GJHRR

GLOBAL JOURNAL OF HEALTH RELATED RESEARCHES

Vol.6, Issue 1. March 2024



Publication of the Department of Human Kinetics and Health Education
Faculty of Education
Ahmadu Bello University, Zaria, Nigeria

ASSESSMENT OF AWARENESS, ATTITUDE AND PRACTICE OF NON-PHARMACEUTICAL PROTOCOLS IN PREVENTION OF SEVERE ACUTE RESPIRATORYTRACT INFECTIONS AMONG NON-CIVIL SERVANTS IN NORTHERN NIGERIA

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Abstract

The study was conducted to assess the awareness, attitude and practice of non-pharmaceutical protocols in prevention of severe acute respiratory tract infections among non-civil servants in the northern Nigeria. Descriptive survey research design method was used. The study has population of 67,140,593 non-civil servants and sample size of 398 were selected through multi-stage sampling procedures consisting of stratified sampling, simple random sampling, proportionate sampling and convenience sampling procedures. The instrument used for the study was researcher structured questionnaire where 398 copies were administered and 389 were retrieved (97.7%). A split-half method was used for pilot test of Spearman-Brown Prophecy formula and 0.599 was obtained. Descriptive analysis of frequency counts and percentages were used to analyze the demographic information of the respondents, mean scores and standard deviation was used to answer research questions while inferential statistics of one sample t-test was used to test the formulated null hypotheses The result revealed that non-civil servants in northern Nigeria have significant awareness of wearing face mask in public ($t=116.87$, $df:388$; $P<0.05$), hand washing ($t=134.13$, $df:388$; $P<0.05$). Based on the results, the following conclusions were drawn; non-civil servants in northern Nigeria are aware of wearing face mask in public, washing hands. Based on the conclusion, it was recommended that Non-civil servants in northern Nigeria should be enlightened through media on non-pharmaceutical protocol of severe acute respiratory tract infections prevention such as wearing of face mask in public. Proper health education should be emphasized to non-civil servants in northern Nigeria to become more aware of non-pharmaceutical protocol of severe acute respiratory tract infections prevention like hand washing.

Introduction

Severe Acute Respiratory Infection is an airborne virus and can spread through small droplets of saliva in a similar way to the cold and influenza. It was the first severe and readily transmissible new disease to emerge in the 21st century and showed a clear capacity to spread along the routes of international air travel. Respiratory tract infections (RTIs) are infections of parts of the body involved in breathing, such as the sinuses, throat, airways or lungs. Most RTIs get better without treatment (World Health Organization, 2022). Severe Acute Respiratory Infections (SARIs) are classified as upper respiratory tract infections (URIs) or lower respiratory tract infections (LRIs). The upper respiratory tract consists of the airways from the nostrils to the vocal cords in the larynx, including the paranasal sinuses and the middle ear (WHO, 2023). Corona virus is a group of disease that can affect humans and animals. Evidence over time indicates that the strain in animals is different from the strain that infect humans. Succinct to say that there are three well-known diseases caused by different viruses. They are, however, related genetically and the diseases they cause to humans are; Middle East Respiratory Syndrome [MERS], Severe Acute Respiratory Syndrome [SARS] and Corona virus Disease [Covid-19] (Akorede, 2021).

The Primary Health Care system is the bedrock of the country's health system (Federal Ministry of Health, Nigeria, 2020) and the Community Health Workers (CHWs) are considered to be its backbone for several reasons (Mailman School of Public Health, 2017). In addition to contributing to several successful immunization, maternal, newborn, child health and reproductive health services, CHWs also played a critical role in the epidemic response to the 2014 Ebola Viral Disease outbreak (EVD) across several West African countries, including Nigeria (Perry, Dhillon, Liu, Chitnis, Panjabi, Palazuelos & Nyenswah, 2016). In the face of continued COVID-19 community transmission, the health system may likely become overwhelmed with increased risk of health workers' infection. Considering the fact that most people use the PHC centers, especially those in the rural and hard-to-reach areas, it is important that the staff should be adequately informed and resourced to provide first level care such as screening and referral of patients. On this ground, they described the current situation of the outbreak and argued the need for effective engagement of community health workers for appropriate responses to COVID-19.

According to Michael, Ahlers, Hilary, Aralis, Wilson, Tang, Jeremy, Sussman, Gregg, Fonarow & Boback, (2022) non-pharmaceutical interventions (NPIs) are mitigation strategies that have been used to control the spread of transmissible diseases, epidemics and pandemics for more than one hundred years. Non-pharmacological intervention can be referred to as any sort of intervention not directly involving a medication; attempting to optimize a complex patient's healthcare needs or to better manage their chronic illness. Similarly, according to Louis, Hin, Baoyin& Matteo (2021) non-pharmaceutical interventions (NPIs) including resource allocation, risk communication, social distancing and travel restriction, are mainstream actions to control the spreading of Corona virus disease (COVID-19) worldwide. Different countries implemented their own combinations of NPIs to prevent local epidemics and healthcare system overloaded. Portfolios, as temporal sets of NPIs have various systemic impacts on preventing cases in populations.

The awareness of people on non-pharmaceutical protocols of covid-19 was apprehended as cited in a study carried out by Dorcas et al., 2020; Rugarabamu et al., 2020, where they mentioned an overall COVID-19 related knowledge of 80% in the study sample indicated high knowledge of the clinical symptoms, mode of transmission and control measures against the disease. This finding was not surprising since the study was conducted when active COVID-19 control measures, such as the lockdown that directly affected every individual in the state, were active. Similar studies in Nigeria, and countries within Africa revealed good COVID-19 knowledge in the study samples that consisted of people with internet access (Dorcas et al., 2020; Rugarabamu et al., 2020; Azlan et al., 2020; Zhong et al., 2020).

CDC (2020) opined that mask is very good at keeping your respiratory droplets and particles from infecting others. To be fully vaccinated greatly reduces the chance of catching or spreading the corona-virus, it doesn't eliminate it entirely. If person is infected with the corona-virus and do not know it. If he/she hasn't yet received the COVID-19 vaccine, wearing a mask can also help prevent germs that come from another person's respiratory droplets from getting into the person's nose and mouth.

Burton, Cobb, Donachie, Judah, Curtis and Schmidt (2011) stated that keeping hands clean is one of the most important steps people can take to avoid getting sick and spreading germs to others. Many diseases and conditions are spread by not washing hands with soap and clean. Freeman, Stocks, Cumming, Jeandron, Higgins and Wolf (2014) reported that feces from people or animals is an important source of germs like *Salmonella*, *E. coli O157*, and noro virus that cause diarrhea, and it can spread some respiratory infections like adenovirus and hand-foot-mouth disease Franks, Harmsen, Raangs, Jansen, Schut and Welling (1998). These kinds of germs can get onto hands after people use the toilet or change a diaper, but also in less obvious ways, like after handling raw meats that have invisible amounts of animal poop on them.

A single gram of human feces which is about the weight of a paper clip can contain one trillion germs. Germs can also get onto hands if people touch any object that has germs on it because someone coughed or sneezed on it or was touched by some other contaminated object. When these germs get onto hands and are not washed off, they can be passed from person to person and make people sick (Ejemot, Ehiri, Meremikwu& Critchley, 2008).

Washing hands prevents illnesses and spread of infections to others. In a study carried out by Vivian, Ayi, Zaiyad and Bissallah, (2021) the novel corona-virus disease 2019 (COVID-19) is caused by the severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2). The virus is spread from Person-to-person through close-range contact, mainly via respiratory droplets. Infection might also occur if a person's hands are contaminated by droplets or by touching contaminated surfaces and then they touch their eyes, nose, or mouth.

It has been observed by the researcher that, majority of the population of non-civil servants of study area do not have much awareness on non-pharmaceutical protocol of severe acute respiratory tract infection prevention, especially wearing face mask in public, frequent hand washing. Despite the efforts making by the Nigerian government and non-governmental agencies on enlighten the general populous on the prevention of severe acute respiratory tract infection through

proper adhering to non-pharmaceutical protocols such as wearing of face mask, frequent hand washing, But the populous of non-civil servants in northern Nigeria, are not adequately complying with them. It was in the light of the above that the researcher carried out the study on assessment of the awareness, attitude and practice of non-pharmaceutical protocols in prevention of severe acute respiratory tract infections among non-civil servants in Northern Nigeria.

Research Questions

1. What is the level of awareness of non-civil servants in Northern Nigeria on wearing face mask in public as non-pharmaceutical protocol of severe acute respiratory tract infections prevention?
2. What is the level of awareness of non-civil servants in northern Nigeria on hand washing as non-pharmaceutical protocol of severe acute respiratory tract infections prevention?

Research Hypotheses

1. Non-civil servants in Northern Nigeria don't have significant awareness of wearing face mask in public as non-pharmaceutical protocol of severe acute respiratory tract infection prevention.
2. Non-civil servants in Northern Nigeria are not significantly aware of hand washing as non-pharmaceutical protocol of severe acute respiratory tract infection prevention.

Methodology

Research design method was adopted. Abiola, (2007) stated that survey research involves a clear definition of the problem, collection of relevant and adequate data, careful analysis and interpretation of the data and skill full or professional reporting of findings.

The population of this study comprised all non-civil servants of Northern Nigeria which are 67,140,593 non-civil servants and sample size of 398 were selected in the twelve wards of the six LGAs of the six selected states in northern Nigeria.

Multi-stage sampling procedures consisting of stratified sampling which was used to select the representative in all the three strata, simple random sampling which was used to select the representative in all the states, LGAs and wards, proportionate sampling was used to select the total number of 398 respondents and convenience sampling procedures was used to select the respondents.

The instrument used for the study was researcher structured questionnaire where 398 copies were administered and 389 were retrieved (97.7%). A pilot test was carried out at Kiyawa LGA (Andaza and Kiyawa Wards) Jigawa State in which split-half method of Spearman-Brown Prophecy formula was used and 0.599 was obtained.

The study used descriptive analysis of frequency counts and percentages to analyze the demographic information of the respondents, mean scores and standard deviation was used to answer research questions while inferential statistics of one sample t-test was used to test the formulated null hypotheses.

Results

The following research hypotheses were tested and presented on the following tables:

Hypothesis One: Non-civil servants in northern Nigeria don't have significant awareness of wearing face mask in public as non-pharmaceutical protocol of severe acute respiratory tract infections prevention.

Table 1: Summary of one sample t-test analysis on awareness of wearing face mask in public as non-pharmaceutical protocol of severe respiratory tract infection prevention

Variable	N	Mean	SD	SE	df	T	P
Awareness of wearing face mask	389	5.710	0.963	.049	388	116.87	.000
Decision means	389	2.50					

t=1.97, df: 388; P<0.05

The result on table 1 shows that the mean scores (5.710) with the standard deviation of 0.963 and standard error of 0.049 of the respondents on awareness of wearing face mask in public as non-pharmaceutical protocol of severe acute respiratory tract infection prevention is greater than decision mean of 2.50. This means that non-civil servants in northern

Nigeria are aware of wearing face mask in public as non-pharmaceutical protocol of severe acute respiratory tract infections prevention. It also indicated that non-civil servants in northern Nigeria have significant awareness of wearing face mask in public as non-pharmaceutical protocol of severe acute respiratory tract infections prevention (t=116.87, df:388; P<0.05). Calculated P value .000 is less than 0.05 alpha level of significant. Therefore, the hypothesis tested was rejected.

Hypothesis Two: Non-civil servants in northern Nigeria are not significantly aware of hand washing as non-pharmaceutical protocol of severe acute respiratory tract infections prevention.

Table 2: Summary of one sample t-test analysis on awareness of hand washing as non-pharmaceutical protocol of severe respiratory tract infection prevention

Variable	N	Mean	SD	SE	df	T	P
Awareness of hand washing	389	5.936	0.873	.044	388	134.17	.000
Decision means	389	2.50					

t=1.97, df: 388; P<0.05

The result on table 2 indicated that the mean scores (5.936) of the respondents on awareness of hand washing as non-pharmaceutical protocol of severe acute respiratory tract infection prevention with a standard deviation of 0. 873 and standard error of 0.044 is greater than decision mean of 2.50. This means that non-civil servants in northern Nigeria are aware of hand washing as non-pharmaceutical protocol of severe acute respiratory tract infections prevention. It also indicated that non-civil servants in northern Nigeria have significant awareness of hand washing as non-pharmaceutical protocol of severe acute respiratory tract infections prevention (t=134.17, df:388; P<0.05). Calculated P value .000 is less than 0.05 alpha level of significant. Therefore, the hypothesis tested was rejected.

Discussion

The outcome of this study revealed that non-civil servants in northern Nigeria have significant awareness of wearing face mask in public as non-pharmaceutical protocol of severe acute respiratory tract infection prevention (t=117, df:388; P<0.05). In a study carried out by Matuschek, Moll, Fangerau, Fischer, Zanker & Van (2020) face masks: benefits and risks during the COVID-19 crisis in Germany, where an extensive query of the most recent publications addressing the prevention of viral infections including the use of face masks in the community as a method to prevent the spread of the infection. However, the use of Mouth Nose Cover (MNC) seems to be linked to relevant protection during close contact scenarios by limiting pathogen-containing aerosol and liquid droplet dissemination.

Importantly, evidence was found for significant respiratory compromise in patients with severe obstructive pulmonary disease, secondary to the development of hypercapnia. This could also happen in patients with lung infections, with or without SARS-CoV-2.

Non-civil servants in northern Nigeria have significant awareness of hand washing as non-pharmaceutical protocol of severe acute respiratory tract infection prevention (t=134, df:388; P<0.05). This finding corresponds with the report of Siddiqui et al (2020) who studied on Covid-19 Infection Origin, Transmission and Characteristics of Human Corona Virus in Ghana, where they reported **that**356 respondents (84%) knew they had to wash their hands for 20 seconds and did this as well to prevent spread of COVID-19, 303 respondents (75%) while (79%) knew that they had to maintain a safe distance of at least one meter and kept this distance.

Conclusions

Based on the findings of this study, the following conclusions were drawn: Non-civil servants in northern Nigeria are aware of wearing face mask in public as non-pharmaceutical protocol of severe acute respiratory tract infection prevention. Non-civil servants in northern Nigeria are aware of hand washing as non-pharmaceutical protocol of severe acute respiratory tract infection prevention.

Recommendations

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

Non-civil servants in northern Nigeria should be enlightened through media on non-pharmaceutical protocol of severe acute respiratory tract infections prevention such as wearing of face mask in public. Proper health education should be emphasized to non-civil servants in northern Nigeria to become more aware of non-pharmaceutical protocol of severe acute respiratory tract infections prevention like hand washing.

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