



Impact of Knowledge Training on Covid-19 Management Among Individuals with Intellectual Disability in Nigeria

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ABSTRACT

This study examined the impact of knowledge training on COVID-19 management among individuals with intellectual disability in Kwara State, Nigeria. The study adopted an exploratory mixed-method research design for 250 students with intellectual disabilities who are enrolled in schools for special needs. A purposive sampling technique was used to select four schools with a sample size of 120 participants. The study found among others that the level of knowledge of individuals with Intellectual Disability on COVID-19 management in Kwara State, Nigeria is low; and the knowledge training on COVID-19 is effective and beneficial to students with intellectual disability leading to a safe and secure management of COVID-19 among students with intellectual disability. Knowledge of COVID-19 training is effective in equipping students with intellectual disability with the relevant knowledge needed for the management of the pandemic. It is imperative that people with disabilities, particularly those who have intellectual disabilities, be made aware of the need to manage COVID-19 properly. This can be accomplished by implementing focused marketing campaigns and educational events that stress the value of learning the fundamentals to reduce the hazards brought on by the epidemic. Again, all levels of government should act proactively to plan and carry out COVID-19 training initiatives designed especially for the disabled.

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1. INTRODUCTION

Infectious diseases have always been a worldwide health issue, and pandemic outbreaks have occurred quickly and unpredictably in recent decades. The first decade of the twenty-first century was highlighted by an outbreak of severe acute respiratory syndrome (SARS), which began in China and spread to the rest of the world ([Vijayanand et al., 2024](#); [Law et al., 2020](#); [Li et al., 2021](#)). Then, around the middle of the millennium, Ebola resurfaced in Guinea after being eradicated or assumed to be under control when it originally appeared in South Sudan and the Democratic Republic of Congo. This is supported by the fact that the world's population has increased dramatically in the previous 20 years, accompanied by a huge increase in environmental deterioration. All of this has increased the number of people living in close quarters without adequate sanitation, creating ideal conditions for communicable diseases to spread.

At the beginning of 2020, the world was suddenly engulfed in a novel Coronavirus Disease Pandemic (abbreviated "COVID-19"). In December 2019, a patient in Wuhan, Hubei Region, China was initially diagnosed with coronavirus disease ([Zhong et al., 2020](#)). The virus was renamed as severe acute respiratory syndrome Coronavirus 2 (SARS-CoV-2) by the International Committee on Virus Taxonomy of Viruses. It is an extremely infectious, single-chain RNA virus that is related to Coronaviruses. COVID-19 has similarities with the Middle East Respiratory Syndrome Coronavirus and the previously identified SARS-CoV. The WHO has responded to the coronavirus disease pandemic with great urgency, and on January 31, 2020, it was recognized as a worldwide public health emergency. The current pandemic is regarded as the greatest pneumonitis outbreak in history, according to [Wang et al. \(2020\)](#). People throughout the world have had their lives changed since the start of this pandemic. It has spread quickly over nations like wildfire, posing severe difficulties and hardships. Concerns are also raised by the alarmingly high incidence of respiratory impairment and unrelenting mortality toll, in addition to the startling and unsettling virus transmission rates. Thousands of people have died, and millions of diseases have been brought about globally.

The SARS-CoV-2 virus afflicted more than 220 nations and territories. Around 229 million individuals have been impacted by the coronavirus pandemic as of September 21, 2021, and over 4.7 million have died as a result. Their report also shows the countries with the highest number of confirmed cases are the United States, India, and Brazil, followed by the United Kingdom, Russia, France, and Turkey. With over 43 million cases and over 690,000 fatalities, the United States has the highest number of cases and deaths ever reported globally.

Reports of the first African case date back to February 14, 2020, from Egypt. COVID-19 was still making its way around the globe at the time, particularly in several African nations. As of September 21, 2021, Africa had more than 8.2 million cases and more than 206,000 fatalities. With over 2.8 million illnesses and over 86,000 deaths, South Africa was the worst-affected nation on the continent, according to government statistics. In Africa, Morocco came in second. With over 700,000 cases and more than 24,000 fatalities, Tunisia ranked third on the continent. Official estimates indicate that over 660,000 cases and over 29,000 deaths have been reported by both Ethiopia and Libya. As of September 21, 2021, these five countries rank among the most affected on the continent, according to government data.

The novel virus's impact on Nigeria has been enormous ever since the index case. An Italian citizen who tested positive for the virus after returning from Italy was revealed on February 27, 2020. The first COVID-19 death was reported by the Nigerian government on March 23, 2020. In this case, the returnee traveler, a 67-year-old man, was receiving chemotherapy for an underlying medical condition. Since the new strain variants were discovered, the nation's

COVID-19 infection rate has been rising. As of August 5, 2021, the Nigerian federal government had recorded 566 new cases and 11 new deaths, for a total of 176,577 confirmed cases and 2,178 confirmed deaths. According to data from the Nigeria Centre for Disease Control, Kwara State did not fall behind; on that same day, the state had 3,235 confirmed cases and 55 deaths. With that number, the state moved up to the 11th most affected state in the nation.

Unexpectedly, the COVID-19 pandemic, a newly discovered virus, brought in 2020 in a manner that had never been witnessed by humans before. Not only were the virus's rates of transmission from person to person alarming and concerning, but the virus was also responsible for an upsurge in respiratory illnesses and fatalities worldwide. Because most people are susceptible to viral infections, strong public participation in terms of complete avoidance and personal protective measures was essential to severing the virus's path of transmission and successfully managing the epidemic.

Our observations showed that people were ignorant of the seriousness of the problem until the pandemic reached their homes. Because of the social stigma attached to the coronavirus, the fear surrounding immunizations, and the general belief that healthcare facilities are hubs for transmission, many infected individuals have escaped treatment. Some others claimed that the coronavirus pandemic was a political ploy and a fraud. Additionally, some believed that Africans are generally immune to the virus because of their genetic makeup, while others held that prayer or faith-based healing is the only way to treat COVID-19 and that it is God's retribution for people being misled. These influenced people's attitudes towards the illness. There is little adherence to the Ministry of Health's recommendations, and many Nigerians are not enthusiastic about adopting social distancing and self-isolation, particularly in busy settings. Due to misconceptions and ignorance of the science underlying the contagious virus, some Nigerians even prefer to only utilize anointing oils, prayer, rituals, or medicines to stop the virus from spreading and infecting others. The attempt to slow the spread of the virus may be hampered by certain citizens' unwelcome impudence and acceptance of false myths and beliefs. The majority of Nigerians are not following government directions correctly, even in extreme emergencies, according to mass media observations (Mundakir *et al.*, 2021).

The impairments of people with intellectual disabilities (ID), may find it more difficult to take preventative measures against the pandemic. Also due to inadequate data and ignorance about the needs of girls with disabilities and school health, nutrition programmers face significant challenges in properly addressing the needs of these disadvantaged girls, who are also more likely to be excluded from education (Dada *et al.*, 2024). ID is a subjective situation characterized by significant limitations in reasoning ability and self-adaptive behaviors, affecting many societal and practical skills in everyday living. Another possible explanation is that people with special needs, including those with ID, may have had negative experiences in the past with receiving responsive, supple support, which has left them wary of effectively following suggested guidance. Mild, moderate, or severe intellectual disability affects a person's ability to learn, communicate, and integrate into society. A person with an intellectual handicap may face difficulties finding, keeping, and executing a job, as well as social exclusion and stigma. People with intellectual disabilities receive essential services like education, social services, health care, and sports in a slightly different way according to these differences.

In addition, individuals with special needs have experienced confusion, anxiety, and fear due to COVID-19 (Nelemans & Kikkert, 2019). When hearing about the COVID-19 epidemic on

the news, people with special needs, especially those who have intellectual disabilities naturally become concerned, and anxiety carries its own set of hazards. Stories and ideas about curative and prophylactic measures might heighten susceptibility to the dangers of complacency, which can worsen the spread of the infection. These dangers are exacerbated by many obstacles faced by families, including relocation and drastic changes in living conditions, a lack of access to or difficulty obtaining public health and safety information, the risk of increased stigma associated with disabilities, potentially bigoted attitudes and actions on the part of health professionals, and disrupted social support systems. Therefore, it is necessary to enable people with intellectual disabilities to successfully adapt to the new way of living in light of the arrival of COVID-19 and the issues it has brought about (Lazarus & Oluwole, 2023).

When it comes to the education and general welfare of people with special needs, including those who have intellectual disabilities, there is an urgent need to address the particular challenges with intellectual functioning, mobility, and learning as well as the attitudes that stand in the way of receiving health care. Consequently, the UN Human Rights Office of the High Commissioner issued a joint public statement with the Chair of the UN Committee on the Rights of Persons with Disabilities during the early stages of the COVID-19 outbreak, suggesting ten-point declarations in support of individuals with special needs. Among these assertions is the necessity of putting policies in place to guarantee the lives and rights of those with disabilities are adequately safeguarded from the COVID-19 pandemic. Additionally, nations were cautioned to ensure that those with disabilities were included and provided with opportunities to engage productively in society. Additionally, nations were cautioned not to discriminate against those with disabilities by refusing them food, money, or other necessities for their well-being or life.

Important Nigerian stakeholders, such as educators and individuals with special needs, voiced their displeasure in May 2020 about the government's inadequate handling of COVID-19 cases in the education system (Lazarus & Oluwole, 2023). On May 25, 2020, The Punch News reported unequivocally that during the COVID-19 lockdown, all schools in Nigeria were shuttered, and the Federal Government of Nigeria had not provided any "special accommodations" for persons with special needs to learn virtually (Lazarus & Oluwole, 2023). This is a clear sign of the incapacity of people in positions of power and the further development of the practice of marginalizing those who are already marginalized. Based on the above line of thought, this study aims to determine the impact of knowledge and attitudinal training on covid 19 management among individuals with intellectual disability in Kwara state. Given the problem faced by individuals with intellectual disability, the need to determine their knowledge and training about Covid 19 is imperative.

The general purpose of this study was to find out the impact of knowledge training on COVID-19 management among individuals with intellectual disability in Kwara State. Specifically, the study examined the knowledge of the COVID-19 pandemic among individuals with Intellectual Disability; determined the significant difference in the knowledge of individuals with Intellectual Disability on the COVID-19 pandemic based on gender; Organized training sessions on knowledge and management of COVID-19 among individuals with intellectual disability and ascertain the effectiveness of the training on COVID-19 management among individuals with Intellectual Disability.

The following research questions were formulated to guide the study: What is the level of knowledge of individuals with Intellectual Disability on COVID-19 management in Kwara State?

The following hypotheses were derived and tested at 0.05 level of significance: HO1: There is no significant difference in the level of knowledge of individuals with Intellectual Disability on the COVID-19 pandemic based on gender.

2. METHODS

The Study covered the impact of knowledge training on COVID-19 management among individuals with intellectual disability in Kwara State, Nigeria. The study made use of all the individuals with intellectual disability drawn from special needs schools in Kwara State, Nigeria. These schools are committed to caring for people with disability including individuals with Intellectual Disability. The study focused on the opinions of individuals with intellectual disability on the level of their knowledge of COVID-19 management. The study equally organized in-education training for individuals with intellectual disability on COVID-19 management. The study adopted an exploratory mixed-method research design. The qualitative aspect is the main while the quantitative is the supplemental aspect (QUAL + quan). QUAL + quan (inductive-simultaneous design, where the core component is qualitative, and the supplemental component is quantitative) design helps to triangulate findings so that they may be mutually corroborated. The population of the study comprises all people with intellectual disabilities who are enrolled in Kwara State special needs schools.

There are 8 special needs schools in Kwara State comprising 250 students with special needs. A purposive sampling technique was used to select four schools with a sample size of 120 participants. The schools include Kwara State School for Special Needs, Ilorin, To'omore School for Special Children, Tanke Ilorin, St. Paul LGEA Special School, Irepodun, Omu-Aran and Iyeru-Okin School for Special Needs, Offa. The rationale behind the choice is that students attending these institutions have previously received a diagnosis of mild to moderate intellectual disability. The instruments for data collection were self-structured questionnaires titled "Knowledge of Individuals with Intellectual Disability on COVID-19 Pandemic Questionnaire (KIIDCPQ)" and "Interview Guide for Knowledge on COVID-19 pandemic."

The interview guide used for the qualitative aspect of the research was titled 'Interview Guide for Knowledge on COVID-19 pandemic'. They were used to elicit information on the knowledge. The interview guide for knowledge on COVID-19 comprises 10 open-ended questions. We observed content validity by constructing all the important items on the study instruments and ensuring that all study objectives were covered in the instruments. The instruments were subjected to test and the Cronbach Alpha technique was used to establish the reliability coefficients of the instruments and the reliability coefficient of 0.84 and 0.91 was calculated for the instruments. The respondents were made to sign an informed consent agreement before participating in the research.

3. RESULTS AND DISCUSSION

The descriptive statistics were used for presenting the results of data analysis, for this study, and these include tables, mean and standard deviation. The presentations are organized according to research questions that guided the study. Out of the 120 students with special needs who began this study, 112 participated to the end of the training. The analysis of the data collected is presented under relevant headings as follows.

3.1. Research Question One: What is the level of knowledge of individuals with Intellectual Disability on COVID-19 management in Kwara State?

Data collected in respect of this research question is presented in **Table 1**. Analysis of data in **Table 1** shows the mean and standard deviation of responses on the level of knowledge of individuals with Intellectual Disability on COVID-19 management. The respondents disagreed with items 1 to 8, 10 to 14, 16, and 19 with mean scores ranging from 1.02 to 2.29 while they agreed with items 9, 15, 17, 18, and 20 with mean scores of 3.01, 3.26, 3.12, 3.07, and 3.08 respectively. All the 20 items constructed have standard deviations ranging from 0.52 to 1.02. This means that the responses of the respondents are not widespread as they are close to their respective mean scores. Table 1 has a ground-calculated average mean and standard deviation of 2.23 and 0.72. This implied that the level of knowledge of individuals with Intellectual Disability on COVID-19 management in Kwara State is low (mean = 2.23, SD = 0.72).

Table 1. Mean and Standard Deviation scores on the knowledge of individuals with intellectual disability on COVID-19 management.

S/N	Items on the Questionnaire	$\bar{x}$	SD	Remarks
Transmission:				
1.	I understand the modes of transmission for COVID-19	1.92	0.52	Disagreed
2.	It is believed that person-to-person contact is a significant factor in the spread of the virus	2.18	0.71	Disagreed
3.	I am aware of the various preventive measures recommended to reduce the transmission of COVID-19	1.51	0.56	Disagreed
4.	Coronaviruses transmit when a person sneezes or coughs, droplets spread in the air or fall on the ground and nearby surfaces	2.06	0.57	Disagreed
Aetiology:				
5.	I am familiar with the origin and causes of COVID-19	1.88	0.71	Disagreed
6.	Zoonotic transmission (an infectious disease that is transmitted between species from animals to humans or from humans to animals) is a plausible explanation for the emergence of the virus	2.12	0.68	Disagreed
7.	I am confident in the accuracy of information regarding the etiology (causes) of COVID-19	1.96	0.58	Disagreed
Symptoms:				
8.	I can identify the common symptoms associated with COVID-19	2.07	0.73	Disagreed
9.	I have experienced any of the typical symptoms of COVID-19 personally or know someone who has	3.01	0.93	Agreed
10.	I believe asymptomatic individuals can contribute to the spread of the virus	1.84	0.72	Disagreed
Treatment:				
11.	I am confident in the effectiveness of current medical treatments for COVID-19	1.02	0.77	Disagreed
12.	I/know one have had COVID-19 medical treatment before and it went well	2.03	0.76	Disagreed
13.	Many alternative or complementary treatments for COVID-19 are effective	2.29	0.79	Disagreed
Prevention:				
14.	I deeply understand the preventive measures recommended by health authorities to avoid COVID-19	2.05	0.67	Disagreed
15.	Vaccination is crucial in preventing the spread of COVID-19	3.26	0.69	Agreed

Table 1 (continue). Mean and Standard Deviation scores on the knowledge of individuals with intellectual disability on COVID-19 management.

S/N	Items on the Questionnaire	$\bar{x}$	SD	Remarks
16.	Isolation/quarantine is a specific preventive measure that is not challenging to follow or understand	2.13	0.80	Disagreed
17.	Isolation during COVID-19 is used for people suffering from COVID-19 symptoms or who have tested positive for the virus	3.12	0.82	Agreed
	Control:			
18.	I am aware of the government's efforts in controlling the spread of COVID-19 in my region	3.07	0.67	Agreed
19.	I believe that stricter control measures, such as lockdowns and travel restrictions, are necessary to manage the pandemic	2.04	1.02	Disagreed
20.	I am highly informed about the policies and strategies implemented to control the impact of COVID-19 on society	3.08	0.76	Agreed
	Grand Weighted Mean and SD	2.23	0.72	Disagreed

3.2. Training experiences on knowledge and Attitude Towards COVID-19

The data collected for research question one was analyzed and the following themes were identified:

- (i) Theme 1: Transmission. The participants' understanding of what COVID-19 is varies significantly. One participant associates COVID-19 with "eyes and soap," which indicates a misunderstanding of the virus's nature. Another participant mentioned that they learned about COVID-19 through the use of face masks, while the third respondent stated that COVID-19 causes death. This variation shows that while some participants have a rudimentary understanding linked to preventive measures, others hold misconceptions or lack detailed knowledge. Awareness of COVID-19 symptoms is present but limited among the participants. A participant identifies sneezing as a symptom, while another respondent includes coughing, catarrh, and sneezing. The third participant adds ear pain to the list of symptoms. This indicates that while common symptoms like coughing and sneezing are recognized, there are inconsistencies and gaps in their knowledge of the full range of symptoms associated with COVID-19.
- (ii) Theme 2: Prevention. The participants demonstrate a basic understanding of preventive measures against COVID-19. A participant mentions using soap to wash hands and wearing a nose cover. Another participant emphasizes the importance of washing and sanitizing hands and staying at home, while the third respondent mentions washing hands and using face masks. This consistency indicates that the concept of hygiene and the use of masks are well understood as crucial preventive measures. Participants have a clear understanding of social distancing as a preventive measure. One of the participants notes that social distancing is necessary to avoid infection, and another respondent mentions it is important to stay away from infected individuals. This shows that the participants grasp the purpose of maintaining physical distance to prevent the spread of the virus. The lockdown's impact on daily routines and activities was strongly felt by the participants. One participant highlights the inability to go to school and the market, while another participant mentions restrictions on movement and the inability to work. This reflects the significant disruptions caused by the lockdown, affecting education, work, and other daily activities.
- (iii) Theme 3: Treatment. Knowledge of vaccination varies among the participants. A participant is aware of vaccines and refers to them as "injection". Another respondent

acknowledges the vaccine's importance in preventing further occurrences of the virus, whereas the third participant states they have not received the vaccine. This indicates a mixed level of awareness and acceptance regarding COVID-19 vaccination. Participants also mention challenges with complying with COVID-19 rules and regulations. One of the participants lists rules such as not following strangers, staying home, and not going out. Another participant describes the difficulties of wearing masks and restricted movement. This highlights the practical challenges and discomfort faced by individuals with intellectual disabilities in adhering to pandemic-related guidelines.

The analysis of the interviews reveals that individuals with intellectual disabilities in Kwara State have a basic level of knowledge about COVID-19 management. They are aware of key symptoms and preventive measures, such as handwashing and wearing masks, and understand the importance of social distancing. However, their understanding of the virus itself and vaccination is inconsistent, with some holding misconceptions. The impact of the lockdown has been significant, disrupting their daily routines and activities.

3.3. Test of Hypotheses

The two null hypotheses of the research study were tested using an Independent Sample t-test. The null hypotheses were tested at a 0.05 level of significance. The summary of the test of hypotheses as follows: H_01 : There is no significant difference in the level of knowledge of individuals with Intellectual Disability on the COVID-19 pandemic based on gender.

The data in **Table 2** reveals that there are 53 male and 59 female individuals with intellectual disability. The responses of the male and female individuals with intellectual disability indicated that their knowledge of the COVID-19 pandemic is low ($\bar{x} = 1.73$; $SD = 0.37$) and ($\bar{x} = 1.93$; $SD = 0.35$). Their responses are close to the mean as the standard deviations are very low. The table revealed that there was no significant difference in the level of knowledge of individuals with intellectual disability on the COVID-19 pandemic based on gender ($t_{110} = 3.098$, $P > 0.05$). Therefore, the null hypothesis that states that there is no significant difference in the level of knowledge of individuals with intellectual disability on the COVID-19 pandemic based on gender was not rejected. This implied that male and female individuals with an intellectual disability did not differ in their responses regarding the level of knowledge of the COVID-19 pandemic.

Table 2. Summary of t-test of the difference in the level of knowledge of individuals with Intellectual Disability during the COVID-19 pandemic based on gender.

Group	N	Mean	SD	t-cal	Df	p-value	Decision
Male	53	1.73	0.37	3.098	110	0.071	H ₀₁ Rejected
Female	59	1.93	0.35				

$P > 0.05$

3.4. Discussion

The study was carried out on the impact of knowledge training on COVID-19 management among individuals with intellectual disability in Kwara State, Nigeria. The study found that the level of knowledge of individuals with Intellectual Disability on COVID-19 management in Kwara State, Nigeria is low. This was indicated in the analysis in Table 1 where the majority of the respondents stated that they do not understand the modes of transmission for COVID-19 and are not familiar with the origin and causes of COVID-19, the same way they cannot identify the common symptoms associated with COVID-19, confident in the effectiveness of

current medical treatments for COVID-19 and they deeply understand the preventive measures recommended by health authorities to avoid COVID-19 as well as aware of the government's efforts in controlling the spread of COVID-19 in their region. Contrary to these findings is an earlier finding of [Thapa et al. \(2023\)](#) who stated that 88.8% of the participants were aware of the pandemic and its preventative measures. This was also confirmed by the qualitative study's findings, which showed that the great majority of people with disabilities were aware of the COVID-19 epidemic.

The finding in **Table 2** which reveals that there was no significant difference in the level of knowledge of individuals with intellectual disability on the COVID-19 pandemic based on gender, is in tandem with [Lazarus and Oluwole \(2023\)](#) finding that male and female students with special need did not differ in their responses regarding their awareness of COVID-19 pandemic.

4. CONCLUSION

The findings of the study indicate that the acquisition of precise information on COVID-19 and the cultivation of favorable assertiveness towards pandemic management by individuals with ID can substantially augment their capacity to remain safe and make a good impact on society during the pandemic. The study therefore concluded that COVID-19 training is effective in equipping students with intellectual disability with the relevant knowledge needed for the management of the pandemic. The study's conclusions indicate that the use of COVID-19 training programs is very successful in providing people with intellectual impairments (ID) with the knowledge they need to handle the epidemic. This is because when the ID students acquire the right knowledge towards the management of COVID-19, it will guarantee that people with disabilities, especially those with intellectual disabilities, and other groups of people with disabilities, are safe and secure from the epidemic. This implies that stakeholders would be able to contribute to creating a more informed, empowered, and resilient community of individuals with intellectual disabilities in Kwara State, Nigeria, ultimately promoting a safer and more secure environment for all during the COVID-19 pandemic and beyond.

Based on the findings, it was recommended that it is imperative that people with disabilities, particularly those who have intellectual disabilities, be made aware of the need to manage COVID-19 properly. This can be accomplished by implementing focused marketing campaigns and educational events that stress the value of learning the fundamentals to reduce the hazards brought on by the epidemic. Again, all levels of government should act proactively to plan and carry out COVID-19 training initiatives designed especially for the disabled. In addition to providing pertinent information about the virus and how to treat it, these programs should seek to inculcate the appropriate attitudes and behaviors that are required to guarantee the safety and well-being of people with disabilities in society. In addition, to measure the impact of COVID-19 training programs on knowledge acquisition with intellectual disabilities, an ongoing evaluation of their efficacy is required. To modify and enhance subsequent training sessions, feedback from caregivers and participants should be actively sought. Also, it is important to incorporate COVID-19 training for people with disabilities into larger public health initiatives and disaster preparation plans. This guarantees that people with intellectual disabilities have the talents and information necessary to effectively manage future health emergencies in addition to being ready to deal with the current epidemic.

5. AUTHORS' NOTE

The authors declare that there is no conflict of interest regarding the publication of this article. The authors confirmed that the paper was free of plagiarism.

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