	16 (14.3)	2 (15.4)	18 (14.4)			
38 - 47 years	20 (17.9)	4 (30.8)	24 (19.2)			
48 years +	17 (15.2)	2 (15.4)	19 (15.2)			
Gender				0.255	1	0.614
Male	14 (12.5)	1 (7.7)	15 (12.0)			
Female	98 (87.5)	12 (92.3)	110 (88.0)			
Marital Status				0.452	1	0.553
Single	71 (63.4)	7 (53.8)	78 (62.4)			
Married	41 (36.6)	6 (46.2)	47 (37.6)			
Religion				0.788	1	0.514
Christianity	82 (73.2)	8 (61.5)	90 (72.0)			
Islam	30 (26.8)	5 (38.5)	35 (28.0)			
Educational Qualification				2.699	3	0.384
Secondary/Grade II	14 (12.5)	0 (0.0)	14 (11.2)			
NCE/Diploma	70 (62.5)	8 (61.5)	78 (62.4)			
HDD/B.Sc.	24 (21.4)	5 (38.5)	29 (23.2)			
M.Sc. & above	4 (3.6)	0 (0.0)	4 (3.2)			
Cadre				7.247	7	0.293
RN/RM	11 (9.8)	0 (0.0)	11 (8.8)			
MLS/SLT	4 (3.6)	0 (0.0)	4 (3.2)			
CHO	6 (5.4)	1 (7.7)	7 (5.6)			
Health Attendant	12 (10.7)	1 (7.7)	13 (10.4)			
CHEW	44 (39.3)	3 (23.1)	47 (37.6)			
Medical Record Officer/Tech	14 (12.5)	2 (15.4)	16 (12.8)			
Health Tech	17 (15.2)	6 (46.2)	23 (18.4)			
Others	4 (3.6)	0 (0.0)	4 (3.2)			

The above table 4.6 showed that there is no significant association between the utilization of aseptic technique towards Covid-19 infection prevention among primary healthcare workers in Ibadan North-East local government, Oyo State. The Chi-square test showed that age ($\chi^2 = 1.822$, $p=0.593$), gender ($\chi^2 = 0.255$, $p=0.614$), marital status ($\chi^2 = 0.452$, $p=0.553$), religion ($\chi^2 = 0.788$, $p=0.514$), educational qualification ($\chi^2 = 2.699$, $p=0.384$) and cadre ($\chi^2 = 7.247$, $p=0.293$) were not significantly associated with utilization of aseptic technique towards Covid-19 infection prevention.

Decision: Since the p- value of significance level (0.05) is more than (0.05), we therefore fail to reject the null hypothesis and conclude that there is no significant association between the utilization of aseptic technique towards Covid-19 infection prevention and primary healthcare workers in Ibadan North-East local government, Oyo State.

DISCUSSION OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

DISCUSSION OF FINDINGS

Socio-Demographic Characteristics:

The findings from this study revealed that majority primary healthcare workers in Ibadan North-East local government were within the age group 18 and 27 years and also more than half of them were females. It was also observed that most of them were single, Christians and had NCE/Diploma as their highest educational qualification and majority of them were junior staffs.

Knowledge of Primary Healthcare Workers on the use of Aseptic Technique towards Covid-19 Infection Prevention:

This study showed that majority of primary healthcare workers in the area under study had good knowledge on the use of aseptic technique towards Covid-19 infection prevention and the knowledge has no significant association with utilization of aseptic technique towards Covid-19 infection prevention in the area. This was in line with report of research by Al Mutairi, Alotaibi, Kofi, Alsuraimi, and Bawazir, (2020) titled the level of knowledge, attitude and practice of hand hygiene among the HCWs. Their work showed that there was high prevalence of good knowledge among the healthcare workers. Apart, our finding was against that of Rukhsana, Manzoor and Kousar Parveen (2020) in their quantitative observational descriptive study to assess the healthcare workers' knowledge and practices regarding prevention of covid-19. The findings of the study revealed that the HCWs had poor knowledge regarding prevention Covid-19.

Attitude of Primary Healthcare Worker towards Aseptic Technique in Covid-19 Infection Prevention:

A high prevalence of primary healthcare workers in Ibadan North-East local government had positive attitude towards utilization of aseptic techniques in preventing Covid-19 infection and the positive attitude does not significantly associated with the use of aseptic technique in Covid-19 infection prevention.

Utilization of Aseptic Technique towards Covid-19 Infection Prevention: Majority of the primary healthcare workers in Ibadan North-East local government use aseptic techniques to prevent Covid-19 infection and the mostly used technique is observing social distance, also, nose mask (N95), hand hygiene using hand sanitizer and the one rarely used was boot while attending to Covid-19 infected patients in the area under study. There is significant association between the utilization of aseptic technique towards Covid-19 infection prevention among primary healthcare workers in Ibadan North-East local government, Oyo State. This was supported by Ashinyo et. al,(2021) research work aimed to assess aseptic technique utilization among healthcare workers in Ghana's Covid-19 treatment centres. They observed that aseptic technique utilization during healthcare interactions was very high and the techniques used were hand hygiene and PPE usage and aseptic technique utilization while performing aerosol-generating procedures hand hygiene and PPE as well. It was not supported by the work of Atnafie, Anteneh, Yimenu, and Kifle (2021) in which they used a total of 418 health care workers. It was concluded in the work that there were poor adherence to PPE use and aseptic practices during and after health care interactions with Covid-19 patients.

Conclusion

Based on the findings of the study, the below conclusion were drawn

The study will contribute to the existing literature on the knowledge and utilization of aseptic techniques towards COVID-19 infection prevention among primary healthcare workers. The findings of the study will have practical implications for healthcare workers, healthcare facilities, and policymakers. By improving the utilization of aseptic techniques, we can prevent the transmission of COVID-19 and ensure the safety of both healthcare workers and patients.

Recommendations

Based on the findings of this study, the following recommendations are made:

1. Since we still have some noticeable percentage that do not have good knowledge about aseptic technique use in preventing Covid-19 infection, the primary healthcare workers are encouraged to undergo more training on aseptic technique.
2. Training on having positive attitude towards utilization of aseptic technique should also be done for the healthcare workers and also, primary healthcare workers need to be motivated by providing them with welfare packages and this will boost their morals and attitude towards utilization of aseptic technique use.
3. Primary healthcare workers are encouraged to be wearing safety boot while attending to covid-19 patients and this will prevent them from be infected through their foots
4. More training on utilization of aseptic technique should be intensify.

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