ISSN: 2755-0125

Journal of Virology Research & Reports

SCIENTIFIC Research and Community

Research Article

Open Access

# Investigation of the Level of Public Awareness Outcome of COVID -19 Pandemic among Nigerians

**Azuonwu Obioma[1]*, Ihua Nnenna[1], Ahiakwo Christian[2] and Vetty Agala[3]**

[1]Department of Medical Laboratory Science, Medical Bacteriology / Virology / Parasitology Unit, Rivers State University, Nkpolu - Oroworukwo, Port Harcourt, Rivers State, Nigeria

[2]Department of Animal and Environmental Biology, Rivers State University, Nkpolu - Oroworukwo, Port Harcourt, Rivers State, Nigeria

[3]Department of Community Medicine, University of Port Harcourt Teaching Hospital Choba, Port Harcourt, Rivers State, Nigeria

**ABSTRACT**

The COVID-19 pandemic has been considered to be very phenomenal as the period is marked with some unimaginable Health crises across the globe. COVID-19 has been a global Public Health threat widely affecting the entire populace irrespective of the class and sex across the region of the world. This has attracted lots of sensitization and interventions from the appropriate approved Health agencies such as World Health Organization, Nigeria Centre for Disease Control and others to better inform the general public about the nature and mode of operandi of the pandemic virus in the absence of an accepted therapeutics and vaccines as at the time of this study. However, the media is flooded with information; not excluding some misconceptions about COVID-19 pandemic. These conflicting information are taken by the general public without reservation, hence, the study investigated the level of awareness of the public about COVID-19 virus, in relation to general knowledge, signs/symptoms, associated risk factors, transmission/spread and misconceptions. The study was delimited to Nigerians who had access to the internet. The study instrument was a self-structured questionnaire, validated by experts in this area. A Cronbach Alpha revealed a reliability index of 0.92. The online descriptive survey on the awareness level of the public, utilized Google form technique to create the questionnaire which was sent through emails and links to various social media and private platforms. Five research questions and hypothesis guided the study. A combination of primary and secondary data sources aided the study. Modified Likert scale (four points) was used and a criterion mean of 2.5 was used as the cut-off for either aware/agree (>2.5) or not aware/disagree (<2.5). Statistical Package for Social Science version 21 was used to estimate descriptive and inferential statistics at 5% alpha level for deduction. A response rate of 99.1% was obtained and a sample size of 347 was used. The study outcome suggests many interesting phenomena concerning public awareness about the COVID-19 pandemic. There is a high level of awareness of COVID-19. However, there is a need for the government and media platforms to curtail the spread of fake news and correct the misconceptions about COVID-19 among her citizens in the region.

***Corresponding author**

Azuonwu Obioma, Department of Medical Laboratory Science, Medical Bacteriology/Virology/Parasitology Unit, Rivers State University, Nkpolu - Oroworukwo, Port Harcourt, Rivers State, Nigeria, Tel: +2348035519688, E-mail: bimajacobs@yahoo.co.uk

**Received:** August 09, 2020; **Accepted:** August 20, 2020; **Published:** August 25, 2020

**Keywords:** Awareness, COVID-19, Pandemic, Nigeria, Fake News, Poor Management, Community Engagement.

## Introduction

Increasingly, a new and collectively described as novel Coronavirus disease (COVID-19) pandemic has been spreading across the globe since December 2019. Many strategies are being taken by governments and stakeholders around the world, including the Nigeria government in an attempt to control the spread of the novel Coronavirus disease. Measures like social distancing, isolation/quarantine, hand hygiene, to mention but a few have been encouraged as the means to curb the spread of COVID-19 virus saga. Arguably, this measure may perhaps be effective in flattening the epidemiological curve of the trend and pattern of the infection, as it was observed for SARS in 2003 [1]. The federal government of Nigeria constituted a COVID-19 task force charged with the sole responsibility of every COVID-19 leadership concerns. Also, various state governments did similar thing including the local government areas so as to extend the impact of intervention to the grassroot. The three tiers of government in Nigeria were fully involved in crisis management and fight against COVID-19. The Public Health and the government expected public compliance with the rules provided but, that was not the case. However, law enforcement agencies had to support the trend to ensure maximum compliance geared towards controlling the spread especially in our remote communities with lack of visible and palpable functioning Health care facilities and requisite expected man-powers to handle emergency cases of sporadic infectious epidemic outbreaks [1-3]. Furthermore, some safety tips were published and citizens' compliance was needed to help combat the spread of the infection. Also, during the first index cases episode of COVID-19 pandemic, fake information and invalidated crude practices were numerous especially on the different platforms of social media, despite the critical and sustainable warning by the Nigeria Centre for Disease Control (NCDC) and the World Health Organization (WHO) for citizens to disregard such an invalidated tips from unconfirmed bodies or group of individuals. Several individuals became susceptible to this scrupulous information

and followed such measures which seemed detrimental to their Health and their entire families. Such measures were: abuse of alcohol, traditional medicine, and use of antibiotics, vitamin C and chloroquine to prevent COVID-19. In addition, some persons have actually linked COVID-19 pandemic to 5G network while others have continued to blame China that they are responsible. Besides, COVID-19 was also attributed to fight to be emanating from the world power/economy with a political undertone. There were a lot of misconceptions that are lacking empirical evidence to back up the assumptions of these myths. Therefore, it became very critical and imperative to assess the general public awareness level with respect to COVID-19 pandemic, it is therefore, strongly believed that data generated from this study would firmly underpin the need for government and other partnering Health agencies in the region to plan adequately towards controlling the virus, and also provide in good time the need of the people, even as they would also work towards reinforcing the sustainable functioning of our Health care facilities across the country, especially doing more in the hinterlands with more vulnerable and susceptible handicapped group, even living in the midst of lack of health education, hunger , poverty and non - functional health care system [4].

## Materials and Methods

This descriptive survey was carried out in Nigeria. The study investigated the awareness level of the public with regards to the COVID-19 pandemic saga in Nigeria. Data were gathered through an online survey using Google form and responses on COVID-19 awareness including the demographics of the respondents. The self-structured questionnaire was titled "Awareness of COVID-19 Pandemic in Nigeria Survey (ACPNS)". Modified four-point Likert scale was used to ascertain awareness level of Extremely Aware/Strongly Agree=4points, Aware/Agree=3points, Not Aware/Disagree=2ponts and Extremely Not Aware/Strongly Disagree=1point. This gave a criterion mean of 2.5 (4+3+2+1/4). The decision of the awareness for the research questions was based on the criterion mean; Mean response greater from 2.5 and above was considered aware/agree while less than 2.5 indicate Not Aware/Disagree. The items of the questionnaire were on Awareness-General Knowledge (10items), Signs/Symptoms of COVID19 (5items), COVID-19 Associated Risk Factors (10items), COVID 19 Transmission/Spread (14items) and Misconceptions about Covid-19 (9items). The study instrument was validated by experts and Cronbach Alpha was used to determine the reliability (r=0.92). Both primary and secondary data sources were utilized. Three hundred and forty-seven (347) people gave consents and participated. Charts displayed responses distribution in frequency and percentage on the response section of the Google form. Furthermore, data were transferred to Microsoft Excel and exported to SPSS version 21 for further analysis and p-value set at 0.05 for significance. This study was limited to internet users as the data collection was strictly online-based due to some factors such as total lockdown; people were not accessible as of the time of the study for an offline data collection. This, however, was an advantage as it helped the turnaround time with swift turnover.

## Results

The impacts of COVID-19 pandemic have been felt by most individuals and this has kept the public in a state of chaos, wondering the cause and the fate of all in the nearest future which is the post-COVID-19 experience. However, ample information gathered within the COVID-19 era will help in the management as well as the preparedness to this effect. Also, an upsurge in the campaigns and awareness of COVID-19 has called for an evaluation of the process and this was reported in this study. Results from the online survey showed a 99.1% response rate with a total of 347 respondents grouped as males and females. The study participants were mainly educated 309 (89.0%). The male category comprised 143 (41.2%) and female category comprised 204 (58.8%) of the overall population. The objectives of the study were actualized using the research questions and hypothesis as seen below.

**Research Question 1: What is the level of awareness – general knowledge of the public about COVID-19 in Nigeria?**

General knowledge of the awareness level of the public about COVID-19 pandemic in Nigeria as opined by the respondents in this study revealed a good level of awareness as measured by this construct. A grand mean of 3.43±0.343 was obtained for male and 3.39±0.40 for female respondents. All the items on the questionnaire regarding general knowledge about COVID-19 pandemic demonstrated optimum awareness levels of the populace notwithstanding the gender. The detailed report is presented in table 1.

**Table 1: Mean and Standard Deviation of Awareness-General Knowledge**

| S/N | Item Description | Male (N=143) | | Female (N=204) | |
|---|---|---|---|---|---|
| | | Mean | SD | Mean | SD |
| **Awareness-General Knowledge** | | | | | |
| 1 | COVID-19 is a type of coronavirus | 3.41 | .799 | 3.26 | .870 |
| 2 | COVID-19 is a new viral disease currently with the most devastating effects globally | 3.76 | .459 | 3.78 | .471 |
| 3 | COVID-19 was discovered in Wuhan China in December 2019 | 3.55 | .602 | 3.52 | .631 |
| 4 | Nigeria recorded her index (first) case in February 2020 | 3.38 | .638 | 3.37 | .634 |
| 5 | WHO declared COVID-19 a pandemic on 11th March with about 114 countries affected | 3.38 | .579 | 3.39 | .555 |
| 6 | COVID-19 mortality rate is 3-4% according to WHO | 3.15 | .692 | 2.98 | .729 |
| 7 | COVID-19 infection is a highly contagious disease | 3.57 | .600 | 3.56 | .613 |
| 8 | Have seen, heard and read lots of things about COVID-19 | 3.39 | .570 | 3.33 | .617 |
| 9 | Information related to COVID-19 is mixed up with lots of fake news | 3.38 | .649 | 3.43 | .651 |

| | | | | | |
|---|---|---|---|---|---|
| 10 | Myth busters and authentic information are the antidotes to fake news hence, required frequently by WHO, CDC, NCDC, etc. to combat all fake information | 3.29 | .678 | 3.34 | .650 |
| | Total | 34.259 | 3.4247 | 33.971 | 4.0159 |
| | Grand Mean | 3.426 | .3425 | 3.397 | .4016 |

**Source:** Field Survey (2020). Extremely Aware=4, Aware=3, Not Aware=2, Extremely Not Aware=1. Mean: ≥2.5=Aware; <2.5=Not Aware

**Research Question 2: What is the level of awareness of the public about Signs/Symptoms of COVID-19 in Nigeria?**
The study further investigated the awareness level of the public as pertains likely signs and symptoms of COVID-19. This study reported that the respondents proved a degree of being aware of the signs/symptoms of COVID-19 as outlined in the study. The perceptions of the male and female respondents showed awareness based on the criterion mean of 2.5, the study presents grand mean scores of 2.88±0.46 and 2.81±0.51 respectively. Hence, the decision of the public being aware of the signs/symptoms of COVID-19 was made.

**Table 2: Signs/Symptoms of COVID 19**

| S/N | Item Description | Male (N=143) | | Female (N=204) | |
|---|---|---|---|---|---|
| | | Mean | SD | Mean | SD |
| **Signs/Symptoms of COVID 19** | | | | | |
| 11 | Fever is the only major symptom of COVID-19 | 2.15 | .888 | 2.03 | .800 |
| 12 | Dry Cough alone is a pointer to COVID-19 | 2.36 | .908 | 2.34 | .920 |
| 13 | Difficulty/Shortness of Breath is the main clinical symptoms of COVID-19 | 2.99 | .796 | 2.90 | .879 |
| 14 | Key clinical symptoms of COVID-19 include; fever, dry cough, and shortness of breath | 3.67 | .500 | 3.63 | .649 |
| 15 | COVID-19 share similar symptoms with flu (common cold), stuffy nose, runny nose | 3.23 | .625 | 3.17 | .766 |
| | Total | 14.40 | 2.323 | 14.07 | 2.543 |
| | Grand Mean | 2.880 | .4646 | 2.814 | .5087 |

**Source:** Field Survey (2020). Extremely Aware=4, Aware=3, Not Aware=2, Extremely Not Aware=1. Mean: ≥2.5=Aware; <2.5=Not Aware

**Research Question 3: What is the level of awareness of the public about Risk factors associated with COVID-19?**
From the report of the World Health Organisation, some risk factors are associated with COVID-19 which makes management of COVID-19 cases complicated and difficult. Many risk factors have been implicated, however, this study considered some and the outcome of the survey suggests that the public are sentient of the risk factors. Generally, the study recorded a mean response score of 2.96±0.299 and 3.02±0.35 for male and female grand means. Nonetheless, the study marks that the subjects not being aware that COVID-19 affects more males than females showed 1.97±0.75 and 2.14±0.81 as corresponding mean response scores for males and females. Table 3 shows the detailed result.

**Table 3: Mean and Standard Deviation of the Awareness of the Public about COVID-19-Associated Risk Factors**

| S/N | Item Description | Male (N=143) | | Female (N=204) | |
|---|---|---|---|---|---|
| | | Mean | Standard Deviation | Mean | Standard Deviation |
| **COVID 19 Associated Risk Factors** | | | | | |
| 16 | COVID-19 affects more males than females | 1.972 | .7501 | 2.142 | .8091 |
| 17 | COVID-19 is for rich/wealthy people including politician | 1.61 | .639 | 1.78 | .814 |
| 18 | People of all ages can become infected with the COVID-19 | 3.43 | .656 | 3.51 | .662 |
| 19 | COVID-19 affects all racial/ethnic groups | 3.62 | .591 | 3.51 | .719 |
| 20 | Most people who are infected with the COVID-19 die from it | 2.46 | 1.005 | 2.75 | .849 |
| 21 | People with a history of respiratory disease are at risk | 3.33 | .748 | 3.39 | .724 |
| 22 | Individuals with Diabetes, hypertension and other chronic diseases are at risk to COVID-19 | 3.60 | .607 | 3.58 | .642 |

| | | | | | |
|---|---|---|---|---|---|
| 23 | Low immunity (compromised/suppressed) is an issue with COVID-19 | 3.66 | .532 | 3.56 | .637 |
| 24 | High alcohol intake can make one prone to COVID-19 due to low immunity | 2.95 | .834 | 3.00 | .791 |
| | Total | 26.636 | 2.6947 | 27.230 | 3.1888 |
| | Grand Mean | 2.9595 | .29940 | 3.0256 | .35430 |

**Source:** Field Survey (2020). Strongly Agree=4, Agree=3, Disagree=2, Strongly Disagree=1. Mean: ≥2.5=Agreement; <2.5=Disagreed

**Research Question 4: What is the level of awareness of the public about Transmission/Spread of COVID-19 in Nigeria?**
In addition, table 4 represents the Mean and Standard Deviation scores of the responses on the Awareness of the Public about Transmission/Spread of COVID-19. This construct was marked with varying opinions as discussed by the respondents. The report from this study showed the highest awareness of transmission in "COVID-19 is transmitted via respiratory droplets" as 3.64±0.59 and 3.67±0.57 were obtained for the males and females in that order. However, the response of the subjects did not support "stigmatization as the best approach to avoid contracting COVID-19" as evident in the mean ± standard deviation of 1.83±0.86 and 1.96±0.94 for males and females correspondingly. Generally, considering the grand mean scores of 2.99±0.29 and 3.03±0.33 for male and female perceptions respectively; this suggests a good level of awareness of the modes of transmission and spread of COVID-19.

**Table 4: Mean and Standard Deviation of the Awareness of the Public about Transmission/Spread of COVID 19**

| S/N | Item Description | Male (N=143) | | Female (N=204) | |
|---|---|---|---|---|---|
| | | Mean | Standard Deviation | Mean | Standard Deviation |
| **COVID 19 Transmission/Spread** | | | | | |
| 25 | Covid-19 is airborne | 2.62 | .887 | 2.88 | .876 |
| 26 | Covid-19 is transmitted via respiratory droplets | 3.64 | .598 | 3.67 | .566 |
| 27 | Frequent use of face mask and sanitizer will curb the spread | 3.57 | .538 | 3.47 | .607 |
| 28 | The virus spreads through multiple modes, not just one mode | 3.44 | .624 | 3.36 | .632 |
| 29 | Domestic pets can transmit the virus (zoonosis) | 2.61 | .788 | 2.61 | .777 |
| 30 | Regular hand washing/sanitizing could halt the spread | 3.48 | .579 | 3.45 | .660 |
| 31 | Quarantine/isolation are useful to impede the spread | 3.65 | .493 | 3.65 | .554 |
| 32 | Social distancing is crucial to stop the spread | 3.63 | .499 | 3.62 | .534 |
| 33 | Stigmatization is the best approach to avoid contracting COVID-19 | 1.83 | .864 | 1.96 | .941 |
| 34 | Recovered patients should not mingle in the community to avoid the spread | 2.03 | .809 | 2.23 | .871 |
| 35 | Recovered patients should not have intercourse to avoid the spread | 1.96 | .795 | 2.17 | .849 |
| 36 | The virus can be spread via faeces and semen | 2.34 | .926 | 2.42 | .853 |
| 37 | Kissing, hugging and caressing can spread the virus rapidly | 3.45 | .636 | 3.38 | .658 |
| 38 | Inter-state travel can increase the spread | 3.60 | .505 | 3.59 | .575 |
| | Total | 41.846 | 4.0164 | 42.451 | 4.678 |
| | Grand Mean | 2.989 | .2868 | 3.032 | .334 |

**Source:** Field Survey (2020). Strongly Agree=4, Agree=3, Disagree=2, Strongly Disagree=1. Mean: ≥2.5=Agreement; <2.5=Disagreed

**Research Question 5: What are some of the misconceptions of the public about COVID-19 in Nigeria?**

Table 5 presents the report of the field survey showing Mean and Standard Deviation of the perceptions of the Public about misconceptions of the public about COVID-19. The outcome yielded grand mean scores of 2.14±0.57 from the perspective of the male respondents and 2.31±0.62 for females. From the set criterion mean of 2.5, the outcome of the aggregate means put forward that the respondents which represent the public disagreed to the misconceptions stated in this study. On a specific note, the respondents perceived that "COVID-19 is man-made" according to the response mean scores of males 2.84±0.87 and females 2.71±0.95. Other details are seen in table 5.

**Table 5: Mean and Standard Deviation of the perceptions of the Public about misconceptions of the public about COVID-19**

| S/N | Item Description | Male (N=143) | | Female (N=204) | |
|---|---|---|---|---|---|
| | | Mean | Standard Deviation | Mean | Standard Deviation |
| **Misconceptions About COVID-19** | | | | | |
| 40 | COVID-19 is not real | 1.46 | .748 | 1.60 | .833 |
| 41 | Hot water prevents Covid-19 | 2.14 | .869 | 2.24 | .879 |
| 42 | COVID-19 is caused by 5G | 1.50 | .659 | 1.81 | .778 |
| 43 | COVID-19 is political | 1.84 | .853 | 2.08 | .906 |
| 44 | COVID-19 is made in China, targeted at other nations/economies | 2.44 | .885 | 2.65 | .959 |
| 45 | China has the sole secret to COVID-19 solution | 2.38 | .918 | 2.64 | .917 |
| 46 | COVID-19 is a mere fight for World power | 2.32 | .853 | 2.49 | .918 |
| 47 | COVID-19 is man-made | 2.84 | .869 | 2.71 | .952 |
| 48 | COVID-19 is a biological weapon to reduce the population | 2.40 | .881 | 2.55 | .922 |
| | Total | 19.322 | 5.1589 | 20.770 | 5.5665 |
| | Grand Mean | 2.1466 | .57320 | 2.3077 | .61850 |

**Source:** Field Survey (2020). Strongly Agree=4, Agree=3, Disagree=2, Strongly Disagree=1. Mean: ≥2.5=Agreement; <2.5=Disagreed

**Hypothesis**

**Null Hypothesis (Ho)**

There is no significant difference in the opinions of male and female respondents on the level of awareness – general knowledge of COVID-19, Signs/Symptoms of COVID-19, COVID-19-Associated Risk Factors, COVID-19 Transmission/Spread and Misconceptions about COVID-19 pandemic. The study put up five hypotheses (null) which were tested by subjecting the mean scores of the opinions of the males and females to ascertain the existence of varying perceptions of the public which were represented by the study participants. The study gender-based categorized study groups demonstrated almost no statistically considerable variation of opinions with regards to the views of the male and female respondents on awareness-general knowledge of COVID-19 (t=0.718, df=345, p=0.47; Ho Retained), signs/symptoms of COVID-19 (t=1.252, df=345, p=0.21; Ho Retained), COVID-19 associated risk factors (t=-1.818, df=345, p=0.07; Failed to Reject Ho) and COVID-19 transmission/spread (t=-1.255, df=345, p=0.21; Failed to Reject Ho). Except for a significant discrepancy (t=-2457, df=345, p=0.01; Ho Rejected) observed between the opinions of males and females with respect to the misconceptions about COVID-19. This implies that male and female respondents viewed these misconceptions differently. Notably, the decision of retaining or rejection of the null hypothesis (Ho) was made based on the p-value at 5% alpha level.

**Table 6: T-test statistics of the mean responses**

| Principal | N | Mean | SD | t-value | Df | p-value | Decision |
|---|---|---|---|---|---|---|---|
| **Awareness –general knowledge of COVID-19** | | | | | | | |
| Male | 143 | 3.426 | .3425 | 0.718 | 345 | 0.47 | Ho Retained |
| Female | 204 | 3.397 | .4016 | | | | |
| **Signs/Symptoms of COVID 19** | | | | | | | |
| Male | 143 | 2.880 | .4646 | 1.252 | 322 | 0.21 | Ho Retained |
| Female | 204 | 2.814 | .5087 | | | | |
| **COVID 19 Associated Risk Factors** | | | | | | | |
| Male | 143 | 2.959 | .2994 | -1.818 | 345 | .070 | Failed to Reject Ho |
| Female | 204 | 3.0256 | .3543 | | | | |
| **COVID 19 Transmission/Spread** | | | | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Male | 143 | 2.9890 | .286882 | -1.255 | 345 | .210 | Failed to Reject Ho |
| Female | 204 | 3.0322 | .334147 | | | | |
| **Misconceptions about COVID-19** | | | | | | | |
| Male | 143 | 2.14685 | .57320 | -2.457 | 345 | .014 | Ho Rejected |
| Female | 204 | 2.3077 | .61850 | | | | |

**Source:** Field Survey, 2020. Df=Degree of freedom, SD= Standard Deviation, N=Number sampled, Ho=Null Hypothesis

From the empirical establishment from this study, the public level of awareness as pertains general knowledge about COVID-19, signs/symptoms, COVID-19-associated risk factors and modes of transmission/spread is high. The suppositions of no significant differences in the opinions of male and female respondents were correct hence, the Nigeria public as represented by the study participants have a good understanding, notwithstanding the gender, as obtained as of the time of this study. Moreover, some of the misconceptions about COVID-19 revealed in this study were not supported by the respondents, nonetheless, the proposition among males and females differed greatly on this.

**Discussion**

The COVID-19 pandemic has been referred to be very phenomenal as the period is marked with some unimaginable happenings across the globe and among the rich and poor nations. The study outcome possibly suggests many interesting phenomena concerning public awareness about the COVID-19 pandemic. Since the emergence of COVID-19, especially from the period it was declared a pandemic by WHO, the high transmissibility made it a huge concern as it affected the Health and the global economy in general with different shields and impact. The complicating effect of COVID-19 made the scientific community to increase their search for curative therapy as well as vaccine, for the novel Coronavirus. Moreover, the lack of immediate cure and vaccine made room for alternative medicine to venture into the search for a solution, and some have resorted to use of some traditional formula like the Madagascar formulation, although all these are yet to be endorsed by the appropriate global Health agencies charged with such responsibility.

The quest for solution prompted the governments of the world to design and implement workable strategies that will be effective preventive tools in their countries. This is particularly essential in countries relying on public compliance with regulations like Nigeria. In Nigeria, rules such as total or partial lockdown, social distancing (6 feet), use of facemask, and more were enacted but the effectiveness of this rule depends hugely on adherence by the citizen. However, awareness and knowledge remains very critical and is very key to compliance outcome, before considering other factors. Objectively, this present study has proven high rate of awareness about COVID-19 pandemic in Nigeria by the public, even though the pandemic in general has truly exposed the weakness and non-functioning capacity of our health facilities The study confirmed a reasonable awareness of the public about the signs and symptoms of COVID-19; hence, the populace can pinpoint the major likely signs and symptoms of the novel Coronavirus. This will minimize misclassification of the disease, especially amongst symptomatic individuals. The awareness and good knowledge about signs and symptoms help in the identification of an exposed individual, and this will, in turn, lead to the calling of the attention of the appropriate health agency for prompt intervention. If the general populace is armed with this information as observed here, even when some symptomatic individuals perhaps are reluctant for one reason or another, anyone around the symptomatic individual who is familiar with the signs/symptoms might call the attention of the Public Health agency in charge, or keep the safety precautions having in mind that the manifestations observed are signs and symptoms of COVID-19. The outcome of this study with regards to good knowledge and awareness of the signs and symptoms of COVID-19 has made certain the effectiveness of the tips which are widely been broadcast by the World Health Organization (WHO) and Nigeria Centre for Disease Control (NCDC) in all media platforms, including the use of jingles and cartoons for better understanding, even the use of vernacular or local languages. Furthermore, different Health professional bodies have been involved in raising advocacy of awareness on how to identify the sign and symptoms of the infection, These, they do by visiting different media houses and myriad of social media platforms. The relevance of the knowledge of the signs/symptoms of COVID-19 is paramount owing to its high transmissibility and the similarities it shares with other diseases. Furthermore, the high level of awareness of the public about the Risk Factors associated with COVID-19 in Nigeria has revealed that specific areas like sex-dependent risk factors and social-economic status were not assumed to be risk factors as observed in this study. The insight from this study showed that the respondents did not agree that "COVID-19 affects more males than females and that COVID-19 is for the rich/wealthy people including politicians". These responses suggest that the people of Nigeria, as represented in this study, are aware of the proposed WHO guidelines of risk factor classification for COVID-19 to a good extent. This insinuates that the respondents in their opinions did not see sex and socio-economic status as risk factors of COVID-19.

In addition, the high level of awareness of the public about transmission and spread of COVID-19 was an indication that Nigerians are concerned about the novel Coronavirus as much as they are aware of malaria infection and transmission. Equally, COVID-19 been a global threat widely affecting the populace, hence has attracted lots of sensitization from appropriate agencies like WHO, NCDC and others to better inform the public about the pandemic. However, the media is flooded with information not excluding some misconceptions about COVID-19 pandemic. This conflicting information were presumably taken by the general public; however, the study observed notions recorded in this study proved that some of these misconceptions are actually considered as myths despite the fact that the public are aware of these misconceptions but they are not reliably taken. Besides, the concern by the populace about some of these misconceptions is due to its quick dissemination through all forms of outlets, both formal and informal, especially social media [1]. The increase of rumours particularly during the COVID-19 pandemic is alarming; however, a similar thing was recorded elsewhere. Although a comparable concept was reported, following the 2003 epidemic of Severe Acute Respiratory Syndrome according to Cheng and colleagues in 2003. Parallel to this position is the account of the

Swine Flu outbreak in 2009. Nevertheless, this study highlights a vital message to the government, World Health Organization, NCDC, Ministry of health in these regards. Evidence from this study is suggestive of Myth busters and authentic information are the antidotes to fake news hence, required frequently by WHO, NCDC and others to combat all fake information [6-8]. Besides, decision-makers need to consider a broader view of the situation in particular, concerning reassuring people's concern over fake news and mix-up of COVID-19 information. Nonetheless, this present study is similar to a recent work by Hussain and colleagues. who reported a high level of knowledge about COVID-19 amongst the residents as measured by the way respondents correctly answered the questions. Findings from this study were in agreement with another study carried out in China where respondents recorded a high level of awareness. The good level of awareness about COVID-19 amongst the public in Nigeria can be attributed to the intense awareness campaign by appropriate agencies and perhaps it came into Nigeria when it had already become a global issue, as well as the devastating morbidity and mortality observed in those countries coupled with the visible impact made on Health outcome of those countries. Besides, the effect was observed in all spheres of the affected countries including socio-political, religious, and economic facets. The economic impact of COVID-19 resulting in untold hardship experienced by the public, plus the recession encountered by affected nations [9-11], has contributed to the level of awareness of individuals. Quest by the public, to know the cause of the chaotic state of the global community and nations, points towards the novel Coronavirus. Hence, the high awareness recorded in this study can never be overemphasized at this point in time. Remarkably, the report obtained here is an indication of the effectiveness of the sensitization and awareness programmes that have been ongoing since the advent of COVID-19 in Nigeria, from the World Health Organization, Nigeria Centre for Disease Control, Ministry of Health, and other governmental plus non-governmental agencies including individual and corporate bodies. Nigeria as a nation has invested a lot in sensitization and awareness campaigns since there is no cure or vaccine yet for COVID-19. For this reason, broadcast media, telecommunication networks including mobile service providers, have flooded the media houses and social media platforms with jingles, and even verbal discussion amongst peers and family members.

The study assumed no marked statistical difference between male and female respondents, and it was confirmed by the hypothesis test to be true for Awareness – general knowledge of COVID-19, Signs/Symptoms of COVID-19, COVID-19-Associated Risk Factors and COVID-19 Transmission/Spread. This show that the residents demonstrated similar awareness and knowledge levels in these areas. Nevertheless, the statistically significant difference between male and female respondent on the misconceptions about COVID-19 found in this study can be ascribed to different ideologies with Nigeria being a multicultural nation with different tribes and belief systems, not excluding the religious fanatics. These and more have a way of affecting peoples' mental disposition, resulting in varying ideologies emanating from people. A similar thing was observed in Vietnam during the outbreak of Dengue fever. In the same way, Hussain and colleagues acknowledge similar differences in knowledge about COVID-19 in Nepal [12,13].

## Conclusion/Recommendation

Awareness of the novel Coronavirus is very imperative particularly in the era of increasing spread of COVID-19 as well as the post-COVID-19 era for prevention and effective case management respectively. Awareness level is one of the indicators of preparedness and is useful in Public Health outcome engagement. It is used for evaluation of a particular intervention thus, the exposure of the Nigerian residents to COVID-19 information as assessed in this study revealed a good level of awareness of the public about COVID-19. This is suggestive of the effectiveness of the exposure of the public to appropriate information; however, this study did not completely exclude erroneous belief by some populace. These little misconceptions observed is capable of infiltrating the public with a corrupting tendency, therefore, individuals and government including WHO and NCDC should be at alert and intensify their actions especially against COVID-19 myths and other misconceptions, plus crude practices with huge speed of penetrating into our remote communities.

## Acknowledgment

The researchers are profoundly happy to appreciate all the participants who willingly participated in the study freely with seemingly huge support and sense of cooperation. We are also indebted to Prof. S.D Abbey, Prof. G.N Wokem and Dr Azuonwu, Goodluck for their moral support and encouragement during the analysis and preparation of the manuscript.

## References

1. Cava MA, Fay KE, Beanlands HJ, McCay EA, Wignall R (2005) Risk Perception and Compliance with Quarantine during the SARS Outbreak. Journal of Nursing and Scholarship 37: 343-347.
2. Obioma A, Chidi AB, Christain A (2020) Failed Healthcare System and Poor Leadership Outcome: A Huge Public Health Challenge towards the Management of COVID 19 Pandemic in Sub-Sahara Africa, OSP Journal of Healthcare Medicine 1: 106.
3. Azuonwu O, Azuonwu TC, Akpelu GU (2017) Evaluation of Confounding HIV Sero-Prevalence and Associated Risk Factors among Subjects in Some Upland Communities of Niger Delta, Nigeria. International Journal of Public Health and Safety 2: 137.
4. Azuonwu Obioma, Agba Promise Chijioke, Ahiakwo Christian, Azuonwu Goodluck (2020) Epidemiology Dynamics and Pattern of Emerging Drawbacks Promoting Community Based Transmission of COVID 19 Pandemic Virus in Nigeria: Lessons From The Advanced Communities Strategy. Journal of Current Trend Nursing Health Care 1: 104.
5. Depoux A, Martin S, Karafillakis E, Preet R, Wilder-Smith A, et al. (2020) The pandemic of social media panic travels faster than the COVID-19 outbreak. Journal of Travel Medicine https://doi.org/10.1093/jtm/taaa031.
6. Chen S, Qiu Z, Xu L, Chen J, Lin Y, et al. (2003) People groups' responses to SARS in the community. Journal of Chinese Rural Health Service Administration 23: 15-8.
7. Fast SM, Kim L, Cohn EL, Mekaru SR, Brownstein JS, et al. (2018) Predicting social response to infectious disease outbreaks from internet-based news streams. Ann Oper Res 263: 551-564.
8. Radwan E, Radwan A (2020) The Spread of the Pandemic of Social Media Panic during the COVID-19 Outbreak. European Journal of Environment and Public Health 4: em0044.
9. Hussain A, Tripathi G, Bishnu MS, Ramji R, Raman PT (2020) Knowledge, attitudes, and practices towards COVID-19 among Nepalese Residents: A quick online cross-sectional survey. Asian Journal of Medical Sciences, 11: 6-10.
10. Zhong BL, Luo W, Li HM, Zhang QQ, Liu XG, et al. (2020) Knowledge, attitudes, and practices towards COVID-19 among Chinese residents during the rapid rise period of the

COVID-19 outbreak: a quick online cross-sectional survey. Int J Biol Sci; 16: 1745-1752.

11. Obioma A, Reuben AA, Elekwachi AB (2020) Potential Impact of COVID-19 Pandemic on the Socio-Economic Situations in Nigeria: A Huge Public Health Risk of unprecedented Concern. Journal of Quality Healthcare and Economics 3: 000176.
12. Ky Truong TN, Vo TQ, Nguyen NH, Nhat Nguyen QP, Nguyen PL, et al. (2019) Knowledge, attitudes, and practices among university students in relation to dengue fever: A multi- center study across Vietnamese regions. J Pak Med Assoc 69: S95-S107.
13. Hussain A, Tripathi G, Bishnu MS, Ramji R, Raman PT (2020) Knowledge, attitudes, and practices towards COVID-19 among Nepalese Residents: A quick online cross-sectional survey. Asian Journal of Medical Sciences 11: 6-10.