Knowledge, Attitude And Practice Of Covid-19 Preventive Measures Among Residents Of Oghara, Delta State, Nigeria

Ibobo Mike Enemuwe,[1,2] Evelyn Tarela Ojugbeli,[3] Onyi Theresa Owa-Nwabuzo,[2] Akpo-Oghene Uzuazoraro,[1] Kehinde Serah Offia,[1] Taye Simon Unoroh.[1]

Abstract

Introduction: Since its appearance in 2019, the coronavirus has presented a considerable challenge to public health. Poor knowledge, attitudes and practice of COVID-19 preventive measures have hindered control measures especially in developing countries like Nigeria. This study evaluated the knowledge, attitude, and practice of preventive measures against COVID-19 among residents of Oghara community in Delta state, Nigeria.

Methodology: It was a descriptive cross-sectional survey conducted among 304 permanent residents of Oghara selected through a multi-stage cluster sampling technique. Data was collected using a researcher administered questionnaire and analysis was done using IBM SPSS version 26.0. Both bivariate and multivariate analysis were done with p value set at 0.05.

Results: The mean age of respondents was 30.6 (±11.8) years. Majority of the respondents were female (54%), Christians (92.8%), and had tertiary education (56.6%). Seventy-four-point three percent of respondents had good knowledge, 94.4% had a positive attitude, and 61.5% had good practice of Covid-19 preventive measures. The significant predictors of practice of covid-19 preventive measures were secondary education (AOR= 1.849; 95%CI= 1.01-3.38), health worker (AOR= 0.387; 95%CI= 0.155-0.968), farmer (AOR= 11.87; 95%CI= 1.10-127.80) and positive attitude (AOR= 0.242; 95%CI= 0.069-0.845) towards covid-19 preventive measures.

Conclusion: Most respondents had good knowledge and positive attitude towards Covid-19 preventive measures. However, it did not translate to a commensurate level of good practice of COVID-19 preventive measures. A focused health communication programme is recommended to strengthen community response towards threats of covid-19 by bridging the gap between knowledge, attitude and practice of covid-19 preventive measures.

Keywords: Attitude, Covid-19 preventive measures, Knowledge, Practice, Predictors, Delta State

Nigerian Research J Clin. Sci. 2025; 15(2): 1-15

[1]Department of Community Medicine, Faculty of Clinical Sciences, Delta State University, Abraka, Delta State.
[2]Department of Community Medicine, Delta State University Teaching Hospital, Oghara, Delta State.
[3]Department of Medical Biochemistry, Faculty of Basic Medical Sciences, Delta State University Abraka. Delta State.

Corresponding Author: Dr Ibobo Mike Enemuwe. Department of Community Medicine, Faculty of Clinical Sciences, Delta State University, Abraka, Delta State. Email: mienemuwe@delsu.edu.ng

Introduction

The emergence of the novel coronavirus disease (COVID-19) in December 2019 has posed a significant global challenge, affecting not only public health but also the economic and social well-being of populations worldwide. The causative agent, severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2), is a single-stranded RNA virus that leads to flu-like symptoms and severe respiratory distress. Over the past three years, several variants of the virus have been identified, with the World Health Organization (WHO) recognizing five major variants: Alpha, Beta, Gamma, Delta, and Omicron.[1]

In Nigeria, the first confirmed case of COVID-19 was reported on February 27, 2020, in Lagos State. Following the rapid spread of the virus in major cities such as Lagos, Ibadan, and Abuja, the Nigerian government implemented various phases of lockdown and other preventive measures to curtail the spread of the virus. These measures included the closure of educational institutions, restrictions on gatherings, and the enforcement of facemask usage and physical distancing (NCDC, 2020).[2] Despite these efforts, compliance with preventive measures such as the use of facemasks, physical distancing, and hand hygiene has been inconsistent, particularly in sub-Saharan Africa. This inconsistency is often attributed to ignorance and misinformation, raising concerns about the knowledge, attitudes, perceptions, and practices (KAP) towards COVID-19 in these regions.[3]

Understanding KAP towards COVID-19 is crucial for developing effective public health interventions. Several studies have highlighted the importance of public knowledge and attitudes in influencing the adoption of preventive behaviors. A systematic review and meta-analysis found that low-income countries had lower knowledge and significantly lower attitude and practice scores for COVID-19 prevention compared to high-income countries.[4] Additionally, the positive attitude towards COVID-19 prevention decreased significantly over time, although knowledge and practice levels remained relatively stable.[1]

In the context of Nigeria, studies have shown a disparity between knowledge and practice of COVID-19 preventive measures. While there is generally good knowledge and positive attitudes towards COVID-19, the actual implementation of preventive measures is lacking. This gap can be attributed to several factors, including misinformation, cultural beliefs, and the perceived inconvenience of preventive practices.[3] For instance, a study conducted in Kano revealed that a significant proportion of respondents believed COVID-19 to be a man-made virus or a punishment from God, which negatively impacted their willingness to adhere to preventive measures.[3] This study seeks to provide insights that can inform public health policies and interventions aimed at enhancing preventive practices and reducing the transmission of COVID-19. Furthermore, understanding the local context and challenges in implementing preventive measures is essential for tailoring interventions that are culturally appropriate and effective.

This study therefore sought to assess the knowledge, attitudes, and practice of COVID-19 preventive measures; as well as the predictors of covid-19 preventive measures among residents of Oghara Community in Delta State, Nigeria. Findings from this study will be helpful in improving

community preparedness and response toward covid-19 epidemic. The overarching goal is to provide empirical evidence to enhance community's resilience against COVID-19 and contribute to the broader effort of preventing and controlling future pandemics.

Methodology

Study area

The study was conducted in Oghara, a sub-urban community in the Ethiope West Local Government Area of Delta State, Nigeria. Oghara is the headquarters of Ethiope West local government area, part of the Urhobo speaking people of Delta central senatorial district, and an oil-producing community also known for its agricultural produce like rubber, palm, plantain, bananas, yam, cassava, and fish. With a population exceeding 150,000, Oghara is divided into two major communities: Ogharaeki and Ogharaefe and is home to educational institutions such as Delta State Polytechnic Otefe and Western Delta University Oghara.

Study design and population

This was a community-based cross-sectional analytical study. The study population consisted of permanent adult residents of Oghara who had lived in the community for at least six months and were willing and able to provide informed consent.

Sample size determination and sampling technique

The sample size was determined using the formula for determining sample size for a single proportion[5] as follows:

$$N = Z^2 pq/d^2$$

Assuming the proportion of respondents with adequate knowledge of covid 19 infection is 0.8 which was reported from a previous study in South-south Nigeria,[6] an error margin of 5% and a standard normal deviation of 1.96 at 95% level of confidence, the calculated minimum sample size was approximately 246. Considering a non-response rate of 10% the sample size was increased to 270. However, the sample size for this study was increased to 304 in order to increase the power of the study.

The multistage sampling technique was used to select eligible respondents for the study. In the first stage the community was divided into four natural clusters namely: Oghara-Efe, Oghara-Eki, Otefe-Oghara, and Edjemuon-Yavwe. In the second stage, households were selected by systematically selecting every second house from each of the four clusters by systematic random sampling. In a house with more than one household, a list of all the households were made and one selected by balloting. In the third stage, eligible respondents were selected from each of the selected households until the sample size was completed.

Study instrument and data collection.

Data was collected between January to March 2022 with pre-tested, interviewer-administered structured questionnaires which consist of the following sections: socio-demographic characteristics, knowledge of covid-19 preventive measures, attitude towards preventive measures of covid-19 and practice of covid-19 preventive measures. The questionnaire was validated and pretested in a similar community in Ethiope East local government area of Delta state to ensure the reliability of the instrument. Validity was ensured by experts who reviewed the questions for face and content validity and the test-retest method for reliability

yielded a correlation coefficient of 0.7 indicative of high reliability.

Data Analysis and management

The collected data was screened for completeness, cleaned, entered and analyzed using IBM Statistical Product and Service Solutions (SPSS) version 26. Both descriptive and inferential statistics were done and results presented as frequencies and percentages in tables and cross tabulations. Chi-square test was used to assess the associations between cross-tabulated variables with the level of significance pre-set at a p-value of 0.05. Knowledge, attitude and practice were assessed by scoring, summing and grading responses as good knowledge and practice (≥50% of total scores) and poor knowledge and practice (<50% of total scores) respectively. Attitude was graded as positive attitude (≥50% of total scores) and negative attitude (<50% of total scores) respectively.

Ethical consideration

Ethical clearance (HREC/PAN/2022/017/0584) was obtained from the Health Research Ethics Committee of Delta State University Teaching Hospital (DELSUTH). Informed consent was obtained from participants, and confidentiality was strictly maintained.

Results

Socio-Demographic Characteristics of Respondents

The mean age of respondents in this study was 30.56 ±11.8 years; with most respondents within 20 – 29 years age group (137; 45.1%), followed by 30 – 39 years age group (72; 23.7%). Most respondents were female (163; 54%) and single (179; 58.9%); had tertiary education (172; 56.6), were artisans (103; 33.9%) and of Urhobo ethnic group (161;53%) (Table 1).

Table 1: Socio-demographic characteristics of Respondents

Variable	Categories	Frequency (%) N=304
Age Group (years)	<20	39 (12.8)
	20 – 29	137 (45.1)
	30 – 39	72 (23.7)
	40 – 49	28 (9.2)
	50 – 59	19 (6.3)
	≥ 60	9 (3.0)
Mean (SD)	30.56 (11.81)	
Sex	Male	141 (46)
	Female	163 (54)
Marita Status	Married	119 (39.1)
	Single	179 (58.9)
	Divorced/Separated	2 (7)
	Widow/Widower	4 (1.3)
Religion	Christian	282 (92.8)
	Muslim	12 (3.9)

	Traditional	7 (2.3)
	Others*	2 (0.7)
Educational Status	None	8 (2.6)
	Primary	21 (6.9)
	Secondary	103 (33.9)
	Tertiary	172 (56.6)
Ethnicity	Urhobo	161 (53.0)
	Isoko	27 (8.90
	Itsekiri	21 (6.9)
	Ika	4 (1.3)
	Ijaw	13 (4.3)
	Ukwuani	21 (6.9)
	Delta Ibo	25 (8.2)
	Others**	32 (10.5)
Occupation	Trader	76 (25.0)
	Teacher	23 (7.6)
	Farmer	10 (3.3)
	Fishing	2 (0.7)
	Public servant	36 (11.8)
	Health worker	54 (17.8)
	Others*** (Artisans)	103 (33.9)

Others include Atheist; Others** include Yoruba, Hausa , Igbo etc; Others include artisans like tailors, barbers, hairdressers, electricians etc*

Knowledge of Covid -19 preventive Measures

Of the 304 respondents studied, most of them had knowledge of facemask (266; 87.5%) and handwashing (226; 74.3%). However, fewer respondents had knowledge of cough etiquette (127; 41.8%). Overall, most respondents had good knowledge (226; 74.3%) of Covid-19 preventive measures, while a few had poor knowledge (78 25.7%) of covid-19 preventive measures (table 2).

Table 2: Knowledge of Covid-19 Preventive Measures

Variables	Frequency (%)
*Knowledge of Preventive measures (n=304)	
	Yes / No
Facemask	266 (87.5) / 38 (12.5)
Cough etiquette	127 (41.8) / 177 (58.2)
Handwashing	226 (74.3) / 78 (25.7)
Overall knowledge of Preventive Measures (n=304)	
Good knowledge	226 (74.3)
Poor Knowledge	78 (25.7)

*Multiple response

Attitude towards Covid-19 preventive measures

Regarding attitude toward covid-19 preventive measures, most respondents sometimes (139; 45.7%) use face masks when outside, and 71 respondents rarely (23.4%) and always (23.4%) use face masks respectively, while few respondents never (23; 7.6%) use face masks when outside. Similarly, most respondents sometimes (145; 47.7%) wear their face masks to cover their mouth and nose, while fewer respondents always (88; 28.9%) and never (21; 6.1%) wear their face mask to cover their mouth and nose respectively. Most respondents sometimes (139; 45.7%) remove their face mask to talk, sneeze or cough, while fewer respondents always (72; 23.7%), rarely (48; 15.8%) and never (45; 14.8%) remove their face mask to talk, sneeze or cough respectively. Furthermore, most respondents sometimes protect their hands by washing or using hand sanitizers (147; 48.4%), visited crowded places (108; 35.5%) and maintained physical distancing (113; 37.2%) during lockdowns; and never cough without covering their mouth (97; 31.9%).Overall, 287 (94.4%) respondents had a positive attitude towards covid-19 preventive measures, while 17 (5.6%) had a negative attitude (table 3).

Table 3: Attitude towards Covid-19 Preventive Measures amongst respondents

	Frequency (%)			
Variables (n= 304)	Never	Rarely	Sometime	Always
How often do you use your facemask to and when outside?	23 (7.6)	71 (23.4)	139 (45.7)	71 (23.4)
How often do you wear your facemask to cover your mouth and nose?	21 (6.9)	50 (16.4)	145 (47.7)	88 (28.9)
How often do you remove your facemasks to talk, sneeze or cough?	45 (14.8)	48 (15.8)	139 (45.7)	72 (23.7)
How often do you protect your hands by washing or using sanitizers?	19 (6.3)	30 (9.9)	147 (48.4)	108 (35.5)
Do you cough without covering your mouth?	97 (31.9)	72 (23.7)	81 (26.6)	54 (17.8)
During the lockdown, how often did you visit crowded places?	79 (26.0)	95 (31.3)	108 (35.5)	22 (7.2)
Did you maintain physical distancing in public places during the lockdown?	38 (12.5)	52 (17.1)	113 (37.2)	101 (33.2)
Grading of Attitude towards Covid-19 Preventive Measures				
	Frequency (%)			
Positive Attitude	287 (94.4)			
Negative Attitude	17 (5.6)			

Practice of covid-19 preventive measures

Majority of respondents practiced regular hand washing (219; 72%) and cough etiquette (226; 74.3%); while fewer respondents practiced regular use of hand sanitizer (175; 57.5%) and regular use of facemask (123; 40.5%). Overall, most respondents had good practice (187; 61,5%) of covid-19 preventive measures while a minority (117; 38.5%) had poor practice (table 4).

Table 4: Practice of Covid-19 Preventive Measures

Variables	YES Frequency (%)	NO Frequency (%)
*Practice of specific Covid-19 preventive measures (n-304)		
Regular use of facemask	123 (40.5)	181 (59.5)
Regular hand washing	219 (72)	85 (28)
Regular use of hand sanitizer	175 (57.5)	129 (42.4)
Practice of cough etiquette	226 (74.3)	78 (25.7)
Grading of practice (n-304)		
Good Practice	187	61.5
Poor Practice	117	38.5

*Multiple response

Reasons for Non-compliance with specific covid-19 preventive measures

The commonest reason given by respondents for not using face masks was suffocation from face masks (98; 54.1%), expensive to get (37; 20.4%) and not necessary to use face masks (55; 30.4%). The commonest reason for non-compliance with handwashing was the feeling that it was not necessary (30; 35.5%), it is stressful (26; 30.6%) and it disturbs the flow of work (25; 29.4%). Regarding hand sanitizer, the commonest reason for non-usage was that it was not necessary (78; 60.5), it is expensive (44; 34.1%) and allergies (7; 5,4%). Furthermore, the commonest reason for non-compliance with cough etiquette was forgetfulness (49; 62.8%), not being aware (19; 24.4%) and the feeling that it is not necessary (12; 15.4%) (table 5)

Table 5: Reasons for Non-Compliance with specific Covid-19 Preventive Measures

Variables	Reasons	Frequency (%)
*Face mask(n=181)	Expensive	37 (20.4)
	Suffocation	98 (54.1)
	Not necessary	55 (30.4)
	Others (eg ear pain)	4 (2.2)
*Hand washing(n=85)	Unavailability of soap and water	22 (25.9)
	It is stressful	26 (30.6)
	It disturbs the flow of work	25 (29.4)
	I don't feel it's necessary	30 (35.3)
	Others	6 (7.1)
*Hand sanitizer(n=129)	It is expensive	44 (34.1)
	Allergies	7 (5.4)
	Not necessary	78 (60.5)
	Others (eg forgets)	10 (7.8)
*Cough etiquette(n=78)	I do not know	19 (24.4)
	I don't feel it's necessary	12 (15.4)
	I usually forget	49 (62.8)

*Multiple response

Predictors of covid-19 preventive measures.

This study revealed that age (p= 0.044), education (p< 0.001), occupation (p=0.001), knowledge of preventive measures(p=0.031) and attitude towards preventive measures(p=0.001) were significantly associated with practice of covid-19 preventive measures. However, on logistic regression having secondary education (AOR= 1.849; 95%CI= 1.01-3.38), being a health worker (AOR= 0.387; 95%CI= 0.155-0.968), farmer (AOR= 11.87; 95%CI= 1.10-127.80), and having a positive attitude (AOR= 0.242; 95%CI= 0.069-0.845) towards covid-19 preventive measures were the only significant predictors of practice of covid-19. The study demonstrated that most respondents aged 30-39years (66.7%) and 20-29years (66.4%) were significantly associated with good practice of covid -19 preventive measures when compared to other age groups. Similarly, respondents with tertiary education (72.1%) were significantly associated with good practice of preventive measures when compared to those with primary (38.1%) secondary (49.5%) and no formal education (50.0%)

respectively. Furthermore, health care workers (83.3%) and teachers (65.2%) were significantly associated with good practice of covid-19 preventive measures when compared to other occupations. Similarly, respondents with good knowledge (65.0%) and positive attitude (63.8%) toward covid-19 preventive measures were significantly associated with good practice of the preventive measures against covid-19 (table 6).

Table 6: Predictors of Covid-19 Preventive Measures.

Variables	Covid practice -19 preventive measure Freq (%) Good practice	Poor practice	Bivariate analysis X^2 (df)	P value	Logistic analysis AOR	95%CI Lower	Upper
Age Group			11.409 (5)	0.044			
≤ 19yrs	19 (48.7)	20 (51.3)			0.236	0.035	1.598
20-29yrs	91 (66.4)	46 (33.6)			0.177	0.029	1.063
30-39yrs	48 (66.7)	24 (33.3)			0.175	0.028	1.107
40-49yrs	17 (60.7)	11 (39.3)			0.201	0.028	1.420
50-59yrs	10 (52.6)	9 (47.4)			0.167	0.021	1.335
60yrs and above	2 (22.2)	7 (77.8)					
Sex			0.584 (1)	0.445			
Male	83 (58.9)	58 (41.1)					
Female	104 (63.8)	59 (36.2)					
Religion			4.958 (3)	0.175			
Christian	176 (62.4)	106 (37.6)					
Muslim	5 (41.7)	7 (58.3)					
Traditional	3 (42.9)	4 (57.1)					
Others^{+}	2 (100.0)	0 (0.0)					
Marital Status			1.048 (3)	0.790			
Married	70 (58.8)	49 (41.2)					
Single	114(63.7)	65(36.3)					
Divorced/Separated	1 (50.0)	1 (50.0)					
Widow/Widower	2 (50.0)	2 (50.0)					
Highest Level of Education			19.708 (3)	< 0.001			
None	4 (50.0)	4 (50.0)			0.678	0.080	5.753
Primary	8 (38.1)	13 (61.9)			2.913	0.978	8.679
Secondary*	51(49.5)	52 (50.5)			1.849	1.010	3.384
Tertiary	124 (72.1)	48 (27.9)					
Occupation			23.351 (6)	0.001			
Trader	44 (57.9)	32 (42.1)			0.909	0.462	1.789
Teacher	15 (65.2)	8 (34.8)			1.027	0.373	2.831

Farmer*	1 (10.0)	9 (90.0)			11.871	1.103	127.800
Fishing	1 (50.0)	1 (50.0)			0.295	0.010	9.074
Public Servant	21 (58.3)	15 (41.7)			1.354	0.563	3.259
Health Worker*	45 (83.3)	9 (16.7)			0.387	0.155	0.968
Others++	60 (58.3)	43 (41.7)					
Knowledge			4.639 (1)	0.031			
Good knowledge	147 (65.0)	79 (35.0)			0.794	0.435	1.450
Poor knowledge	40 (51.3)	38 (48.7)					
Attitude			10.974 (1)	0.001			
Positive attitude*	183 (63.8)	104 (36.2)			0.242	0.069	0.845
Negative attitude	4 (23.5)	13 (76.5)					

**Significant predictors; +Others include Atheist; ++Others include artisans like tailors, barbers, hairdressers, electricians, and typists etc.*

Discussion

The respondents demonstrated varying levels of knowledge regarding specific COVID-19 preventive measures. Most respondents were aware of the use of face masks (87.5%) and handwashing (74.3%) as effective preventive measures against COVID-19. This observation was expected since the outbreak of the pandemic popularized hand washing and the use of face masks (particularly those made of fabrics) with the public. Most public places like schools, churches and banks were provided with handwashing facilities and the use of face masks was also enforced. However, contrary to general expectation, the knowledge of cough etiquette was less prevalent among the participants as evidenced by more than half of the respondents demonstrating a lack of knowledge regarding cough etiquette as an effective preventive measure against covid-19. Nonetheless, this observation is similar to a previous study in Nigeria where slightly more than half of the respondents were aware of elbow coughing or sneezing; and the knowledge of cough etiquette was less prevalent compared to use of face masks and handwashing.[7] Furthermore, a significant majority of respondents had overall good knowledge (74.3%) of covid - 19 preventive measures. The high level of knowledge observed in this study reflects effective public health communication efforts and community awareness campaigns. This finding corroborates a previous study in Kano, northern Nigeria where more than two-thirds of respondents had overall good knowledge of covid-19 preventive measures.[7] It is also in agreement with the findings of a study conducted in Calabar south-south Nigeria were most of the respondents had good and satisfactory knowledge of covid-19 prevention.[8] Similar studies in Nigeria have reported varying levels of knowledge, often influenced by access to information and educational interventions.[9,10] The implication of these findings is that there is a significant gap in awareness of cough etiquette despite high level of knowledge regarding covid-19 preventive measures. Thus highlights the need to improve health

education and risk communication to increase awareness about the importance of cough etiquette in prevention and control of respiratory infections like covid-19. Continued efforts are crucial to sustaining and enhancing awareness of preventive measures as part of preparedness against future pandemics.

The overwhelmingly positive attitude (94.4%) towards Covid-19 preventive measures observed in this study corroborates a previous study in north-central Nigeria where most respondents (79.5%) had positive attitudes toward infection prevention and control measures.[11] Positive attitudes have been associated with increased compliance with preventive measures and support for vaccination campaigns.[12,13] This observation underscores the importance of community engagement and trust in public health interventions tailored towards improving attitude. Addressing misconceptions and enhancing public trust through transparent communication are essential strategies for sustaining positive attitudes.

Regarding the practice of covid-19 preventives measures, it was observed that most respondents practiced regular hand washing as well as use of hand sanitizers. This observation agrees with previous studies.[7,14,15,16] The observation that less than half of the respondents use facemask regularly is also in consonance with a previous study in Enugu southeast Nigeria where it was reported that less than half of respondents owned and used a facemask.[17] It is also comparable to an online study done among educated Nigerians where it was reported that less than half of respondents wear face mask when leaving home.[16] This study however revealed that most respondents (61.5%) had overall good practice of covid-19 preventive measures. This finding is in keeping with a previous study in Mumbai, India, where 63.8% of respondents had good practice towards covid-19.[18] This observation is however, in contrast with a previous study in Kano where most respondents (85.7%) had poor practice of preventive measures.[7] This observable difference might be due to differences in socio-cultural background, study methodology and time of the study. Despite the good knowledge and positive attitudes towards Covid-19 preventive measures observed in this study, a significant proportion of respondents demonstrated poor practice (38.5%) of Covid-19 preventive measures. Thus corroborating a previous study in India that reported an overall knowledge, attitude and practice score was 83.7%, 77.33% and 63.8% respectively.[18] Similar studies in Nigeria have revealed poor practice of key covid-19 preventive measures.[15] This gap between knowledge, attitude, and practice is a common challenge that has been observed worldwide.[18,19,20] Possible factors contributing to this discrepancy may include socioeconomic disparities, cultural beliefs, and access to resources such as personal preventive equipment (PPE) and sanitation facilities that inhibit actual practices of desired behaviour despite adequate knowledge and attitude.

This study revealed that age, educational level, occupation, knowledge of preventive measures and attitude towards preventive measures were significantly associated with practice of covid-19 preventive measures. However, only secondary education, health worker, farmer, and positive attitude towards covid-19 preventive measures were the significant predictors of practice of covid-19.This finding is similar to a previous study that reported the level of education and overall

knowledge as predictors of practice of covid-19 preventive measures.[7] The observation that younger adults had better practice of preventive measures than older adults also agrees with a previous study that reported age as a significant predictor of practice of covid 19 preventive measures.[15] This finding suggests that targeted interventions tailored to different age groups may enhance overall compliance with preventive measures. This study also revealed that respondents with tertiary education had better practice of preventive measures compared to other educational levels. This observation highlights the importance of education in enhancing the adoption of healthy behaviour. Similarly, health workers and teachers also exhibited better practice of preventive measures compared to other occupations. This finding is, however, expected because health workers are more informed about health-related issues and thus more likely to adopt preventive measures. Furthermore, teachers are generally vast about topical issues, particularly health related issues and tend to educate and encourage practice of healthy behaviour and good hygiene among students. These findings underscore the need for tailored and culturally sensitive health education programs that address specific barriers to adherence. Strengthening community engagement, leveraging digital platforms for health communication, and ensuring equitable access to resources are critical steps towards enhancing public health preparedness against future outbreaks.[3,10]

The observation that positive attitude toward covid-19 preventive measures is a significant predictor of practice of covid-19 preventive measures contributes to the growing body of research on COVID-19 KAP studies in Africa, particularly in Nigeria. The findings align with global perspectives on the importance of knowledge, attitudes, and practices in shaping public health outcomes during pandemics.[10,12] This study has provided further evidence for policymakers and health promoters to increase and sustain health promotion activities aimed toward improving overall knowledge and attitude toward preventive measures as a strategy to strengthen epidemic preparedness and response.The findings of this study should, however, be interpreted with caution because it was restricted to Oghara; thus, may limit its generalizability.

Conclusion

This study has provided valuable insights into the knowledge, attitudes and practices (KAP) regarding COVID-19 prevention among Oghara residents in Delta State, Nigeria. The study revealed a generally high level of knowledge and positive attitudes towards preventive measures. However, there exists a significant gap between knowledge and actual practice, indicating the need for targeted interventions to enhance adherence to recommended preventive measures.

Recommendations

Based on the findings of this study, some recommendations are proposed to improve COVID-19 prevention and enhance the overall pandemic preparedness and response in Oghara and Delta state in general. Efforts should be made to ensure regular implementation of targeted health education campaigns focusing on correct preventive practices, debunking myths, and addressing misconceptions about COVID-19; strengthen community engagement through local leaders, community health workers, and digital platforms to disseminate accurate information and

promote behavior change; ensure equitable access to personal protective equipments (PPEs), hand hygiene facilities, and sanitation supplies across all communities, especially in rural and underserved areas; develop tailored interventions for specific populations, such as older adults and younger adults to address specific barriers to adherence; and incorporating cultural beliefs and practices into health promotion strategies to enhance acceptability and effectiveness of COVID-19 preventive measures. Delta State can indeed enhance its pandemic preparedness and response through sustained capacity building by addressing the identified gaps and leveraging community strengths and resources.

Acknowledgement

We acknowledge with thanks the cooperation of the residents of Oghara community in Delta State, particularly the respondents for taking time to complete the questionnaire.

Conflict of interest: None declared

Funding: No funding was received for this study.

References

1. World Health Organization. Coronavirus disease (COVID-19) pandemic. Geneva: World Health Organization 2021. Available at: https://www.who.int/emergencies/diseases/novel-coronavirus-2019 [Accessed 14 July 2024].

2. Nigeria Centre for Disease Control and Prevention. First Case of Coronavirus Disease Confirmed in Nigeria. Nigeria: Nigeria Centre for Disease Control and Prevention 2020. [online]. Available at: https://ncdc.gov.ng/news/227/first-case-of-corona-virus-disease-confirmed-in-nigeria [Accessed 13 July 2024].

3. Habib MA, Dayyab FM, Iliyasu G and Habib AG. Knowledge, attitude and practice survey of COVID-19 pandemic in Northern Nigeria. PLoS ONE 2021;16(1): e0245176.
DOI: 10.1371/journal.pone.0245176

4. Al-Dmour H, Masa'deh R, Salman A, Abuhashesh M, Al-Dmour R. Influence of Social Media Platforms on Public Health Protection Against the COVID-19 Pandemic via the Mediating Effects of Public Health Awareness and Behavioural Changes: Integrated Model. J Med Internet Res 2020;22(8): e19996.doi: 10.2196/19996PMID: 32750004PMCID: 7439806

5. Araoye MO. Subjects Selection. In: Research Methodology with statistics for Health and Social sciences. Ilorin: Nathadex publishers. 2003;115–129.

6. Allagoa DO, Oriji PC, Obagah L, Tekenah ES, Dambo N, Atemie G. Knowledge, attitudes and practices towards COVID-19 among pregnant women in a tertiary hospital in South-south Nigeria. International Journal of Research and Reports in Gynaecology 2021;3(1):123-29. https://journalijrrgy.com/index.php/IJRRGY/article/view/27.

7. Umar ZA, Michael GC, Grema BA, Suleiman AK, Olawumi AL, Damagum FM, et al. Knowledge and practice of COVID-19 preventive measures and its associated

factors among attendees of a primary care clinic in Kano, Nigeria; A cross-sectional study. Niger J Gen Pract 2022;20:14-22.

8. Omoronyia EE, Eyong E, Omoronyia OE, Akpan U, Arogundade K, Ekanem EI. Knowledge, attitude, and practice of preventive measures against COVID-19 among pregnant women receiving antenatal care in Calabar, Nigeria. Niger J Med 2021; 30:548-55

9. Akafa TA, Amos Y, Okeke A, Oreh A. Knowledge, Attitudes, and Practices towards COVID-19 Transmission and Preventive Measures among Residents of Nigeria: A Population-Based Survey through Social Media. West African Journal of Medicine 2021;38(4):347-358.

10. Olum R, Kajjimu J, Kanyike AM, Chekwech G, Wekha G, Nassozi DR, et al.
Perspective of Medical Students on the COVID-19 Pandemic: Survey of Nine Medical Schools in Uganda JMIR Public Health Surveill 2020;6(2):e19847. doi: 10.2196/19847

11. Reuben RC, Danladi MMA, Saleh DA, Ejembi PE. Knowledge, Attitudes and Practices Towards COVID-19: An Epidemiological Survey in North-Central Nigeria. Journal of Community Health. 2021;46(3):457-470. doi: 10.1007/s10900-020-00881-1.

12. Bendau A, Petzold MB, Pyrkosch L, Maricic LM., Betzler F, Rogoll J, et al. Associations between COVID-19 related media consumption and symptoms of anxiety, depression and COVID-19 related fear in the general population in Germany. European Archives of Psychiatry and Clinical Neuroscience 2021; 271:283–291 https://doi.org/10.1007/s00406-020-01171-6

13. Juin J CY, Ern SLS, Min CEHS, Jing NK, Qi MNM, Hoe RCC et al. Knowledge, Attitudes, and Practices of COVID-19 Vaccination among Adults in Singapore: A Cross-Sectional Study. *The American journal of tropical medicine and hygiene*,2022; *107*(3), 540–550. Advance online publication. https://doi.org/10.4269/ajtmh.21-1259.

14. Umar BN, Mohammed N, Ahmad KH, Usman K, Khaleequr R. Knowledge, perception and practices toward COVID-19 among care receivers attending a university medical center in Nigeria: A cross-sectional study. Microbes Infect Dis 2021; 2(4): 632-641.

15. Orunta PC, Ndu CO, Ijioma CE, Ogedegbe OJ, Ogundipe FA, et al. Knowledge and Practice of Precautions and Prevention of COVID-19 Among Adolescents in Umuahia, Nigeria: A Cross-Sectional Study. Cureus 2024; 16(7): e64984. DOI 10.7759/cureus.64984.

16. Oyeyemi OT, Oladoyin VO, Okunlola OA, Mosobalaje A, Oyeyemi IT, Adebimpe WO, et al. Journal of Public Health: From Theory to Practice (2022) 30:1603–1612 https://doi.org/10.1007/s10389-020-01455-0

17. Nwonwu EU, Ossai EN, Umeokonkwo CD, Ituma IB, Akamike IC, Okenwa JU. Use of Face Mask as a COVID-19 Preventive Measure Among Household Heads in Enugu Nigeria. Orient Journal of Medicine 2021; 33[3-4]:105-111.

18. Kotian SP, Waingankar P, Tawde A. Knowledge, Attitudes, and Practices towards COVID-19: An Epidemiological Survey in Mumbai, India, *International Journal of Epidemiology*, 2021; 50(1):dyab168.358, https://doi.org/10.1093/ije/dyab168.358

19.Ali M, Begum SS, Akhi MN, Shuvo BH. Knowledge, Attitude and Practices towards COVID-19 Pandemic: An Epidemiological Survey in a Rural Community in Bangladesh. The Journal of Ad-din Women's Medical College. 2022; 10(2):8-14. DOI: https://doi.org/10.3329/jawmc.v10i2.67490

20. Abene EE, Ocheke AN, Ozoilo KN, Gimba ZM, Okeke EN, Agbaji, OO et al. Knowledge, attitudes and practices towards Covid-19 among Nigerian healthcare workers during the Covid-19 pandemic: A single centre survey. Nigerian Journal of Clinical Practice 2021; 24(12): 1846-1851. DOI: 10.4103/njcp.njcp_365_20