

Impact of Health Education on the Adoption of Non-Pharmaceutical Protocols of Corona Virus among Susceptible Population in Katagum Local Government Area, Bauchi State, Nigeria

Kabiru Adamu, Sani Buba PhD, Saidu Isah PhD, Yusuf Aminu PhD, Abdullahi Yunusa Giade and Mohammed Alhaji Mukhtar

Department of Physical and Health Education, Aminu Saleh College of Education Azare, Bauchi State.

Corresponding author: kabiradamu28@gmail.com

Abstract

Covid-19 is a viral infectious disease that can affect human and animals. People with cases of hypertension, diabetes, coronary heart disease are susceptible to Covid-19, however, non-pharmaceutical interventions are very effective preventive measures. The study examined the impact of health education on the adoption of non-pharmaceutical protocols of corona virus among susceptible population in Katagum LGA, Bauchi State, Nigeria. Pre experimental research design of one group pre-test post-test design was used. The Population of the study comprised all susceptible population in Katagum Local Government Area. The sample for this study is 64 that were selected through multi-stage sampling techniques. The instrument used was researcher developed achievement test and validated by experts in the field of health education. A pilot study was carried out and reliability of .9 was ascertained. The instrument was administered by 6 research assistants, two research questions were raised and answered by the study, two hypotheses were postulated and tested using paired sample t-test at 0.05 alpha level. The findings of the study revealed that; people susceptible to Covid-19 in Katagum LGA, Bauchi State differ significantly in the adoption of physical distance and environmental measures in the prevention of Covid-19 before and after health education intervention ($t=75.172$, $df:62$; $P<0.05$; $t=72.475$, $df:62$; $P<0.05$). The study concluded that health education intervention on the adoption of physical distance and environmental measures in the prevention of Covid-19 among susceptible people yielded positive result. Therefore, it was recommended that the general populace especially the susceptible people in Katagum LGA, Bauchi State should be enlightened through health education and public awareness programmes on the adoption of non-pharmaceutical protocol of covid-19.

Keywords: Impact, health education, adoption, non-pharmaceutical protocols, corona virus and susceptible population.

Introduction

Corona virus is a group of disease that can affect human and animals. Evidence over time indicates that the strain in animal is different from the strain that infect human. Succinct to say there are three well-known diseases caused by different strains of human corona virus. These three different strains 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 & Sulaiman, 2021). The World Health Organization (WHO) in December 2019, received reports on clusters of pneumonia cases of unknown causes in Wuhan City, Hubei Province of China. The Chinese authorities subsequently identified a novel strain of Corona-virus (SARS-COV 2) as the causative agent (World Health Organization [WHO], 2019). Then WHO declared the COVID-19 outbreak as a Public Health Emergency of International Concern (PHEIC) and characterized it as a pandemic (WHO, 2020).

The symptoms of COVID-19 appear after 2–14 days following exposure and vary from asymptomatic, mild symptoms to severe respiratory disease (CDC, 2019). The main symptoms are fever, cough and shortness of breath. COVID-19 has a much lower case-fatality rate (about 2.67%) or <5% among the confirmed cases, compared with Severe Acute Respiratory Syndrome (SARS), and MERS (Deng & Peng, 2020), both of which were not reported in Nigeria. Comorbidities among fatal cases include hypertension, diabetes, coronary heart disease, cerebral infarction and chronic bronchitis (Deng & Peng, 2020; Sanyaulu, Okorie, Marinkovic, Patidar & Yonis, 2020). No specific treatment for COVID-19 is currently available. Clinical management includes prompt implementation of recommended Infection Prevention and Control (IPC) measures and supportive management of complications, including advanced organ support were indicated. Prevention of further spread is of high importance and people should practice frequent hand washing, staying home when sick and covering their mouths when coughing and sneezing. Before vaccine was developed, community-based interventions such as school closure, avoiding congregations, adopting social distancing and creating employee plans to work remotely helped slowed the spread of COVID-19, many countries enacted travel restrictions to prevent further spread. From 31st December 2019 to 8th June 2020, 6.96 million cases of COVID-19 have been reported, including 401, 970 deaths in 216 countries worldwide (European Centre for Disease Prevention and Control [ECDC], 2019). In Africa there were 189, 598 cases; the five countries reporting most cases were South Africa (48, 285), Egypt (34, 079), Nigeria (12, 486), Algeria (10, 154) and Ghana (9, 638) (ECDC, 2019). Manli & Haiqing (2020) reported that “health education is an important strategy adopted by many schools in many countries. Health education is a planning, organizational and systematic social education activity that enables individuals to consciously adopt healthy behavior and lifestyles to eliminate or mitigate the risk factors that affect health, prevent diseases, promote health and improve the life quality of social activities”. Health education promotes the health awareness of population, improves their knowledge and directs their attention to infectious diseases prevention, thereby ameliorating their behavior toward them. In 2017, the Health Ministry of China promulgated “the 13 Five-Year Plan for National Health Promotion and Education”, which declared the necessity and urgency of carrying out health education to improve the health knowledge and behavior specifically toward respiratory infectious diseases in counties and schools, including primary, middle and high school students, and consequently improve their physical quality and health while preventing and controlling the spread of infectious diseases. For this endeavor,

policymakers and researchers worldwide must identify the specific effect of implementing health education on people and students (Hina, 2018).

Enahoro, Ariana, Rachel, DeAndrea, Jailya, Jala et al (2021) reported that health education has significant impact on the prevention and control of respiratory infectious diseases of school students. Face-to-face health education on the knowledge of mumps in primary school students have demonstrated that health education was suitable for the needs of primary school students to prevent and control mumps and significantly improved their knowledge level on mumps. Zhang (2013) and Mohammadi, Tavafian, Ghofranipoor & Amin-Shokravi (2012) proved that the health education could improve the knowledge, attitude and behavior toward TB and other infectious diseases among adolescents and school students. Zhang (2013): Glenn & Dinsmore (2018) opined that there could be positive effect of health education intervention on infectious diseases among school students and general populous by comparing their knowledge and behavior before and after health education or between intervention and non-intervention groups. However, the improvement is affected by many factors such as age, gender, educational level and so on. Many studies revealed that non-pharmaceutical interventions (NPI) are the most important strategies to be adopted in preventing the transmission of COVID-19. Due to the fact that the new variants of the disease are emerging, but still the NPI plays a vital role in reducing the transmission rate. This study investigated the impact of Health Education on the adoption of non-pharmaceutical protocols of corona virus among susceptible population in Katagum Local Government Area, Bauchi State, Nigeria.

Statement of the Problem

People of all age, even children are susceptible to covid-19, however, it commonly affects middle-aged and older adults and those with serious underlining medical conditions. The risk of developing dangerous symptoms increases with age, among those who are age 85 and older and among those with serious underlining health condition such as high blood pressure and diabetes mellitus among others. According to European Centre for Disease Prevention and Control (ECDPC, 2020) non-pharmaceutical interventions (NPI) are public health measures that aim to prevent and/or control SARS-CoV-2 transmission in the community which are the most effective public health interventions against COVID-19. The researcher observed that despite the effort making by Nigerian government on enlightening the general populous on the importance of proper utilization of non-pharmaceutical protocols of covid-19 such as physical distancing, most people in Katagum Local Government Area Bauchi State are not adequately complying with them. It is in the light of the above that the researcher investigated the impacts of Health Education on adoption of physical distancing among susceptible population in Katagum Local Government Area Bauchi State, Nigeria.

Research Questions

1. Will people susceptible to Covid-19 differ in the adoption of physical distance in the

prevention of Covid-19 before and after health education intervention in Katagum LGA, Bauchi State?

2. Will people susceptible to Covid-19 differ in the adoption of environmental measures in the prevention of Covid-19 before and after health education intervention in Katagum LGA, Bauchi State?

Research Hypotheses

1. People susceptible to Covid-19 will not significantly differ in the adoption of physical distance in the prevention of Covid-19 before and after health education intervention in Katagum LGA, Bauchi State.
2. People susceptible to Covid-19 will not significantly differ in the adoption of environmental measures in the prevention of Covid-19 before and after health education intervention in Katagum LGA, Bauchi State.

Methodology

Pre experimental research design of one group pre-test post-test design was used for the study. The Population of the Study comprised of all susceptible population that includes the aged (those who are above 65 years of age), people with hypertension and diabetes mellitus in Katagum Local Government Area, Bauchi State, Nigeria, that is fourteen thousand, seven hundred ninety-nine (14,799) which is 5% of whole population of the Katagum Local Government Area, Bauchi State, Nigeria (National Population Commission, 2006). The sample for this study is 64 which was drawn from the susceptible population of 14,799 in selected districts and Wards for the study using Multi-stage sampling consisting of Stratified sampling, Simple random sampling, Proportionate sampling and Convenience sampling techniques. The research instrument was a researcher's structured validated achievement test validated by three experts in the Departments of Physical and Health Education, Aminu Saleh College of Education, Azare, Bauchi State. Reliability of the instrument was ascertained using a split half method which was done at Ningi LGA, Bauchi State, (Ningi and Nasaru Wards). The two scores were correlated using Cronbach Alpha. The reliability coefficient of $r=.9$ was obtained. The data was collected by six trained research assistants. The two postulated null hypotheses were tested using one paired sample t-test at 0.05 alpha level.

Results

The following research questions were answered by the formulated research hypotheses:

Research Question 1: Will people susceptible to Covid-19 differ in the adoption of physical distance in the prevention of Covid-19 before and after health education intervention in Katagum LGA, Bauchi State?

Hypothesis 1: People susceptible to Covid-19 will not significantly differ in the adoption of

physical distance in the prevention of Covid-19 before and after health education intervention in Katagum LGA, Bauchi State.

Table 1: Mean score of responses about adoption of physical distance in the prevention of Covid-19 among susceptible population in Katagum LGA, Bauchi State..

Variable	Test	Mean	N	SD	t	df	P
Adoption of physical distance	Pre-Test	29.4866	64	5.04708	75.172	62	.000
	Post-Test	59.2273	64	5.62541			

The findings from the analysis of hypothesis 1 showed that the pre-test mean scores (29.4866) of the respondents on adoption of physical distance is less than the post-test mean scores (59.2273) of respondents on adoption of physical distance ($t=75.172$, $df:62$; $P<0.05$), therefore, the hypothesis tested was rejected. This means that people susceptible to Covid-19 in Katagum LGA, Bauchi State differ significantly in the adoption of physical distance as prevention of Covid-19 before and after health education intervention.

Research Question 2: Will people susceptible to Covid-19 differ in the adoption of environmental measures in the prevention of Covid-19 before and after health education intervention in Katagum LGA, Bauchi State?

Hypothesis 2: People susceptible to Covid-19 will not significantly differ in the adoption of environmental measures in the prevention of Covid-19 before and after health education intervention in Katagum LGA, Bauchi State.

Table 2: Mean score of responses about adoption of environmental measures in the prevention of Covid-19 among susceptible population in Katagum LGA, Bauchi State.

Variable	Test	Mean	N	SD	t	df	P
Adoption of environmental measures	Pre-Test	29.3824	64	5.05793	72.475	62	.000
	Post-Test	59.0775	64	5.60179			

The findings from the analysis of hypothesis 2 showed that the pre-test mean scores (29.3824) of the respondents on adoption of environmental measures is less than the post-test mean scores (59.0775) of respondents on adoption of environmental measures ($t=72.475$, $df:62$; $P<0.05$), therefore, the hypothesis tested is rejected. This means that people susceptible to Covid-19 in Katagum LGA, Bauchi State differ significantly in the adoption of environmental measures as prevention of Covid-19 before and after health education intervention.

Discussion of Findings

The result of the tested hypothesis one revealed that people susceptible to Covid-19 in Katagum LGA, Bauchi State differ significantly in the adoption of physical distance as prevention of Covid-19 before and after health education intervention. This is in line with Christ (2020) who maintained that the physical distancing is a prevention method to slow the person-to-person transmission of COVID-19 and the best way to prevent illness from COVID-19 is to avoid being exposed to it. It also correlates with the study of Trop (2020) who says early implementation of precision physical distancing, along with other measures could even help minimize the spread of infectious diseases. Importantly, this approach offers the essential component of engaging the community as a central partner in the fight against COVID-19. The result of the tested hypothesis 2 revealed that people susceptible to Covid-19 in Katagum LGA, Bauchi State differ significantly in the adoption of environmental measures as prevention of Covid-19 before and after health education intervention. This is in line with Milad, Zohrah, Neda, Marjan, Bisaranjan, Zakaria et al, (2021) who maintained that environmental cleaning, disinfection and safe management of waste assists in curbing the spread of infectious diseases like Covid-19. Heliyon (2020) also claimed that to clear other effects on the environment, huge amount of disinfectants is applied into roads, commercial and residential areas to exterminate SARS-CoV-2 virus. Such extensive use of disinfectants may kill non-targeted beneficial species, which may create ecological imbalance.

Conclusion

Based on the findings of the study, the following conclusions were drawn:

1. Health education intervention on the adoption of physical distance in the prevention of Covid-19 among susceptible people yielded positive result as the base line adoption differ with that of post intervention.
2. Health education intervention on the adoption of environmental measures in the prevention of Covid-19 among susceptible people yielded positive result as the base line adoption differ with that of post intervention.

Recommendations

Based on conclusions drawn, the following recommendations were made:

1. General populace especially the susceptible in Katagum LGA, Bauchi State should be enlightened through health education and public awareness programmes on the adoption of non-pharmaceutical protocol of corona virus.
2. Government should emphasize on educating and sensitizing the community members through media on the importance of cleaning of their environment therefore, to adhere the adoption of non-pharmaceutical protocol of corona virus.

References

- Akorede, S.N. & Suleman, M.A. (2021). First 50 days of Corona-virus in Nigeria: Lessons for further spread and management of the citizens. *Nigeria Army Magazine*.
- Center for Disease Control and Prevention. (2019). Interim Clinical Guidance for Management of Patients with Confirmed Corona virus Disease [COVID-19].
- Christ, C. (2020). Physical Distancing is an Important Tool to Slow the Spread of COVID-19.
- Deng, S & Peng, H.J. (2020). Characteristics of Public Health Responses to the Corona Virus Disease Outbreak in China. *Journal of clinical medicine* 2020, 9(2), 575-587. <https://doi.org/10.3390/jcm9020575>
- Enohoro, I., Ariana, R., Rachel, R., DeAndrea, I., Jailya, C., Jala, H et-al. (2021). Impact of Public Health Education Program on the Novel Corona virus Outbreak in the United State. <https://www.frontiersin.org/articles/10.3389/fpubh.2021.630974/full>
- European Centre for Disease Prevention and Control, [ECDC]. (2020). Guidelines for the implementation of non-pharmaceutical interventions against COVID-19. <https://www.ecdc.europa.eu/en/publications-data/covid-19-guidelines-non-pharmaceutical-interventions>
- European Centre for Disease Prevention and Control. (2019). COVID-19 situation update worldwide, Epidemiological update. <https://www.ecdc.europa.eu/en/geographical-distribution-2019-ncov-cases>
- Glenn, LL., Dinsmore, K. R. (2018). Effectiveness of health education and promotion for influenza immunization. *Work place Health Safety*. 66(1), 14-24.
- Heliyon, (2020). Environmental effects of COVID-19 pandemic and potential strategies of sustainability. {NCBI}. The National Center for Biotechnology Information advances science and health by providing access to biomedical and genomic information.
- Hina, (2018). NHCO: The 13th five-year plan for national health promotion and education
- Milad, M., Zohreh, N., Neda, R., Marjan, H., Biswaranjan, P., Zakaria, A., Ahmad, M., Rama-Rao, K., Alaa-El Din, M., Mika, S., Mohammad, H.D and Mohammad, M.E. (2021). Management of environmental health to prevent an outbreak of COVID-19.
- Mohammadi, K., Tavafian, S., Ghofranipoor, F., Amin-Shokravi, F. (2012). Health education program and tuberculosis preventive behaviors. *Zahedan. J Res Med Sci*. 14(10), 97-109.
- Manli, W & Haiqing, F. (2020). The effect of health education on knowledge and behavior toward respiratory infectious diseases among students in Gansu, China. A quasi-natural experiment. <https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-020-08813-3>
- Sanyaulu, A., Okorie, C., MarinKovic, A., Patidar, R. & Yonis, K. (2020). Comorbidity and its impact on patients with Covid-19. *CN comprclin med* 2(6), 1069-1076.
- Trop, A.J. (2020). Precision Physical Distancing for COVID-19. An Important Tool in Unlocking the Lockdown. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7356413/>
- World Health Organization. (2019). Corona virus disease (COVID-2019) R&D. <https://www.who.int/blueprint/priority-disease/key-action/novel-coronavirus/en/>
- World Health Organization. (2020). Ramps up preparedness for novel corona virus in the African region. WHO Regional Office for Africa. <https://www.afro.who.int/news/who.ramps-preparedness-novel-coronavirus-african-region>
- Zhang, J. (2013). Meta analysis of tuberculosis health education effect of junior and senior high school students in China. *Chin J School Health*. 34(11), 1367-70.