

## Original Article

# Beliefs and Perceptions about COVID-19 among Students of a Higher Institution in South-western Nigeria

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## ABSTRACT

The on-going coronavirus disease outbreak is arguably one of the greatest public health challenges of our time. Being a novel disease discovered in December 2019, little is known about it. This study examines the beliefs and perception on coronavirus disease among students of an institution of higher learning in Southwest Nigeria. Two hundred and sixty (260) students were selected through a two-staged non-probability sampling method for the study. Data was collected using structured questionnaire which tested the general knowledge of respondents on the subject as well as their beliefs and perception about the disease. Even though 90.0% of the participants have heard of Coronavirus as a pathogen, their knowledge of the associated disease was fair on the average due to misconceived notions probably because information was sourced majorly from unconfirmed sources such as word of mouth from family members (56.5%), print media (56.2%), social media (51.2%), television (50.0%), and to a lesser extent from school (43.1%), health talk (42.7%), hospital (35.8%), over the radio (30.8%) as well as posters and billboards (24.2%). These misconceived notions, despite their level of education, include but not limited to claims that disease can be transmitted through mosquito bite (33.5%) and believing that it is a consequence of man's sin (48.1%). Some doubt its existence (28.8%) while a sizeable number believes they cannot be infected (44.2%) and peradventure if infected, prayer and fasting can cure it (44.2%). We therefore advocates for an intense public enlightenment campaign.

**Keywords:** Awareness, Beliefs, Coronavirus, COVID-19, Knowledge, Misconception

## INTRODUCTION

COVID-19 is an infectious disease caused by Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2).<sup>1</sup> It was first discovered in Wuhan, China in December 2019 and ever since, the disease has spread globally, being reported in almost all countries of the world hence recognised as a pandemic in March.<sup>2,3</sup> Common

symptoms of the disease include fever, cough, and shortness of breath.<sup>4</sup> Others may include muscle pain, sore throat, dry cough, diarrhoea, loss of smell, and abdominal pain.<sup>5,6,7</sup> However, while the bulk of cases present as mild symptoms, some present as moderate to severe disease such as pneumonia and multi-organ failure.<sup>2,8</sup> The mode of transmission of SARS CoV2 is via respiratory route when an individual comes in contact with respiratory

droplets of an infected person generated through the process of coughing and sneezing.<sup>9, 10</sup> It can also be contacted through touching a surface contaminated with respiratory droplets, fomites or body fluids of an infected and subsequently touching of the eyes, nose or mouth with such hands.<sup>9,10</sup> Individual is highly contagious when symptomatic though considerable transmission has also been reported in subclinical and asymptomatic cases.<sup>10</sup> Research has shown that SARS CoV2 can survive on wooden surfaces for up to 72 hours and remain viable for up to 24 hours on cardboard and 72 hours on steel and plastic.<sup>11</sup>

Incubation period is usually between two to fourteen days, with an average of five days.<sup>5, 12</sup> Infection can be prevented by hand washing, social distancing i.e. maintaining physical distance from others, especially from symptomatic persons, cough etiquette which include coughing and sneezing into disposable tissues or inner elbow, and avoid touching eyes, nose and mouth with hand.<sup>13,14</sup> Currently there is no vaccine or specific antiviral treatment for COVID-19 but it can be managed by treatment of symptoms, supportive care, isolation of cases and experimental drugs have been used with success.<sup>15</sup>

In January 2020, The World Health Organization (WHO) declared the Covid-2019 outbreak a Public Health Emergency of International Concern (PHEIC)<sup>16,17</sup> and on 11 March 2020 it was declared a pandemic.<sup>3</sup> Ever since the disease was identified in December 2019, the figure of cases globally has continued to rise. As of 30<sup>th</sup> of March 2020 over 700,000 coronavirus cases have been recorded globally with about 35,000 deaths.<sup>18</sup> In Nigeria, the index case was recorded on the 28<sup>th</sup> of February 2020 by an Italian who flew into the commercial nerve city of Lagos from Italy on 25 February.<sup>19</sup>

As of 30<sup>th</sup> of March 2020 over a hundred cases have been recorded in Nigeria.<sup>18</sup> There are also speculations that this figure may continue to rise if adequate measures are not put in place to contain the spread of the disease.<sup>20</sup> It therefore becomes imperative to assess the level of awareness, knowledge, beliefs and sources of information

of coronavirus among young people in institutions of higher learning that usually socialise in crowds and clusters in and around campuses which may expose them to the virus.

## MATERIALS AND METHODS

The study was conducted among students of the Adeyemi College of Education. The school is located in the heart of Ondo town in Ondo State, South West Nigeria. It offers academic and professional training courses that aim to qualify students for the award of the Nigeria Certificate in Education (NCE). A total of 260 students selected through a two-staged non-probability sampling methods participated in the study. These include cluster sampling method to identify locations around the school where students gather to socialise and convenience sampling method to select participants for the study.

Primary data was retrieved through administration of structured questionnaire which contained questions which tested the general knowledge of respondents on the subject as well as their beliefs and perception about the disease while seeking to find out their source of information. Informed consent was obtained from the participants while the purpose of the study was explained to them before the research was conducted. Data was analyzed with the Statistical Package for the Social Sciences (SPSS version 20) and presented in tables and charts.

## RESULTS

Socio-demographic characteristics of participants is as shown in Table 1, with 161 (61.9%) male and 99 (38.9%) female. One hundred and nineteen (45.8%) participants were within 21-25 years age bracket while 97(37.3%) were aged  $\leq 20$  years. Two hundred and twenty nine (88.1%) were single, 232 (89.2%) were Christians while the Yoruba ethnic background predominated as 167(60.4%) participants were from that ethnic background. Igbo participants were 68 (26.2%) while

**Table 1: Socio -demographic factors of Participants**

Demographic Data	Frequency (%)
<b>Sex</b>	
Male	161 (61.9)
Female	99 (38.1)
<b>Total</b>	<b>260(100.0)</b>
<b>Age</b>	
≤ 20	97 (37.3)
21-25	119 (45.8)
25-30	32 (12.3)
31-35	6(2.3)
<b>Total</b>	<b>260 (100.0)</b>
<b>Marital status</b>	
Single	229 (88.1)
Married	31 (11.9)
<b>Total</b>	<b>260(100.0)</b>
<b>Religion</b>	
Christianity	232 (89.2)
Islam	28 (10.8)
<b>Total</b>	<b>260(100.0)</b>
<b>Ethnic group</b>	
Yoruba	157(60.4)
Igbo	68(26.2)
Hausa	13(5.0)
Others	22(8.5)
<b>Total</b>	<b>260(100.0)</b>

Researchers' survey 2020

**Table 2: Awareness and Knowledge of Coronavirus among students of Adeyemi College of Education Ondo-city, Nigeria**

Awareness and Knowledge	Yes (%)	No(%)
Have you heard of coronavirus before	234 (90.0)	26(10.0)
Coronavirus is transmitted from animals to man	159 (61.2)	101(38.8)
A healthy looking person can have coronavirus	171 (65.8)	89(34.2)
Coronavirus is a respiratory disease	184(70.8)	76(29.2)
Coronavirus is an air borne disease	189 (72.7)	71(27.3)
Corona virus currently has no cure	202(77.7)	58(22.3)
Coronavirus can lead to death	213 (81.9)	47(18.1)

Researchers' survey 2020

Hausa represented 13 (5.0%) of the sampled population. Participants awareness and knowledge on coronavirus is as depicted in Table 2. Majority (90.0%) of the participants in the study have heard about coronavirus prior to the survey out of which a total of 159(61.2%) knew that coronavirus is transmitted from animals to man while 171( 65.8%)of the participants knew that a healthy looking person can be infected with coronavirus. one hundred and eighty-four(70.8%) participants knew that coronavirus is a respiratory disease while 189(72.7%) believes coronavirus is an air borne disease. In addition, 202(77.7%) knew that there is presently no cure for coronavirus disease while 213 (81.9%) knew that coronavirus infection can result into death of the infected. Shown in table 3 is participants knowledge on the mode of transmission of the disease and it was revealed that majority of the participants knew the disease can be transmitted through close contact with an infected person (95.8%), inhaling the respiratory droplets generated by the infected (75.8%), or the surface contaminated by this droplets is touched (49.2%) such as tables, desks and other surfaces. Likewise, some participants believe other means of transmission of the virus is possible, among which are eating food contaminated with faeces and urine of infected animals (66.5%) and drinking water contaminated with

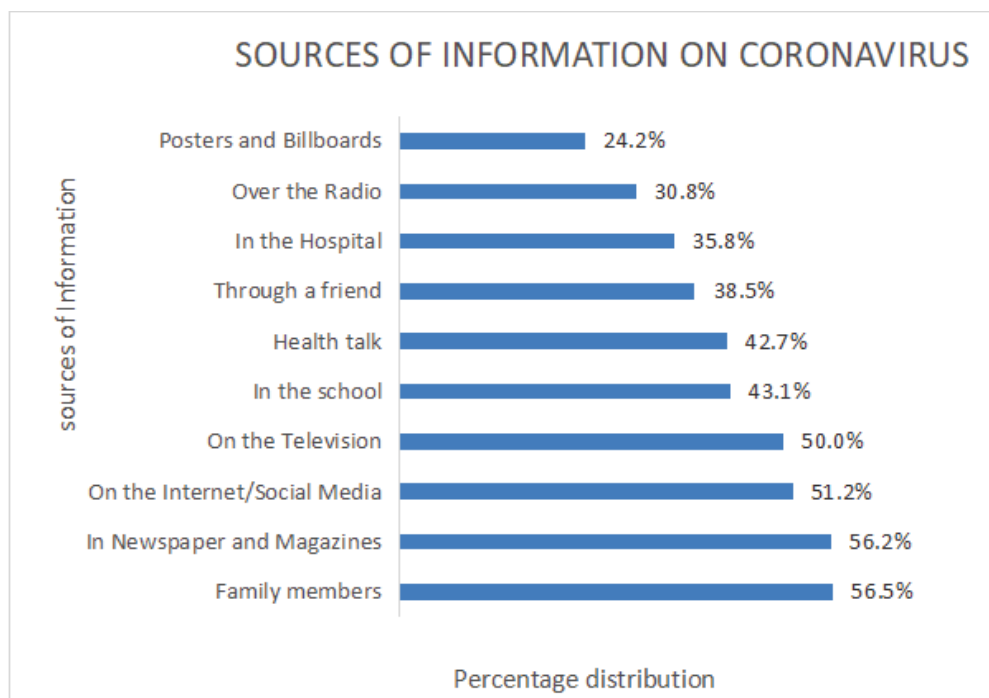
faeces and urine of an infected person (54.6%). Table 4 depicts the common symptoms of the disease. sneezing and coughing as symptom was mentioned by 200(76.9%) participants. other symptoms were fever 190 (73.1%), Runny nose 193 (74.2%), sore throat 164 (63.1%), rashes 163 (62.7%), bleeding from nose, ear, eyes and gum 149 (57.3%), cold and shivering 143 (55.0%), loss of consciousness 124 (47.7%), breathing difficulties 120 (46.2%), passage of watery stool 107 (41.2%) and kidney failure 100 (38.5%).

Participants' responses on the preventive measures against infection were enumerated

**Table 3:** Participant's perception on mode of transmission of Coronavirus

How is Coronavirus transmitted	Yes(%)	No(%)
Through close contact with an infected an person	249(95.8)	11(4.2)
Inhaling respiratory droplets from an infected person	197(75.8)	63(24.2)
Touching surfaces contaminated by respiratory droplets from an infected person such as table, desks and other surfaces	128(49.2)	132(50.8)
Bites from insects such as mosquito	173(66.5)	87(33.5)
Eating food contaminated with faeces and urine of infected animals	166(63.8)	94(36.2)
Drinking water contaminated with faeces and urine of infected animals	142(54.6)	118(45.4)
Mode of transmission is not known	15(8.3)	166(91.7)

Researchers' survey 2020



**Figure 1:** Bar Chart showing sources of information on coronavirus among Students of Adeyemi College of Education, Ondo-city, Nigeria.

**Table 4:** Common Symptoms of Coronavirus infection known to participants

Common Symptoms of Coronavirus infection	Yes (%)	No (%)
Fever	190 (73.1)	70(26.9)
Sneezing and Cough	200 (76.9)	60(23.1)
Runny nose	193 (74.2)	67(25.8)
Sore throat	164(63.1)	96(36.9)
Breathing difficulties	120(46.2)	140(53.8)
Passage of watery stool	107(41.2)	153(58.8)
Kidney failure	100(38.5)	160(61.5)
Rashes	163(62.7)	97(37.3)
Loss of consciousness	124(47.7)	136(52.3)
Bleeding from nose, ear, eyes and gum	149(57.3)	111(42.7)
Cold and shivering	143(55.0)	117(45.0)

*Researchers' survey 2020***Table 5:** Preventive Measures to curb disease

Coronavirus Preventive Measures	Yes (%)	No (%)
Regular hand washing	207(79.6)	53(20.4)
Use alcohol hand sanitizer	139(53.5)	121(46.5)
Covering mouth and nose when coughing and sneezing	168(64.6)	92(35.4)
Thorough cooking of meat and eggs	101(38.8)	159(61.2)
Avoiding close contact with people who are sick	138(53.1)	122(46.9)
Dispose and don't re-use tissues paper	144(55.4)	116(44.6)
Avoid touching your eyes, nose, and mouth	129(49.6)	131(50.4)
Clean and disinfect frequently touched objects and surfaces	124(47.7)	136(52.3)
Avoid crowded places	134(51.5)	126(48.5)
Take lots of water	126(48.5)	134(51.5)
Take lots of fruits and vegetables	130(50.0)	130(50.0)
Bath with salt water twice a day	92(35.4)	168(64.6)

*Researchers' survey 2020***Table 6:** Participants' Beliefs on coronavirus aetiology

Beliefs on Coronavirus	Yes (%)	No (%)
Coronavirus is an act of God	95(36.5)	165(63.5)
Coronavirus is as a result of sin of man	125(48.1)	135(51.9)
Coronavirus is a sign of the end time	132(50.8)	128(49.2)
Coronavirus is a white man disease	88(33.8)	172(66.2)
I don't believe coronavirus exist	75(28.8)	185(71.2)
I can never be infected with the disease	115(44.2)	145(55.8)
Corona virus can be cured through prayers and fasting	101(38.8)	159(61.2)

*Researchers' survey 2020*

**Table 7:** Grading participants level of Knowledge about COVID-19

Knowledge score on coronavirus	Frequency n(%)	interpretation
≤49%	17(6.5%)	poor knowledge
50-67%	164(63.1%)	Fair Knowledge
≥70%	79(30.4%)	Good knowledge
<b>Total</b>	<b>260(100.0%)</b>	

in table 5. These measures were regular hand washing 207(79.6%), covering mouth and nose when coughing and sneezing 168(64.6%), disposing and not re-using tissue papers 144 (55.4%), the use of alcohol hand rub or sanitizer 139(53.5%), avoiding close contact with people who are sick 138 (53.1%), avoiding crowded places 134(51.5%), taking lot of fruits and vegetables 130(50.0%), avoiding touching of eyes , nose and mouth 129 (49.6%), taking lots of water 126 (48.5%), frequent cleaning and disinfecting hard surfaces of objects 124 (47.7%).

In table 6, participants' belief about the virus and the disease it causes was examined. A small cohort of participants doubt the existence of the virus (75; 28.8%). Some who do believe it exists are of the opinion that it is a sign of the end time (132; 50.8%), an act of God (95; 36.5%), a white man disease (88; 33.8%) while (125;48.1%) believed that coronavirus is as a consequence of the sin of mankind. Some participants believed that they can never be infected with coronavirus (115; 44.2%), others were of the opinion that the disease can be cured through prayer and fasting (101;38.8%).

Figure 1 shows the participants' sources of information on coronavirus. The most commonly accessed source of information on coronavirus in the study was the family (56.5%). This was followed closely by newspaper and magazine (51.2%) and then internet and social media (51.2%), television (50.0%), school (43.1%), health talk (42.7%), through friends (38.5%) hospital (35.8%), over the radio (30.8%) and posters and billboards (24.2%).

Table 7 shows the average knowledge of respondents about the disease. Questions were asked to test respondents awareness of the disease and knowledge about its mode of transmission, clinical features and preventive measures. How many correct answers participants give to these questions provides an indication of how much they know about the coronavirus. A grade of  $\geq 70\%$  was labelled as good knowledge, meaning

respondents answered  $\geq 70\%$  of the questions asked correctly. A score of 50-69% was termed fair Knowledge while 49% and below was referred to as poor knowledge.

## DISCUSSION

This study accessed awareness, knowledge, beliefs and sources of information of coronavirus among students of an institution of higher learning in southwest Nigeria. Result from the study showed that almost all the participants in the study have heard about coronavirus as a pathogen as at the time of the survey. This may be due to the global attention the disease has attracted as a result of the wide and rapid spread involving many continents and resultant deaths recorded. Ever since it was first reported in December 2019, the media has gone frenzy with news about its contagious nature, the means of spread, its clinical features, how it can be recognized and how many nations of the world have been infected. People have access to loads of these information online even though the bulk of it is misleading. In disease outbreaks of the magnitude that's being witnessed with COVID 19, the risk of infodemic is high as large volume of information about the disease is available, sometimes ambiguous, uncertain, low-quality, misleading or outright falsehood.<sup>21,22</sup> With social media, this phenomenon is amplified, spreading faster and reaching further. A survey carried out by the Reuters Institute for the Study of Journalism at the University of Oxford revealed that one of every three individual read atleast one misleading information on

COVID 19 on social media.<sup>23</sup>

A typical example of peddled falsehood in the media is that SARS COV2 is not a natural virus but a bioweapon produced in the laboratory to wreak havoc to human race. Likewise in this part of the world is the erroneous belief that the high temperature of the tropical sun is protective against the virus hence the low incidence and case fatality recorded.

The fair knowledge on the subject demonstrated by participants may mirror the level of education as participants were students of a tertiary institution of learning. Education has been found to positively influence access to information, its understanding, its internalization and utilization which will in turn influence their health seeking behavior.<sup>24</sup> Despite this high level of educational status, many erroneous beliefs and misconceptions were noted in the responses stemming basically from religious inclinations and the source of health information. For example, it has been documented that it is hard to isolate people's religious beliefs from their health seeking behaviour. Researchers have argued that the influence of religion over health outcomes cannot be underrated.<sup>25</sup>

If the educated can be this misinformed about the novel disease, the less educated or uneducated are likely to be devoid of accurate information about the disease. Information (and misinformation) is noted to be crucial in shaping how people understand and respond to a public health crisis.<sup>26</sup> It is therefore critically important that people have access to accurate news and information that can help them understand the coronavirus crisis, what they can do to protect themselves and those around them. Hence it is imperative for all stakeholders, health personnel, political leaders, traditional leaders to launch an aggressive information dissemination, health education campaign to inform and educate the masses ahead of the wide spreading misinformation they have access to on the social media.

The closest knit to any individual and the first source of information, behavioral pattern and habits is the family. It is within the family that an individual learns ideologies that influence his life outside the immediate family and within

the community<sup>27</sup> This perhaps is the reason why family was the highest source of information on the subject of coronaviruses and its associated disease. This was followed closely by print media (newspaper and magazines), internet and social media, broadcast media (television and radio), school, health talk, through friends, hospital, as well as posters and billboards. Information retrieved from the family may not be totally adequate hence certain misconceptions revealed in the participants knowledge of the disease. The SARS CoV 2 pandemic is a recent entity, with many properties of the virus not known, its mode of transmission speculates, pathogenesis of disease inferred from the closely related SARS CoV and MERS-CoV and clinical features updated as more cases are present and treatment modalities and guidelines upgraded as consecutive cases are managed with success. This could influence the level of knowledge the participants displayed as reported in this survey.<sup>28</sup>

In the face of lack of effective antiviral to treat and vaccine to protect against COVID19, the disease can only be curtailed, transmission reduced in a bid to flatten the epidemic curve. This can only be achieved when the population understands the situation at hand and react accordingly. To this end, the most important determinant is how knowledgeable people are about coronavirus. This will influence how they would respond to the pandemic. Access to accurate, relevant, reliable, and trusted information is hence a lifesaver, as important as therapeutic options in the midst of this pandemic.

## CONCLUSION AND RECOMMENDATIONS

The study accessed awareness, knowledge, beliefs and sources of information of coronavirus among students of an institution of higher learning in southwest Nigeria. The study concluded that almost all the participants were aware of coronavirus disease and that participants in the study have a fair knowledge about the disease being fraught with certain misconceptions. The highest source of information of coronavirus among the participants is the family which

was followed closely by media in the form of conventional and social media. reliance on these sources of information may misinform the populace hence more likely to hold false beliefs about the pandemic and the coronavirus The study recommends that this level of awareness be sustained and improved through information about the disease in the studied and indeed the general population so as to ensure a sustained control of the disease.

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