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Risk Communication and Community Attitude to Corona Virus Disease 2019 Outbreak in Southwestern Nigeria

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Abstract
Background: The global community is racing to slow down and eventually halt the spread of COVID-19. The success of the ongoing battle against this pandemic all over the world depends on community knowledge and perception. The objective of this study was to assess risk communication, knowledge and community attitudes to COVID-19 outbreaks in southwestern Nigeria. Methods: Community based descriptive cross-sectional study of risk communication, knowledge and community attitude to COVID-19 prevention and control among 1200 community persons selected using multistage sampling methods. Research instrument was a semi-structure interviewer administered questionnaire, and data analyzed using the IBM SPSS software version 23.0. Findings: Mean age of respondents was 36.0 ± 12.1 years, 735 (61.3%) were females and 465 (38.8%) were males. Majority of the respondents (97.5%) had heard about COVID-19, with the radio (65.2%) and television (60.4%) being the major sources of information. Only 455 (37.9%) think that they can get COVID-19, 738 (61.5%) said they were ready to willingly observe staying indoors or lockdown, only 525 (43.8%) have been putting on face mask. Respondents with good knowledge of COVID-19 transmission, symptoms and prevention were 39.6%, 88.7% and 94.5% respectively, while for good perception towards COVID-19 was 72.2%. Predictors of good knowledge of transmission and symptoms of COVID were respondents being above 19 years, being a male and having education level above secondary school. Predictors of good knowledge and perception of prevention and control measures of COVID were respondents being above 19 years, being a female and having education level above secondary school. Conclusion: Good awareness and poor knowledge of COVID-19 transmission, but good knowledge of prevention and good perception were reported among communities in Southwestern Nigeria. Only few believed they could get the disease. This calls for enlightenment campaign and good communication messages directed at the general population.

Keywords: COVID-19, Risk Communication, Misconception, Knowledge and Prevention, Southwestern Nigeria

1. Introduction

The world is facing one of the worst experiences of a pandemic in several decades, as a new corona virus ravages hard and fast to consume humanity. It is a public health emergency of international concern. Significant mortality and morbidity have been recorded, with huge losses to the world economy. Corona Virus Disease (COVID-19) is one of the several emerging disease of public health importance, others related include the SARS –CoV, H1N1 and MERS-CoV outbreaks of 2003, 2009 and 2013 respectively. The outbreak was first reported by the Chinese health authority to the World Health Organization (WHO) in 2019 as unexplained disease causing flu - like illness with potential respiratory difficulty and high mortality.

The case studies of COVID-19 published in the New England Journal of Medicine (NEJM) on January 29, 2020, encapsulates the first 425 cases recorded in Wuhan. (Li et. al., 2020) Data indicate that the patients' median age was 59 years, with a range of 15 to 89 years. Thus, they reported no clinical cases in children below 15 years of age. There were no significant gender differences (56% male). As of the end of March 2020, a total of 151 cases of COVID-19 were confirmed in Nigeria with 9 hospital discharges and 2 deaths. (Nigerian Center for Disease Control [NCDC], 2019)

The evidence of human-to-human transmission was confirmed among close contacts. (Li et. al., 2020) The epidemic was greeted with several myths and misconceptions about the infection, amidst high media coverage and awareness among community members relating to causes, mode of transmission and prevention and control of COVID-19.
In January 2020, the outbreak was declared by the WHO a Public Health Emergency of International Concern (PHEIC). The CoVs have become the major pathogens of emerging respiratory disease outbreaks. They are a large family of single-stranded RNA viruses (+ssRNA) that can be isolated in different animal species. (Huang et. al., 2020) At the moment, the therapeutic strategies to deal with the infection are only supportive, and prevention aimed at reducing transmission in the community is the best weapon.

The Nigerian Government has announced a number of measures that could mitigate or contain the spread of the epidemic since there is no known cure or effective treatments. Major preventive measures such as wearing of mask, regular hand washing, use of sanitizers among others have to do with the communities. How well the communities can act to prevent spread would depend on their risk communication level and strategies. Taking one recommended action or the other requires full compliance with such provisions, and also requires that these decisions and recommendations be communicated to the community and reinforced. This study therefore assessed risk communication, knowledge and community attitudes to COVID-19 outbreaks in southwestern Nigeria

2. Materials and Methods

2.1. Study area

The study area is Southwestern Nigeria with a population of about 19 million people distributed among six states. COVID 19 has been reported in all the states. Each has their isolation center in preparation for potential outbreaks. There are numerous secondary and tertiary level health facilities for the treatment of COVID-19 within the study area. Lagos State host the first and the largest international airport while some of the States have their respective local airports that are potential entry point for imported COVID-19 cases.

2.2. Study designs

Community based descriptive cross-sectional study to assess risk communication, knowledge and community attitude to COVID-19 in Southwestern Nigeria.

2.3. Study population

All individuals or community members aged 18 years and above who are living in specified communities for at least a period of six months. Health care workers and state technical team members in charge of managing COVID-19 outbreak were excluded from this study in order not to introduce bias of knowing the answers already

2.4. Sample size calculation

Was calculated using the modified Leslie Fishers formula for calculation of sample size, with a prevalence/proportion (knowledge score of those who have heard about COVID-19 assumed to be 0.5 (Araoye, 2004), a sample size of 384 was rounded up to 400 in order to make up for non-response and attrition. The final sample size of 1200 was used for better representation.

2.5. Sampling methods

Three states out of six were selected by simple random sampling (simple balloting) questionnaires were equally distributed by states. In a state, one urban Local Government Area (LGA) was selected by simple random sampling (simple balloting). In a LGA, one ward and three streets were selected by simple random sampling (simple balloting). Houses were selected on a street by selecting every one in three systematically, and one eligible respondent was randomly selected and interviewed .in a selected house until questionnaire allocated for the street was exhausted and another one randomly selected.

2.6. Research instruments and data collection

The research was carried out with the aid of a semi structured interviewer administered pretested questionnaire that was divided into 4 sections. Standard protective methods were adopted during the period of data collection. Instrument was validated by a review of the instrument by an epidemiologist and virologist.

2.7. Ethical considerations

Ethical approval to conduct this study was obtained from the LAUTECH Teaching Hospital Osogbo research ethics committee. Written informed consent was obtained from all these respondents who had given consent into participating in this study

2.8. Data management

Data collected was cleaned and checked for consistency and validity through random checks and double entry. Univariate analysis includes presentation into tables and charts, while bivariate analysis used the Chi squared test to demonstrate relationship between two categorical variables of interest. Knowledge and perception score was calculated by pulling together all relevant variables and estimating about the mean score. Multivariate analysis depicts predictors of knowledge and risk to COVID-19 among respondents. P-value was kept at 5% of significance for all inferential statistics.

3. Results

Table 1 shows that the mean age of respondents was 36.0 ± 12.1 years, with 366 (30.5%) of respondents being in the 20-29 years age group; 465 (38.8%) were males, 660 (55.0%) had up to tertiary level education, 413 (34.4%) were never married or single. Table 2 shows that 1180 (98.3%) had heard about COVID-19, with the radio 782 (65.2%), Television 725 (60.4%), the internet 575 (47.9%) and through a friend 420 (35.0) being common sources of information. About 1072 (89.3%) said it is a serious disease, 1144 (95.3%) said it is deadly, 1072 (89.3%) said that the disease is preventable while 575 (47.9%) could list 3 countries presently ravaged by COVID-19.

Table 1: Socio-demographic characteristics of respondents (n=1200)

Variable	Frequency	Percentage
Age (years)		
10-19	60	5.0
20-29	366	30.5
30-39	342	28.5
40-49	245	20.4
>50	187	15.6
Sex		
Male	465	38.8
Female	735	61.3
Educational status		
Primary	46	3.8
Secondary	482	40.2
Tertiary	660	55.0
Koranic	6	0.5
No education	2	0.2
Others	4	0.3
Religion		
Islamic	101	8.4
Christianity	1096	91.3
Traditional	3	3
Marital status		
Never married or Single	413	34.4
Divorced	23	1.9
Widowed	46	3.8
Separated	319	26.6
Married	399	33.3

Mean age=36.0+12.1years

Table 2: Respondents knowledge on Coronavirus (n=1200)

Variables	Frequency	Percentage
Ever heard of COVID-19		
Yes	1180	98.3
No	14	1.2
Not sure	6	0.5
*Source of information		
Through a friend	420	35.0
Through radio	782	65.2
Through television	725	60.4
Through health care workers	402	33.5
Through the internet	575	47.9
Through news paper	231	19
Others	170	14.2
Is it a new disease?		
Yes	1072	89.3
No	114	9.5
Don't know	14	1.2
Is it a deadly disease?		
Yes	1144	95.3
No	54	4.5
Don't know	2	2
COVID 19 is preventable		
Yes	1072	89.3
No	92	7.7
Don't know	36	3.0
Could list 3 countries presently ravaged by COVID-19	575	47.9

*multiple response

Table 3 shows that the common way of acquiring the disease known to the respondents include standing beside infected persons 1056 (88.0%) and breathing into same air with an infected person 975 (81.3%). Despite this, some respondents 523 (43.6) and 858 (71.5%) of respondents still hold the myth that COVID-19 could be transmitted through sexual intercourse and mosquito bites respectively. Fever 1141 (95.1%), sneezing or cold 1149 (95.8%) and cough 1188 (99.0%) were the common symptoms of COVID-19 known to our respondents. Majority (not less than 94.0%) knew each of all the various preventive measures against COVID-19. Only 455 (37.9%) think that they can get COVID-19, while 1171 (97.6%) were willing to enlighten someone on COVID-19 prevention, 766 (63.8%) said they could step down going to places of worship if asked to do so, while 738 (61.5%) said they were ready to willingly observe staying indoors or lockdown.

Table 3: Respondents knowledge and perception of risk to COVID-19 (n=1200)

Variables	Frequency	Percentage
*Known means of transmitting Corona virus		
By standing beside infected person	1056	88
By breathing into same air with an infected person	975	81.3
Through bad water	415	34.6
Through skin to skin contact	887	73.9
Through sexual intercourse	523	43.6
Through mosquito bite or contact with some animals	858	71.5
*Known symptoms of Corona virus		
Cough	1188	99
Fever	1141	95.1
Shortness of breath	796	66.3
Chest pains	878	73.2
Sneezing or cold	1149	95.8
Others specify	364	30.3
*Known means of preventing corona virus		
Frequent hand washing	1190	99.2
Putting on a face mask	1166	97.2
Rubbing sanitizer on your hands	1172	97.7
Covering mouth during sneezing and coughing	1179	98.3
Avoiding crowd	1182	98.5
Avoiding someone who just travelled to Nigeria from abroad	1176	98
Talking to others on the need to avoid corona virus	1133	94.4
Calling on a doctor if you have symptom of flu	1161	96.8
Drinking & putting lime, moringa, salt etc inside bathing water	523	43.6
Do you think you can get or catch corona virus		
Yes	455	37.9
No	654	54.5
Don't know	91	7.6
Are you willing to submit yourself to the health authority to be followed up for 14 days if you accidentally come in contact with an infected person.		
Yes	1159	96.6
No	23	1.9
Don't know	18	1.5
Are you willing to enlighten someone on COVID-19 prevention.		
Yes	1171	97.6
No	29	2.5
*Ready to observe the following willingly if directed by Governments		
If they asked you not to go to places of worship	766	63.8
If they direct you not to go to parties/occasions	1008	84.0
If they restrict you and asked you to avoiding crowds	962	80.2
Closing your school or streets	772	64.3
Asking you to stay indoors and not come out (lockdown)	738	61.5

*multiple response

Concerning actions and activities recently being performed by respondents, 1001 (83.4%) said they have been observing regular hand-washing, 725 (60.3%) have been using sanitizers, 806 (67.2%) have been covering their mouth during sneezing and coughing while only 525 (43.8%) have been putting on face mask (Table 4).

Respondents less than 20 years were 1.3 (1/0.77) times less likely to have good knowledge about transmission of COVID-19 compared to those who were above 19 years (OR 0.77, 95% CI 0.5757 - 1.0393), and this observation was found to be statistically significant (p = 0.043). Male respondents were 1.4 times more likely to have good knowledge about transmission of COVID-19 compared to those who were females ((OR 1.38, 95% CI 1.0842 - 1.7489) and this observation was found to be statistically significant (p = 0.004). Respondents with secondary education and below were 1.2 (1/0.84) times less likely to have good knowledge about transmission of COVID-19 compared to those who had tertiary education and above (OR 0.84, 95% CI 0.6654 - 1.0662) though this observation was found not to be statistically significant (p = 0.077). Thus, predictors of good knowledge about transmission of COVID-19 were above 19 years, being a male and having education level above secondary school.

Table 4: Risk assessment of COVID-19 among respondents (n=1200)

Actions	None/never in the last one week	Occasionally (like once)	Sometimes (2-4 times)	Regularly
Frequent hand washing	43(3.6)	92(7.7)	64(5.3)	1001(83.4)
Putting on a face mask	163(13.6)	351(29.3)	161(13.4)	525(43.8)
Rubbing sanitizer on your hands	132(11.0)	209(17.4)	136(11.3)	723(60.3)
Covering mouth during sneezing and coughing	73(6.1)	168(14.0)	153(12.8)	806(67.2)
Avoiding crowd	91(7.6)	220(18.3)	113(9.4)	776(64.7)
Avoiding someone who just travelled to Nigeria from abroad	160(13.3)	264(22.0)	39(3.3)	737(61.4)
Talking to others on the need to avoid corona virus	148(12.3)	256(21.3)	134(11.2)	662(55.2)

Respondents less than 20 years were 2.3 (1/0.43) times less likely to have good knowledge about symptoms of COVID-19 compared to those who were above 19 years (OR 0.43, 95% CI 0.2904 -0.6465), and this observation was found to be statistically significant (p = 0.001). Male respondents were 12 times more likely to have good knowledge about symptoms of COVID-19 compared to those who were females (OR 1.24, 95% CI 0.8429 - 1.8350), but this observation was found not to be statistically significant (p = 0.136). Respondents with secondary education and below were 1.8 (1/0.56) times less likely to have good knowledge of symptoms of COVID-19 compared to those who had tertiary education and above (OR 0.56, 95% CI 0.3834 - 0.8104) though this observation was found not to be statistically significant (p = 0.077). Thus, predictors of good knowledge about symptoms of COVID were respondents being above 19 years, being a male and having education level above secondary school.

Respondents less than 20 years were 1.9 (1/0.54) times less likely to have good knowledge about prevention and control of COVID-19 compared to those who were above 19 years (OR 0.54, 95% CI 0.3134 - 0.9358, and this observation was found to be statistically significant (p = 0.017). Male respondents were 1.3 (1/0.77) times less likely to have good knowledge of prevention and control of COVID-19 compared to those who were females (OR 0.77, 95% CI 0.4669 - 1.2781) though this observation was found not to be statistically significant (p 0.158). Respondents with secondary education and below were 3.3 (1/0.30) times less likely to have good knowledge about prevention and control of COVID-19 compared to those who had tertiary education and above (OR 0.30, 95% CI 0.1760 - 0.5259) and this observation was found to be statistically significant (p = 0.001). Thus, predictors of good knowledge about prevention and control of COVID-19 were respondents being above 19 years, being a female and having education level above secondary school.

Respondents less than 20 years were 1.5 (1/0.67) times less likely to have good perception about the prevention and control measures of COVID-19 compared to those who were above 19 years (OR 0.67, 95% CI 0.4929 - 0.9026), and this observation was found to be statistically significant (p = 0.004). Male respondents were about 1.1 (1/0.87) times likely to have good perception about the prevention and control measures about COVID-19 compared to those who were females (OR 0.87, 95% CI 0.6706 -1.1233) though this observation was found not to be statistically significant (p = 0.141). Respondents with secondary education and below were 1.4 (1/0.74) times less likely to have good perception about the prevention and control measures of COVID-19 compared to those

who had tertiary education and above (OR 0.74, 95% CI 0.5770 - 0.9585) and this observation was found to be statistically significant (p 0.011). Thus, predictors of good perception about the prevention and control measures of COVID-19 were respondents being above 19 years, being a female and having education level above secondary school.

Table 5: Associations and predictors of good knowledge and perception of COVID-19

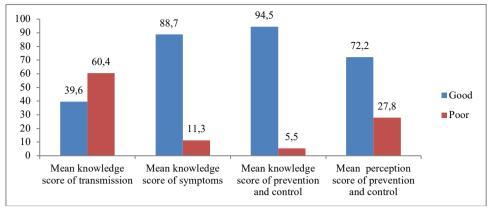| Variables	Bivariate analysis				Binary logistic regression			
	Good	Poor	X^2 value	P value	OR	95%CI		P value
						Lower	Upper	
Knowledge score of transmission					**Knowledge score of transmission**			
Age			2.914	0.088	0.77	0.5757	1.0393	0.043**
≤19 years	85(35.7)	153(64.3)						
≥20 years *	390(41.8)	543(58.2)						
Sex			6.897	0.009	1.38	1.0842	1.7489	0.004**
Male	204(45.3)	246(54.7)						
Female *	271(37.6)	450(62.4)						
Education status			2.037	0.154	0.84	0.6654	1.0662	0.077
Secondary and below	197(38.3)	318(61.7)						
Tertiary and above *	278(42.4)	378(57.6)						
Knowledge score of symptoms					**Knowledge score of symptoms**			
Age			17.520	0.001	0.43	0.2904	0.6465	0.001**
≤19 years	197(82.1)	43(17.9)						
≥20 years *	867(91.4)	82(8.6)						
Sex			1.211	0.271	1.24	0.8429	1.8350	0.136
Male	420(90.7)	43(9.3)						
Female *	644(99.7)	82(11.3)						
Education status			9.562	0.002	0.56	0,3834	0.8104	0.001**
Secondary and below	450(86.4)	71(13.6)						
Tertiary and above *	614(91.9)	54(8.1)						
Knowledge score of prevention					**Knowledge score of prevention**			
Age			4.963	0.026	0.54	0.3134	0.9358	0.017**
≤19 years	220(91.7)	20(8.3)						
≥20 years *	914(95.3)	45(4.7)						
Sex			1.014	0.314	0.77	0.4669	1.2781	0.158
Male	435(93.8)	29(6.2)						
Female *	699(95.1)	36(4.9)						
Educational status			20.062	0.001	0.30	0.1760	0.5259	0.001**
Secondary and below	481(91.3)	46(8.7)						
Tertiary and above *	653(97.2)	19(2.8)						
Perception score to prevention					**Perception score to prevention**			
Age			6.938	0.008	0.67	0.4929	0.9026	0.004**
≤19 years	157(65.4)	83(34.6)						
≥20 years *	709(73.9)	250(26.1)						
Sex			1.159	0.282	0.87	0.6706	1.1233	0.141
Male	327(70.5)	137(29.5)						
Female *	539(73.3)	196(26.7)						
Education status			5.249	0.022	0.74	0.5770	0.9585	0.011**
Secondary and below	363(68.9)	164(31.1)						
Tertiary and above *	503(74.9)	169(25.1)						

*Reference category   **Significant p value

Figure 1: Mean knowledge and perception scores of COVID-19

4. Discussions

Nigeria is still at the centre of the COVID-19 pandemic, with increasing number of cases being detected daily. While the government and other stakeholders are investing a lot of resources in educating the public about the disease and the need for them to adopt preventive practices, little or nothing exists in the literature about the risk communication, knowledge and community attitude to the disease. Understanding these, will help to know the gaps in knowledge, negative attitude and possible misconceptions, which could then be factored in designing appropriate messages and methods; hence this study.

The level of awareness about COVID-19 was very high among the respondents, and almost all of them had heard about COVID-19 before. This supports another study on COVID-19. (Geldsetzer, 2020) This should not be surprising with the publicity that has been given to the disease on both the conventional and news media, and rightfully so. In fact, the concern should be why 2% of the population has never heard about the disease with all that has happened. The major sources of information have been the radio, television and internet. While the important role of the radio and television in disseminating health information has been well noted and published, the emerging important role of the internet must be acknowledged and properly harnessed for health promotion and education, especially as it relates to COVID-19. This is particularly so, because it can be a tool for spreading misconceptions, myths and falsehoods because it is largely unregulated. (Geldsetzer, 2020) (Bhagavathula et. al., 2020)

The high level of awareness among respondents did not however translate to high comprehensive knowledge about the transmission of COVID-19. A very important part of the epidemiology of a disease that should be understood is the transmission, because it will inform measures that will be put in place to prevent its spread. It was however a thing of concern that only about two-fifths of the respondents had good comprehensive knowledge about this. This is similar to what was reported by Bhagavathula and others Bhagavathula et. al., (2020) in United Arab Emirates, but different from what was reported among residents of the United States (US), United Kingdom (UK) Geldsetzer, (2020) and China, Zhong et. al. (2020) where they reported very high comprehensive knowledge among their respondents. This difference may however be due to the different methodologies used, both of these studies were online surveys, with a tendency to attract those of relatively higher socio-economic status.

The widespread myths about the transmission of COVID-19 was also of concern in the present study, with a little more than 7 out of 10 of the respondents believing that it could be transmitted by mosquito bite, more than two-fifths believed it could be sexually transmitted and a third of them believed it could be spread by bad water. Misconceptions were also reported by Geldsetzer. (Geldsetzer, 2020) For improved effectiveness of the health education interventions for COVID-19, there will be a need to deliberately address these misconceptions.

It was encouraging that majority of the people had good comprehensive knowledge about the symptoms, prevention and control of COVID-19, however there were some gaps in the knowledge that should be of concern to the stakeholders. More than two-fifths still thought they could prevent COVID-19 by drinking and putting lime, moringa, and salt. inside bathing water. This misconception for example, has the potential to give a sense of false

security to people and hence they may not take the conventional preventive measures seriously. Furthermore, it also seems that the commonly known symptoms of COVID-19 are cough, fever and sneezing/cold. A third of the respondents and more than a quarter did not know about shortness of breath and chest pains respectively. Although other previous studies have generally reported good knowledge, there have been reports of misconceptions and knowledge gaps too. (Geldsetzer, 2020; Bhagavathula et. al., 2020) Similar trend of misconceptions was observed during the early days of SARS pandemic. (Jiao et. al., 2005) This finding further underscores the need to continually review the content and methods of the health education programmes.

The overall perception of the respondents towards the prevention and control of COVID-19 was good with 7 out of 10 respondents having a favourable/positive attitude towards it. This is similar to what has been reported by previous studies. Geldsetzer, (2020). (Zhong et. al., 2020) This notwithstanding, there are gaps also that must be addressed by any planned health education interventions. A major one is their perceived vulnerability to the disease, with less than two-fifths agreeing that they are at risk of COVID-19. This is important because perceived vulnerability would affect how preventive measures are embraced. Another area of concern is that nearly 40% of the respondents were not willing to stay indoors, close schools or streets and not go to places of worship even if directed by the government. These may be due to the poor comprehensive knowledge by many of the respondents about the transmission of COVID-19, as knowledge has been found to predict attitude towards COVID-19. (Zhong et. al., 2020)

The risk assessment showed that only the frequent hand washing has been embraced by majority of the respondents, other evidence-based preventive practices have not been widely adopted by the respondents. Only three-fifths of the respondents rubbed sanitizer regularly, avoided crowded areas and avoided recent travelers, especially to high risk locations regularly. More disturbingly, only two-fifths of the respondents wore masks regularly even in crowded areas. This finding is different from that in China where more than 9 out of 10 wore masks regularly when going out, and most of them avoided crowded places. (Zhong et. al., 2020) More, therefore needs to be done in educating Nigerians.

Those respondents who were younger than 20 years (adolescents) consistently had significantly poorer knowledge (about transmission, symptoms, prevention and control) and perception towards COVID-19. Similarly, the younger age group in China was also found to have significantly poorer knowledge about COVID-19. (Zhong et. al., 2020) This age group should therefore be targeted for educational intervention programmes for COVID-19. Understandably also, those with lower educational status were significantly associated with poorer knowledge and perception towards COVID-19. Stakeholders will therefore need to target this group by using appropriate media, language and presentation methods for them, to ensure no one is left behind in the fight against COVID-19. Gender was also consistently associated with the respondents' knowledge and perception in the present study, but while males were more likely to have good knowledge about transmission, symptoms, prevention and control, females were more likely to have favourable attitudes. This corroborates the finding in China where females were significantly more likely to have favourable attitude compared to males. This may be in support of the anecdotal evidence that suggests that males are more daring, while females are more believing and comply more easily than males. This should also be factored into the design of educational programmes for COVID-19 in Nigeria.

The strength of this study is that it is one of the earliest, if not the earliest study on the subject, and also because it is a community-based study using a random sample of adults at household level. This makes it more representative than the online surveys that are presently prevalent on the subject. The limitation of this study is that it was carried out in the southwestern part of Nigeria, and the findings may not be generalizable to the whole Nigeria.

Conclusion

Poor knowledge of COVID-10 transmission, but good knowledge of prevention and good perception was reported among communities in Southwestern Nigeria. Only few believed they could get the disease which unfortunately have not impressed their knowledge of prevention measures, and attitude to containment measures such as compliance with lockdown and stay at home order by Governments. This calls for mass enlightenment campaign and good communication messages directed at the general population which can encourage behavioural change that would assist to halt the transmission of COVID-19 and prevention of community spread..

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