



Knowledge, Attitude and Prevention Practice of COVID-19 in South-West Nigeria

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Authors' contributions

This work was carried out in collaboration among all authors. Author ODE provided conception of research idea, research planning, data collection, data analysis, result and reviewed the manuscript.

Author DEA performed data collection, wrote discussion and reviewed the manuscript. Author BOA performed data collection and manuscript review. All authors read and approved the final manuscript.

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ABSTRACT

Introduction: To assess knowledge, attitude and prevention practice of coronavirus disease 2019 (COVID-19) in Southwest, Nigeria. This was an online cross-sectional study among dwellers of southwest Nigeria.

Methods: Data were collected online with kobo toolbox and analyzed using the Statistical package for social sciences (SPSS, 2018) and the descriptive statistics, test of independence and binary logistic regression were presented.

Results: Of the 286 study participants, 96.1% had good knowledge, 99.3% had positive attitude towards control of COVID-19, while 77.3% had good practices for prevention of the virus. Majority of the participants (86.9%) had tertiary education, 11.3% were 40 years or older. Age and education were independently associated with COVID-19 prevention practice. After adjustment for

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some selected socio-demographic factors, only age of 10 – 19 years (OR: 3.83, CI: 1.05, 14), age 20-29 years (OR: 2.99, CI: 1.18 -7.55), and 30 -39 years (OR: 4.35, CI: 1.49-12.67) were more likely to have good practice of COVID-19 prevention compared to age ≥ 40 years.

Conclusion: The result revealed a high prevalence of good practices, and the majority had good knowledge of COVID-19 and positive attitude towards control of COVID-19. Age and education were identified to be associated with practice of COVID-19 prevention. Further exploration revealed that elders (≥ 40 years) were not likely to have good practice of COVID-19 prevention. We deduced that good practice of COVID-19 prevention was high in southwest Nigeria but notably low among elders and those who attained below tertiary education in southwest Nigeria. However, people of older age and poor education should be given much attention for proper enlightening and prevention strategies in this pandemic.

Keywords: COVID-19; lockdown; prevention-practice; Southwest Nigeria.

1. INTRODUCTION

COVID-19 remained an emerging respiratory disease [1]. Until now, cough and shortness of breath accompanied with fever are major signs of the infection. Continuous cleaning of hand using alcohol-based cleaner, sanitizers, soap and water are strongly recommended for prevention of the virus. Also, avoidance of crowded places and close contact with anyone having any of the symptoms of COVID-19 as well as covering of nose and mouth while coughing or sneezing was necessitated for controlling the spread of the deadly virus [2].

COVID-19 is a highly infectious disease and was announced as a public health emergency that required global attention by the World health organization (WHO). Globally, COVID-19 pandemic has spread very swiftly, and as at August 26 of 2020, the virus has reached more than 175 countries and 30 territories, resulting in 23,980,044 confirmed cases and 820,763 deaths (NCDC, 2021). Higher proportion of the COVID-19 cases was reported from Italy, China, Spain and the United States of America (U.S.A) [3]. In Africa, there are 1,019,362 laboratory confirmed cases and 20,828 deaths with major occurrence in South Africa [3]. In Nigeria, COVID-19 case was reported for the first time 27th of February 2020, when an Italian citizen arrived at Lagos international Airport 2 days earlier became ill and was immediately isolated [4]. The case has since then grown exponentially, and by August 26 2020, the Nigeria Centre for Disease Control (NCDC) reported 53,021 total confirmed, 40,281 discharged, and 1,010 deaths cases in Nigeria [5]. Since April 1, 2020 when rate of growth of the infection has been observed, some unprecedented measure has been adopted by the Nigeria government authorities so as to contain the pandemic in Nigeria, including cessation of all movements around Lagos, Abuja

and Ogun state for about 14 days, leading to the suspension of religious gathering, businesses, offices and interstate travels within these locations (Ozili, 2020). This containment period is also used to identify, trace, isolate, and care for infected people and suspected cases (NCDC, 2021).

Currently, the second wave does not spare Nigeria and efforts to curb the spread and overcome COVID-19 is still ongoing, as such, people's adherence to the control measures is really essential, which is mostly influenced by their Knowledge, Attitude and Practices (KAP) [6,7]. To enhance outbreak management in Nigeria, there is an urgent need to understand the public grasp of COVID-19 during this critical period. In this paper, we investigated the knowledge, attitude and prevention practice of COVID-19 as well as the factors influencing COVID-19 prevention practice among dwellers of southwest, Nigeria.

2. METHODS

2.1 Study Design and Setting

This is an analysis of an online data collected through a cross-sectional study design on knowledge, attitude towards control of COVID-19 and practices towards prevention of COVID-19 in Southwest Nigeria which was carried out during the COVID-19 lockdown (between March and June 2020) Nigeria.

The South-west region in Nigeria includes six states, namely: Ekiti, Lagos, Oyo, Osun, Ondo and Ogun. According to the statistics from the National Bureau of statistics, the southwest region has a total population of 38,257,260 constituting 27% of Nigeria's population in 2020. The major occupant of this region speaks Yoruba

language in diverse dialects across each state. As at August 12, 2020, almost half (47.9%) of the confirmed cases of COVID-19 was found in the south-west region with Lagos state having the highest (71%) among the six states in southwest Nigeria (NCDC, 2021).

2.2 Study Population and Sampling Methods

The study population consisted of 286 participants across all age groups who reside in southwest Nigeria and have access to the internet to access the online questionnaire via social media such as whatsapp, facebook and others. Samples that were available within the study timeframe were used for the analysis.

A snowball sampling technique was used to locate participants.

2.3 Study Variables

The online instrument used includes sections on the demographic characteristics, knowledge of COVID-19, and attitude towards control of COVID-19 and prevention practice of COVID-19. The adapted instrument for measuring knowledge, attitude and prevention practice was validated; the Cronbach's Alpha was 0.91. Major variables of interest were knowledge of COVID-19, attitude towards control of COVID-19 and prevention practice of COVID-19. Knowledge towards prevention of COVID-19 was measured with 14 questions, each question having two options "Yes" coded as 1 and "No" coded as 0. These 14 questions were summed up and the calculated mean of the scores was 6.3. Participants who have scores ≤ 6 were categorized as having poor knowledge and those who have scores greater than >6 were regarded to have good knowledge of COVID-19. Attitude towards COVID-19 was measured with 6 questions each having three options "Yes" coded as 1, "No" coded as 0 and "I don't know" coded as 0. The 6 questions were summed up and the calculated mean of the total scores was 2.1. Participants who have scores ≤ 2 were categorized as having negative attitudes and those who have scores >2 were regarded to have positive attitudes towards COVID-19. The third section (practices towards prevention) was measured with 5 questions with options "Yes" coded as 1, "No" coded as 0 and "I don't know" coded as 0. After summing the scores to derive the total, the calculated mean of the total scores was 2.4. The total score was categorized into good practices (scores >2) and poor practices

(scores ≤ 3). Other variables include Age, gender, religion, marital status, and marriage type, level of education, employment status, ethnicity, income, occupation and sources of information.

2.4 Data Analysis

Study participants submitted directly into the database of Kobo Toolbox through the provided link and their responses were exported into excel worksheet which was later exported into SPSS version 25 for data analysis [8].

Quantitative data analysis was carried out, frequencies and percentages were calculated to determine the proportion of those who have good knowledge, positive attitude and good practices towards prevention of COVID-19.

Further analysis was performed to identify factors associated with COVID-19 prevention practice using the test of independence, p values that were less than 0.1 were considered to be significant at 95% level of significance. Statistically significant variables in the bivariate analyses were entered into the Binary logistic regression model to determine factors associated with likelihood of good practice towards prevention of COVID-19.

3. RESULTS

3.1 Respondents' Profile

The demographic characteristics, knowledge, attitude towards control of COVID-19 and COVID-19 prevention practice were presented on Table 1. The mean age of the 282 study participants who completed the questionnaire was 27 ± 9.3 years. All the participants (282) claimed they have heard about COVID-19, The proportion of the participants who had good knowledge was 96.1%, 99.3% had positive attitude towards control of COVID-19, while 77.3% had good practices for prevention of the virus. Over half of the study participants (57.3%) were female, 86% were Christians and 24.8% were married/ cohabiting. Majority of the participants (86.9%) had tertiary education and 10.3% have attained secondary education, 48.2% were employed and over half of the participants (67.8%) were Yoruba by tribe, while 17.5% were Igbo. 37.6% of them earn a monthly salary less than the minimum wage of thirty thousand Naira (#30,000). About 39.1% were

unemployed, 36.7% were white collar workers while others were blue collar.

3.2 Independent Factors Associated with COVID-19 Prevention Practice

Result from the bivariate association between COVID-19 prevention practice and the socio-demographic attributes of the respondents were shown in Table 2. Age of the study participants and level of education were significantly associated with practices of COVID-19

prevention ($p < 0.05$). Most of the participants having good prevention practice were between the ages of 30-39 (84.4%), females (79.5%), Married (78.9%), accomplished tertiary education (79.6%) and employed (80.7%). Also, higher practiced Christianity (76.7%), belongs to other ethnic groups different from Yoruba and Igbo (86.8%) and heard about COVID-19 from radio/television, as well as good knowledge of COVID-19 (78.2%) and positive attitude for control of COVID-19 (77.3%).

Table 1. Respondents profile

Variables	Frequency(n)	Percent (%)
Gender		
Male	120	42.7
Female	161	57.3
Religion		
Christian	240	86.0
Islam	39	13.6
Marital status		
Married	71	24.8
Not married	215	75.2
Education		
Primary	8	2.8
Secondary	29	10.3
Tertiary	245	86.9
Are you employed?		
Yes	135	48.2
No	145	51.8
Ethnicity		
Yoruba	194	67.8
Igbo	50	17.5
Others	42	14.7
Age group		
10-19	45	16.0
20 -29	141	50.0
30 -39	64	22.7
>=40	32	11.3
Income		
<minimum wage (30000)	44	37.6
>=minimum wage (30000)	73	62.4
Occupation		
Unemployed	110	39.1
White collar	103	36.7
Blue collar	68	24.2
Knowledge category		
Poor knowledge	11	3.9
Good Knowledge	271	96.1
Attitude towards control of COVID-19		
Negative attitude	2	0.7
Positive attitude	280	99.3
Practices towards prevention		
Poor practices	64	22.7
Good practices	218	77.3

Table 2. Factors associated with COVID-19 prevention practice in South west Nigeria

Variables	Practices towards prevention		Test statistic	P value
	Poor practices	Good practices		
Age group				
10-19	12(26.7)	33(73.3)	8.46	0.004
20 -29	29(20.6)	112(79.4)		
30 -39	10(15.6)	54(84.4)		
>=40	13(40.6)	19(59.4)		
Gender				
Male	31(25.8)	89(74.2)	1.11	0.291
Female	33(20.5)	128(79.5)		
Marital status				
Married	15(21.1)	56(78.9)	0.13	0.715
Not married	49(23.2)	162(76.8)		
Marriage type				
Monogamy	15(23.1)	50(76.9)	2.04	0.332
Polygamy	0(0)	7(100)		
Education				
Primary	2(25.0)	6(75.0)	6.53	0.038
Secondary	12(41.4)	17(58.6)		
Tertiary	50(20.4)	195(79.6)		
Employment status				
Yes	26(19.3)	109(80.7)	1.57	0.21
No	37(25.5)	108(74.5)		
Occupation				
Unemployed	27(24.6)	83(75.5)	1.82	0.402
White collar	19(18.4)	84(81.6)		
Blue collar	18(26.5)	50(73.5)		
Religion				
Christian	56(23.3)	184(76.7)	0.56	0.456
Islam	7(17.9)	32(82.1)		
Ethnicity				
Yoruba	43(22.2)	151(77.8)	4.47	0.107
Igbo	16(32.0)	34(68.0)		
Others	5(13.2)	33(86.8)		
Source of information about COVID-19				
Radio/Television	8(21.6)	29(78.4)	0.94	0.624
Social media	20(19.8)	81(80.2)		
More than one source	36(25.0)	108(75.0)		
Knowledge of COVID_19				
Poor	5(45.5)	6(54.6)	3.38	0.066
Good	59(21.8)	212(78.2)		
Attitude towards control of COVID-19				
Negative	1(50)	1(50)	0.86	0.355
Positive	63(22.7)	217(77.3)		

Table 3. Factors influencing COVID-19 prevention practice in south-west, Nigeria

Variables	OR	P value	95%CI	
			Lower	Upper
Age group				
10-19	3.83	0.042**	1.05	14.00
20 -29	2.99	0.021**	1.18	7.55
30 -39	4.35	0.007**	1.49	12.67
>=40 (reference)				

Variables	OR	P value	95%CI	
			Lower	Upper
Education				
Primary (reference)				
Secondary	0.28	0.207	0.04	2.04
Tertiary	0.72	0.732	0.11	4.66
Ethnicity				
Yoruba	1.71	0.147	0.83	3.53
Igbo (reference)				
Others	2.59	0.103	0.82	8.12
Occupation				
Unemployed	1.02	0.962	0.44	2.38
White collar	1.84	0.147	0.81	4.18
Blue collar (reference)				
Knowledge of Covid-19				
Poor (reference)				
Good	1.66	0.479	0.41	6.72

** p value < 0.05

3.3 Factors Associated with the Likelihood of Good Practices of COVID-19 Prevention

Table 3 shows the result from the multivariate binary logistic regression for practices of COVID-19 prevention.

Age remained a statistically significant determinant as those between age of 10 – 19 years (OR: 3.83, CI: 1.05, 14), age 20-29 years (OR: 2.99, CI: 1.18 -7.55), and 30 -39 years (OR: 4.35, CI: 1.49-12.67) were more likely to have good practice of COVID-19 prevention compared to age ≥ 40 years. Other variables not statistically significant but showed a higher odds of good practice of COVID-19 prevention includes Yoruba (OR: 1.71, CI: 0.83-8.12), others (OR: 2.59, CI: 0.82 -8.12) compared to Igbo, unemployed (OR: 1.02, CI: 0.44-2.38) and white collar (OR: 1.84, CI: 0.81-4.18) in relative to blue collar. Also, secondary education (OR: 0.28, CI: 0.04-2.04) and tertiary education (OR: 0.72, CI: 0.11-4.66) were less likely to have good practices of COVID-19 prevention in relative to primary education which was not also statistically significant but showed a tendency if could be explored in further studies.

4. DISCUSSION

We explored factors associated with COVID-19 prevention practice among southwestern in Nigeria in this paper. Demographic and socio-economic variables were factors considered in the analysis. The result revealed a high prevalence of good practices, and the majority

had good knowledge of COVID-19 and positive attitude towards control of COVID-19. The high prevalence of good knowledge of COVID-19 as found in this study was in line with findings in the northern part of the country [9]. This reasonable prevalence of knowledge would definitely be as a result of the huge effort to spread the information through all channels, such as radio, television, internet and SMS sent by NCDC to users of cell phones in the country. Lockdown of schools, markets and religious worship centers would definitely have contributed to the spread of information on COVID-19 which was evidenced by a scholar in Nigeria [10]. The similarity of this findings to another study conducted in North central Nigeria would of course be as a result of similar intervention made by the federal government to spread the news [9] implying that efforts to curb the spread of the virus in this nation were effective and that the spread would hopefully be reduced to zero since good knowledge of the virus leads to a successful management of the virus [11]. Age and education were found to be associated with practices towards prevention of COVID-19. Age group 10 - 19, 20-29 and 30-39 were more likely to have good practice of COVID-19 prevention and it is similar to a study carried out in Rivers state in Nigeria [12]. This significant association is not strange as these two factors remained the major driver of socio-demographic characteristics and a fundamental determinant of health and health promotion. This implies that countries with poor educational attainment would be burdened with this deadly infection as their practices towards the prevention of the spread of COVID-19 may be obviously poor. [13]. This revelation of poor prevention practice among elders is similar to

previous studies in and outside this country [14,15]. This study is not free of limitations, due to the lockdown that took place during the implementation of this study, we were unable to randomly and physically reach respondents which made us to settle for the use of online data collection tool (kobo tool box) and snowball sampling which would have introduced a form of bias and restriction to only internet users [16]. Also, the online response rate was really poor among Nigerians as they were afraid of providing their demographic and socio-economic information online due to the increase in the rate of fraud in the country, this restricted us to a low sample size (n = 286).

5. CONCLUSION

Good practice of COVID-19 prevention was high in southwest Nigeria but notably low among elders and those who attained below tertiary education in southwest Nigeria. However, people of older age and poor education should be given much attention for proper enlightening and prevention strategies in this pandemic. Also, clamor for education should continue and elders be given much attention.

CONSENT

Participants who consented to participate in the study were appealed too to forward the link to people via online social media application or email.

ETHICAL ISSUES

Ethical approval was obtained for this study from the state ministry of health. No confidential variables and personal identifiers were obtained in this study. Every tenet of the Helsinki declaration was observed in this study. As a result, the confidentiality and anonymity of the respondents are guaranteed.

WHAT IS ALREADY KNOW ON THIS TOPIC

COVID-19 knowledge in Nigeria, prevalence of COVID-19 in Nigeria.

WHAT THIS STUDY ADDS

Knowledge of COVID-19 in south-west, Nigeria.
Perception of COVID-19 in south-west, Nigeria.

The role of Age and education on COVID-19 prevention practice.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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