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COVID-19 Knowledge, attitude and prevention practice in southwest Nigeria

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Abbreviations

COVID-19: Corona Virus disease 2019

KAP: Knowledge, Attitude and Practice

WHO: World Health Organization

NCDC: Nigeria Centre for Disease Control

SARS-CoV-2: Severe acute respiratory syndrome corona virus 2

SMS: Short Message Service

ABSTRACT

To assess COVID-19 knowledge, attitude and prevention practice as well as the associated factors among people living in Southwest, Nigeria. This was an online cross-sectional study among dwellers of southwest Nigeria. Data were collected online with kobo toolbox and analyzed using descriptive statistics, test of independence and binary logistic regression. 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 40years or older. Age and education were independently associated with COVID-19 prevention practice. After adjustment for 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 \geq 40 years. The result revealed a high prevalence of good practices, and 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. While further exploration revealed that elders (\geq 40years) 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, Southwest Nigeria

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1. INTRODUCTION

The corona virus disease 2019 abbreviated “COVID-19” remained an emerging respiratory disease and was discovered for the first time on December 2019 in Wuhan, China[1]. This pre-existence immunity of the virus in unknown in human, the known transmission means were droplets and vomits during close unprotected contact between an infector and infectee [2]. Mild and severe illness were observed among those infected by COVID-19 and could be fatal among older and people with an underlying illness especially those who have cardiovascular diseases [2]. Symptoms of COVID-19 are unclear, and asymptomatic presentation could result into severe pneumonia and death[2]. 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 [3].

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). COVID-19 was then referred to by the WHO March 11 2020, as the first pandemic caused by a corona virus, the WHO hence called all countries to take urgent and aggressive actions to curb the rapid outspread of the virus[4, 5]. 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, resulted in 23,980,044 confirmed cases and 820,763 deaths. Higher proportion of the COVID-19 cases was reported from Italy, China, Spain and United States of America (U.S.A). In Africa, there are 1,019,362 laboratory confirmed cases and 20,828 deaths with major occurrence in South Africa[6]. In Nigeria, COVID-19 case was reported for the first time 27th of February 2020, when an Italian citizen arrived at Lagos international Airport 2days earlier became ill and was immediately isolated[7]. 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 [8]. 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 to control the COVID-19 outspread in Nigeria, including cessation of all movements around Lagos, Abuja and Ogun state for about 14days, leading to the suspension of religious gathering, businesses, offices and interstate travels within these locations. This containment period is also used to identify, trace, isolate, and care for infected people and suspected cases. Currently, Nigerian are still making effort to curb the spread and overcome COVID-19, as such, people’s adherence to the control measures is really essential, which is mostly influenced by their Knowledge, Attitude and Practices (KAP) [9, 10]. To enhance outbreak management in Nigeria, there is an urgent need to understand the public grasp of COVID-19 this critical period. In this paper, we investigated the knowledge, attitude towards prevention, practice towards prevention and factors associated with the practice of COVID-19 prevention southwest in 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.

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, southwest region has a total population of 38,257,260 constituting 27% of Nigeria 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[8].

2.2 Study population and sampling methods

The study population consisted of 286 participants across all age group who reside in the southwest Nigeria and have access to internet to access the online questionnaire via social media such as Whatsapp, Facebook and others.

A snowball sampling technique was used to locate participant. Participants who consented to participate in the study were appealed too to forward the link to at least one person via online social media application or email.

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.

2.3 Study Variables

The 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 questions having two options “Yes” coded as 1 and “No” coded as 0. These 14 questions was summed up and participants who have scores less than 7 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 questions having three options “Yes” coded as 1, “No” coded as 0 and “I don’t know” coded as 0. The 6 questions was summed up and participants who have scores less than 3 were categorized as having negative attitude and those who have scores greater than 2 were regarded to have positive attitude 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. The total score was categorized into good practices (cores >2) and poor practices (scores < 3). Other variables includes Age, gender, religion, marital status, 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.[11]

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 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 Binary logistic regression model to determine factors associated with likelihood of good practice towards prevention of COVID-19.

4 Results

4.1 Socio-demographic, Knowledge, attitude towards control of COVID-19 and practices towards prevention of COVID-19.

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% wear white collar workers while others wear blue collar.

Table 1 Socio- Demographic Information of the respondents.

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

4.2 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 age of 30-39 (84.4%), females (79.5%), Married (78.9%), accomplished tertiary education (79.6%) and employed (80.7%). Also, higher proportion of them wear white collar (81.6%), practices 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 2: Factors associated with COVID-19 prevention practice in South west Nigeria.

Variables	Practices towards prevention		Test	Pvalue
	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)		

4.3 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 \geq 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.

Table 3: Binary Logistic Regression

Variables	OR	pvalue	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
\geq 40 (reference)				
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
** pvalue < 0.05				

5 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 majority had good knowledge of COVID-19 and positive attitude towards control of COVID-19. The high prevalence of good knowledge of COVID-19 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 centres would definitely have contributed to the spread of information on COVID-19 which was evidenced by a scholar in Nigeria[12]. 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 [13] 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 [14] 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 [15]. 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. [16]. This revelation of poor prevention practice among elders is similar to previous studies in and outside this country [17, 18]

6 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 as this groups of people have reported to be at risk even to other infections in previous studies

7 Declarations

7.1 Study Limitations

This study is not free of limitations, due to the lockdown 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 introduce a form of bias and restriction to only internet users [19]. Also, 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).

7.2 Acknowledgements

Much appreciation goes to all the participants and those who helped in forwarding the questionnaire link to participants.

7.3 Informed Consent

Adequate information about the study was provided in the fore page of the online questionnaire and informed consent was obtained through the platform. Participants were fully informed about their freedom to decline/ withdraw from the study at any point.

7.4 Competing Interests

We declare that there is no conflict of interest.

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