



## PERCEPTION AND PREVENTION PRACTICES RELATING TO COVID 19 INFECTION AMONG ELDERLY IN OGUN STATE, NIGERIA

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**ABSTRACT:** *The risk of contracting COVID-19 and becoming seriously ill increases with age. This study assessed perception and prevention practices relating to COVID 19 infection among the elderly in Ogun State. This study adopted a survey design. One hundred and seventy-five participants were selected using a multi-stage sampling technique. Data were collected using a structured questionnaire, and data collected were analyzed using descriptive and inferential statistics. The majority 142(81.9%) of the participants perceived themselves to be susceptible to COVID-19 infection, with 25(14.3%) perceiving it to be a serious disease. Less than a quarter 40(22.9) of the participants perceived COVID 19 prevention to be highly beneficial while most 115(65.7%) of the participants reported that their levels of barriers to prevention of COVID-19 were high. More than half of 95(54.3%) of the participants had low preventive practices for COVID-19. Participants' perceived susceptibility to COVID 19 was negatively correlated with their prevention practices ( $r = -0.15$ ;  $p = 0.04$ ). In conclusion, the participants had a poor perception of COVID 19 infection and low prevention practices. It is recommended that COVID-19 awareness campaigns should focus on raising more awareness of the risks associated with the COVID 19 infection to make the elderly engage more in preventive behaviours.*

**KEYWORD:** COVID-19 Elderly, Perception, Prevention



## INTRODUCTION

Coronavirus disease (COVID19) is a droplet infection characterized by rapid transmission, high mortality rate and subsequent complications in humans worldwide (Alhanawi et al., 2020). For these characteristics, COVID19 has been declared a global pandemic by the World Health Organization (WHO) and this has necessitated the implementation of non-pharmaceutical control measures by all countries in the world (WHO, 2020). These control measures included the use of face masks, social distancing, school closures, border closures and hygiene protocols (Ilesanmi, Oguntoye and Afolabi, 2020; Nigeria Center for Disease Control [NCDC], 2020). Despite the aforementioned containment and control efforts, COVID19 has remained a global threat with 470,104,435 cases and 6,098,231 deaths as of March 20, 2022. Of this global total, Nigeria has reported 255,103 cases and 3,142 deaths as of the notification date (Worldometer, 2022; NCDC, 2022). Ogun State currently has 5,810 confirmed cases of COVID19 with 82 deaths (NCDC, 2022).

The risk of contracting COVID19 and developing a serious illness increases with age (CDC, 2021). Vaccination of the elderly is of particular concern, as age is the main risk factor for mortality and complications from COVID19 infection (Kang and Jung, (2020); Iftimie et al., 2020). Studies have also shown that uptake of COVID19 vaccines increases with age (Olomofe et al., 2021; Tobin et al., 2021). Prior to the COVID19 pandemic, vaccine acceptance and uptake were declining worldwide due to doubts about efficacy and safety and the spread of misinformation about vaccines (Olomofe et al, (2021). The pandemic has further increased controversy surrounding vaccination as a preventive measure against infectious diseases. Rejection of a COVID-19 vaccine appears to be linked to misinformation and disinformation, as most of those who refuse to take a vaccine believe that the disease is man-made, does not exist, or is exaggerated and does not pose a serious threat. Others believe they were not at risk of contracting the virus, while others believe natural remedies and alternative medicines are safer than vaccines (Tobin et al. 2021; Olomofe et al., 2021).

Several myths have negatively impacted the acceptance of the COVID19 vaccine. People refused to get vaccinated because of some of these myths, such as COVID19 vaccines are not safe because pharmaceutical companies made them in a short period of time, COVID19 vaccine will make someone sick and die, COVID19 vaccine will not let pregnancy pass or even will not allow conception, COVID19 vaccine contains microchips, the COVID19 vaccine can make someone magnetic, COVID19 alters deoxyribonucleic acid (DNA), etc. It has been pointed out that perception is one of the key determinants of human health behaviour or health practice. It is potentially useful in understanding the behavioural correlates associated with COVID-19 prevention practices. The health-belief model assumes that a high level of perceived susceptibility to infection increases the likelihood of taking and accepting preventive measures (Tarkang and Zotor, 2015). It identified five factors associated with performing certain health-related behaviours: (i) the perceived severity of the health threat, (ii) the perceived level of vulnerability, (iii) the expected benefits of the behaviour, (iv) expected behavioural barriers, and (v) Advice on action (Janz and Becker, 1984; Rutter and Quine, 2002). Studies have confirmed that the Health Belief Model (HBM; Rosenstock et al., 1988) is a useful theoretical behaviour change model for understanding COVID19 vaccination intentions (Wong et al., 2020). This clearly shows that perception shapes knowledge of infection and acceptance of vaccination to prevent it. This study includes preventive practices related to COVID19, which are the basis for choosing HBM as a guide for the design of this study. Preventing and/or reducing the incidence and prevalence of COVID19 infection in older adults requires awareness



of their perception and preventive practices related to disease status, which can be uncovered through formative research. This need necessitated the design of this study to assess perceptions and prevention practices related to COVID 19 among older people in Ogun State, Nigeria.

## **MATERIAL AND METHODS**

### **Study design**

This study used a cross-sectional design with a sample of 175 elderly people aged 65-77 years in four communities in Ogun West and Ogun Central Senatorial District of Ogun State, Nigeria.

### **Sample size and sample Technique**

A sample of one hundred and seventy-five respondents was determined using the Cochrane formula for determining sample size in health studies. The study participants were selected by a multi-stage sampling method with three stages. The random selection by ballot of Ogun West and Ogun Central Senate Districts from the three Senate Districts in Ogun State constituted the first stage. The next step was the random selection of four Local Government Areas (LGAs) using a table of random numbers from among the eleven (11) LGAs in Ogun Central and Ogun West Senate Districts. For the next phase, a proportional sampling technique was used to select participants from places of worship, churches and mosques. These places of worship are chosen because they tend to have the most active older people there.

Data were collected using a structured questionnaire that was self-administered. In the first section, participants were asked questions about demographic characteristics such as age, gender, religion, and marital status. Section two assessed participants' perceptions of COVID19, participants perceived susceptibility, perceived severity, perceived benefits, and perceived barriers were examined. Participants' perceived vulnerability to COVID19 was measured on an 18-point rating scale; Perceived severity was measured on a 12-point rating scale, perceived benefits of COVID19 prevention were measured on a 27-point rating scale, perceived barriers to COVID19 prevention were measured on a 30-point rating scale. Scores greater than and equal to the mean were considered high. Perception responses consistent with the biomedical view were operationally defined as favourable, while those not consistent with the biomedical view were defined as unfavourable. The maximum expected score for perception is 87 points. Participants who scored  $\leq 43.5$ , which is below the expected mean score, were perceived as unfavourable, while participants who scored  $> 43.5$ , which was above the expected mean score, were perceived as positive. The final section of the question rated participants' COVID-19 prevention practices, including the COVID19 vaccine. This section was measured on a 22-point grading scale. The participants' prevention practices were then divided into three; poor practices, those who scored between 7.4 and 14.66 were considered moderately practised, while those who scored  $>14.66$  were considered good prevention practices.

The investigator verified that all questionnaires were complete and the completed questionnaires were cross-checked. The data were manually coded and entered into the computer for analysis. Descriptive (Mean and standard deviation), and inferential statistics (correlation and chi-square). All statistical tests were performed with a significance level of  $p \leq 0.05$ .



## RESULTS

Socio-demographic information of the participants in this study

The participants were between the age ranges of 65-77 years with a mean age of  $67.43 \pm 2.30$  years. More than half 102 (58.3%) of the participants were males and over a quarter 71 (40.6%) had no formal education. Half 88 (50.3%) of the respondents were Muslims. Slightly more than half 92 (52.6%) of the participants were married and the majority 138 (78.9%) were from the Yoruba ethnic group (See, Table 1).

**Table 1: Respondents' Socio-demographic Characteristics**

Socio-demographic items	Frequency = 175	Percentage
<b>Age (in years)</b> Mean age $67.43 \pm 2.30$ years		
65-69	153	87.4
70-74	19	10.9
75-79	3	1.7
<b>Gender</b>		
Male	102	58.3
Female	73	41.7
<b>Level of Education</b>		
No formal	71	40.6
Primary	53	30.3
Secondary	36	20.6
Tertiary	15	8.6
<b>Religion</b>		
Christian	78	44.6
Islam	88	50.3
Others	9	5.2
<b>Marital status</b>		
Married	92	52.6
Divorced	52	29.7
Widowed	31	17.7
<b>Ethnicity</b>		
Yoruba	138	78.9
Igbo	16	9.1
Hausa	21	12.0

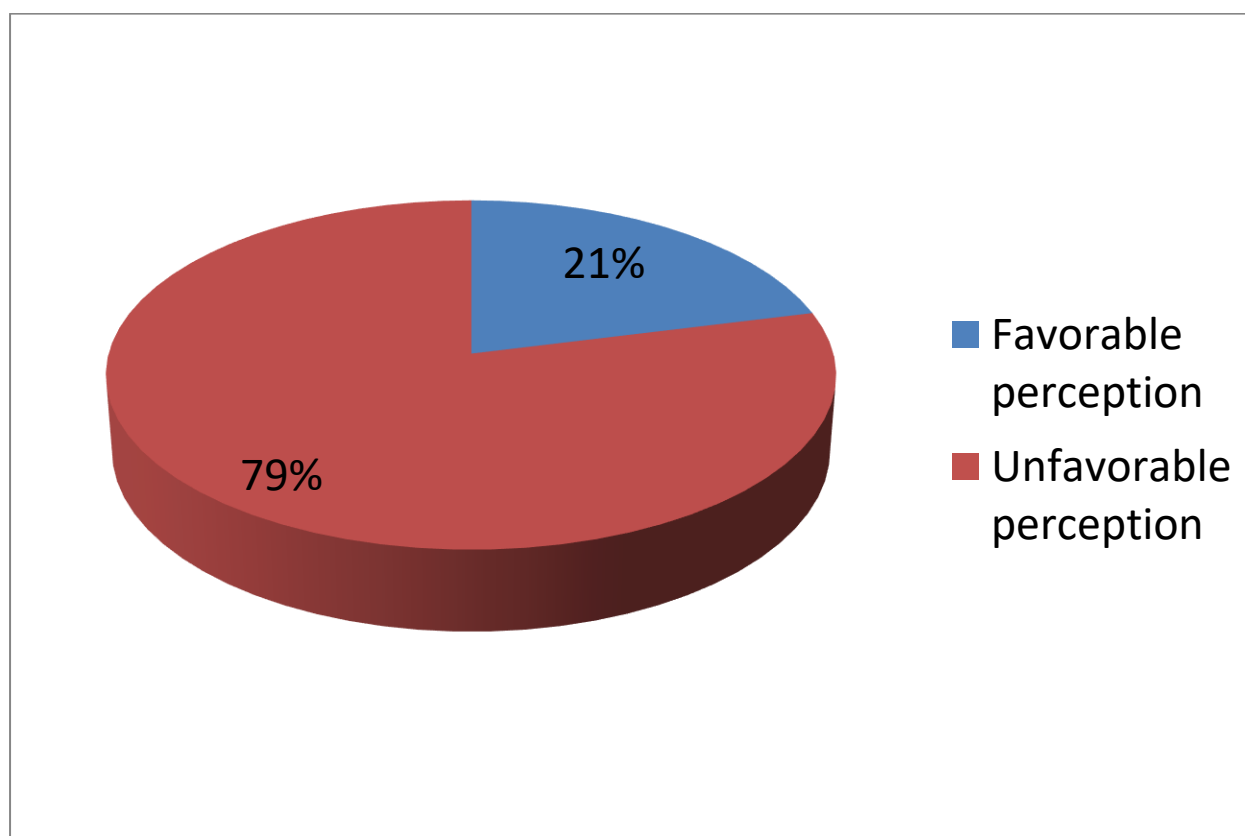


## Participants' Perception of COVID-19

Majority 142 (81.9%) of the participants perceived themselves to be susceptible to COVID-19 infection, with a few 33 (18.9%) perceiving themselves to have low susceptibility to COVID 19. Only 25 (14.3%) perceived COVID-19 to be a serious disease. Less than a quarter 40 (22.9) of the participants perceived COVID 19 prevention to be highly beneficial, while most 135 (77.1%) did not. Most 115 (65.7%) of the participants reported that their levels of barriers to the prevention of COVID-19 were high. Some of the barriers stated by the participants were lack of trust, the vaccines kill and lack of time (See, Table 2). Overall, the proportion of the participants with favourable perceptions was 21.1% (See, Figure 1). The relationship between participants' socio-demographic characteristics and their perception of COVID-19 is presented in table 3. There is a significant relationship between participants; gender ( $\chi^2 = 4.32$ ;  $p = 0.04$ ); level of education ( $\chi^2 = 22.9$ ;  $p = 0.000$ ); religion ( $X^2 = 10.95$ ;  $p = 0.002$ ); marital status ( $\chi^2 = 5.89$ ;  $p = 0.05$ ); ethnicity ( $\chi^2 = 6.95$ ;  $p = 0.03$ ) and their perception of COVID-19.

**Table 2: Proportion of the Participants' Perception of COVID 19**

<b>Perception</b>	<b>Frequency (%) = 175</b>
<b>Level of Perceived susceptibility on an 18-point scale</b>	
Low level of susceptibility (0-9)	33(18.9)
High level of Susceptibility (10-18)	142(81.1)
Mean perceived susceptibility score	10.99 $\pm$ 2.04
<b>Level of Perceived severity on a 12-point scale</b>	
Low level of severity	150(85.7)
High level of severity	25(14.3)
Mean perceived severity score	5.75 $\pm$ 1.43
<b>Level of Perceived of the benefit of prevention on a 27-point scale</b>	
	135(77.1)
Low level of perceived benefits	40(22.9)
High level of perceived benefits	10.21 $\pm$ 5.88
Mean perceived benefits score	
<b>Level of perceived of barriers to prevention</b>	
Low level of perceived barriers	60(34.3)
High level of perceived barriers	115(65.7)
Mean perceived barrier score	15.12 $\pm$ 4.32



**Figure 1: Participants' Overall Perception of COVID 19**

**Table 3: Participants Perception of COVID-19 by Socio-demographic Characteristics**

Socio-demographic information	Unfavourable Perception n=138(%)	Favourable Perception 37(21.1%)	Total N=175	$\chi^2$	P-value
<b>Age( in years)</b>				3.51	0.17
65-69	124(81.0)	29(19.0)	153		
70 -74	12(63.2)	7(36.8)	19		
75 -79	0(0.0)	0(0.0)	0		
<b>Gender</b>				4.31	0.04
Male	86(84.3)	16(15.7)	102		
Female	52(71.2)	21(28.8)	73		
<b>Level of education</b>				22.9	0.000
No formal	63(88.7)	8(11.3)	71		
Primary	42(79.2)	11(11.2)	53		
Secondary	28(77.8)	8(22.2)	36		
Tertiary	5(33.3)	10(66.7)	15		
<b>Religion</b>				10.95	0.002
Christian	53(67.9)	25(32.1)	78		
Islam	76(86.4)	12(13.6)	88		
Others	9 (100)	0(0.0)	9		



<b>Marital Status</b>				5.89	0.05
Married	68(73.9)	24(26.1)	92		
Divorced	47(90.4)	5(9.6)	52		
Widowed	23(74.2)	8(25.8)	31		
<b>Ethnicity</b>				6.95	0.03
Yoruba	106(76.8)	32(23.2)	138		
Igbo	11(68.8)	5(31.3)	16		
Hausa	21(100)	0(0.0)	21		

### Participants' Prevention Practices of COVID-19

Table 4 showed the participants' preventive practices for COVID-19. Majority 171 (97.7%) of the participants had not been vaccinated against COVID-19. Few 26 (14.9%) of the participants reported that they always washed their hands whenever they touched any objects or person. Similarly, only a few 14 (8.0%) of the participants reported that they always used alcohol-based hand sanitiser whenever they touched any objects or person. A few 14 (8.0%) of the participants reported that they always avoided crowded places. Likewise, only a few 12 (6.9%) of the participants reported that they always wear a face mask in public places. Only 10 (5.7%) of the participants reported that they cough into a bent elbow. A few 9 (5.1%) of the participants reported that they always keep at least a 1-metre distance from people. Similarly, only 5 (2.9%) of the participants reported they always avoided handshaking and hugs. Furthermore, more than half) 95(54.3%) of the participants had low preventive practices while few 28 (16.0%) of the participants had high preventive practices (See, Table 4).

**Table 4: Participants Preventive Practices of COVID 19**

Preventive practices	Never F (%)	Rarely F (%)	Sometimes F (%)	Always F (%)
I wash my hands with soap and water whenever I touch any objects or person	88 (50.3)	18 (10.3)	43 (24.6)	26 (14.9)
I use alcohol-based hand sanitizer whenever I touch any objects or person	79 (45.1)	40 (22.9)	42 (24.0)	14 (8.0)
I avoid going to crowded places	32 (18.3)	84 (48.0)	45 (25.7)	14 (8.0)
I wear face mask in public places	28 (16.0)	40 (22.9)	95 (54.3)	12 (6.9)
I cough into bent elbow	55 (31.4)	23 (13.1)	87 (49.7)	10 (5.7)
I keep at least 1 meter distance from people	89 (50.9)	31 (17.7)	46 (26.3)	9 (5.1)
I avoid handshakes and hugs	95 (54.3)	26 (14.9)	49 (28.0)	5 (2.9)
	<b>Yes (%)</b>	<b>No (%)</b>		
Ever received COVID 19 vaccine	4(2.3)	171(97.7)		
<b>Prevention practice measured on 22 point rating scale</b>				
Low preventive practice	95(54.3%)			
Moderate preventive practice	52(29.7)			
High preventive practices	28(16.0)			



## Relationship between Participants' Perception of COVID-19 and Prevention Practices

Table 5 highlighted the relationship between participants' perception of COVID-19 and preventive practices of COVID-19. Participants' perceived susceptibility to COVID 19 was negatively correlated with their prevention practices ( $r = -0.15$ ;  $p = 0.04$ ). Also participants' perceived severity of COVID 19 was positively correlated with their prevention practices ( $r = 0.29$ ;  $p = 0.000$ ). A significant relationship exist between participants perceived benefits of preventing COVID-19 and their prevention practices ( $r = 0.60$ ;  $p = 0.000$ ). Also, there was a significant relationship between participants' perceived barriers to preventing COVID 19 and prevention practices ( $r = -0.49$ ;  $p = 0.000$ ).

**Table 5: Relationship between Participants' Perception of COVID-19 and Prevention Practices**

Perception	Prevention practice of COVID-19 n=175	
	r-value	p-value
Perceived susceptibility	- 0.15	0.04
Perceived severity	0.29	0.000
Perceived benefits	0.49	0.000
Perceived barriers	0.60	0.000

## DISCUSSION

This study examined the perception and prevention practices of COVID-19 among elderly in Ogun state, Nigeria. Perceived susceptibility levels were high among this age group and that was different from a survey report in Germany where the elderly reported low perceived susceptibility (Betsch, 2020). This might be related to a difference in the study location. As for the gender differences, females tend to have higher perception measures compared to males. This finding is similar to the finding of Kwok et al, 2020. Most of the participants had poor perceptions of COVID. This finding corroborates the finding of Enitan et al, (2020) in Nigeria where they reported poor perception of COVID 19. However, this finding is at variance with the finding of Adejumo et al., (2021), who reported positive perceptions of the COVID-19 among their participants. This difference in findings may be due to the difference in the study population as their study was conducted among health workers. This may explain why they had positive perceptions. Furthermore, there was a significant relationship between participants' gender, level of education, religion marital status, ethnicity and their perception of COVID-19. In contrast, Enitan et al, (2020) reported no significant relationship between participants' age, gender, educational level, and their perception of COVID-19.

Similarly, all the components in Health Belief Model had a significant relationship with COVID 19 prevention practices. This finding corroborates the result of Mohamed et al (2021), who reported that all components in HBM had a significant association with acceptance of the COVID-19 vaccine. Studies corroborating this present finding recommended that an individual's ability to promote preventive behaviour mostly depends on the perceived risk of contracting a disease and that perception is a strong predictor of preventive practices (Zhang et al., 2020). Also, as stated by the HBM, for individuals to willingly engage in preventive behaviours, they may have to first significantly perceive the risk that such disease poses to them.





This study revealed that more than half of the participants had low prevention practice scores. A similar result was reported in Ethiopia (Asmelash et al., 2020). However, Iradukunda et al, (2020) in Rwanda reported higher prevention practices scores. This difference in result may be due to the difference in the study population as their study participants were HIV patients who were already at greater risk of the infection. Although the elderly are more susceptible to COVID-19, the practices of hygiene and social distancing were low. This finding contradicts the findings of Atchison et al., (2020) in the UK, where social distancing was adopted more among the elderly.

In conclusion, the study participants had a poor perception of COVID 19 as there they had some misconceptions about COVID-19. Also, they had low prevention practices for COVID-19. Based on the Health Belief Model, it is recommended that the COVID-19 sensitization program should focus on educating the elderly on the risks associated with the COVID 19 infection to improve the elderly preventive behaviours.

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