Journal of African films and Diaspora Studies (JAFDIS)
(Research on African Films, Diaspora Studies, Performance Arts and Communication Studies)
Published consistently since 2018

ISSN: 2516-2705 (Print) ISSN: 2516-2713 (Online)
Indexed by SCOPUS, IBSS, EBSCO, ProQuest, COPERNICUS, ERIH PLUS and Sabinet

Volume 7, Number 2, June 2024
pp 55-73

Knowledge and Attitude of Civil Servants towards COVID-19 Vaccine: Media Role in Fostering Acceptance and Hesitancy

DOI: https://doi.org/10.31920/2516-2713/2024/7n2a4

Lucky Evbuomwan, PhD
Edo State University Uzairue, Edo State, Nigeria

Chinyere Mbaka Mbaka, PhD
Mountain Top University, Ogun State, Nigeria

Blessed F. Ngonso, PhD
Edo State University Uzairue, Edo State, Nigeria
blessedngonso@gmail.com

Peter E. Egielewa, PhD*
Edo State University Uzairue, Edo State, Nigeria
eggypeter@gmail.com

&

Laura Imarhobobhor
Edo State University Uzairue, Edo State, Nigeria

Abstract

The introduction of COVID-19 vaccine met with varying degrees of acceptance and hesitancy in different regions of the world, despite the fact that vaccination is an evidence-based method of disease prevention. Since refusal to be vaccinated will ultimately lead to the widespread of the disease, it is necessary to look at factors that could foster vaccine hesitancy so that the acceptance rate of the vaccine can increase. This study is anchored on agenda-setting theory, which believes that media messages are powerful and create awareness, increase knowledge and shape audience behaviour. The aim of the study was to ascertain the rate of COVID-19 vaccine acceptance/hesitancy among civil servants within Benin Metropolis, Edo State, Nigeria and the role the mass media played in this process. This study used a cross-sectional quantitative study and employed a structured questionnaire to obtain data from 300 participants. Findings indicated that the acceptance rate of the COVID-19 vaccine was 77% (n=230) while 60% (n=124) showed some hesitancy. Factors for the hesitancy were vaccine safety, incomplete protection and lack of trust in the government. Despite several media campaigns on the safety of the COVID-19 vaccine, people were not persuaded.

Keywords: *COVID-19, Healthcare, Hesitancy, Media, Methods, Vaccine.*

Introduction

Coronavirus disease 2019 (COVID-19) is a viral disease caused by Severe Respiratory Syndrome Corona Virus 2(SARs-COV-2). It was first detected and identified in late December in China (CDC, 2019) according to the World Health Organization (2020). After being declared a global pandemic, COVID-19 has ravaged many countries worldwide and has overwhelmed many healthcare systems (Elimian *et al.,* 2020).

The current worldwide prevalence of COVID-19 revealed three million new cases with over twenty-three thousand deaths between 13th March and 9th April 2023. Worldwide prevalence is more than 762 million confirmed cases with over 6.8 million deaths (WHO, 2023). Current trends in reported COVID-19 cases continue to underestimate the true number of global infections and reinfections as shown by prevalence surveys (Cohen *et al*., 2022). This is partly due to the reductions in testing and delays in reporting in many countries. This was especially true in Nigeria due to inadequate facilities and even testing, especially in many densely populated rural areas (Njoga *et al*., 2022)

During the global COVID-19 pandemic, many countries were affected, and many lives were lost to the disease, especially between 2020 and 2021. There was economic shutdown in many regions, which led to loss of businesses, jobs and other sources of livelihood. The virus was rapidly transmitted across geographical borders, resulting in several million deaths worldwide, including Nigeria. The next big deal was the need for vaccine development that could protect against the virus (NPHCDA, 2022).

The development and availability of the vaccine bred hope in different countries. This was due to the high mortality rate associated with the disease. The vaccine for COVID-19 was made available in order to reduce the death rate and morbidity rate that were associated with the disease. The COVID-19 vaccine is a critical and timely approach that could help prevent the spread of the virus. However, the success of any vaccination programme depends on high vaccine acceptance, which would, in turn, lead to high vaccine coverage, achieving herd immunity (Quinn *et al.,* 2019). In Nigeria, COVID-19 vaccination targeted people with a high probability of being infected, which included the elderly, health workers and persons with underlying diseases such as diabetes, heart disease, hypertension, obesity and kidney disease (NPHCDA, 2022).

The introduction of the COVID-19 vaccine to Nigeria was strategised into four phases so that, in the end, good vaccine coverage would be achieved to protect the nation from the disease. Health workers, military personnel, workers at the entrance port to the country and scientists in the laboratory were targeted in Phase 1. Phase two was to target the elderly who were aged 50 years and above. Workers in local government areas with high disease burden were the target of phase 3, while other categories of people were to be vaccinated as more vaccines become available (Emeka *et al*., 2022). There is a need for increased acceptance of the COVID-19 vaccine to achieve herd immunity successfully. The rate of COVID-19 hesitancy has been reported to be high in different world regions, especially among health workers (Soares *et al*., 2021; Olawade *et al*., 2022). This is worrisome as it will affect the rate of recommendation of the vaccine by health workers. From the foregoing, this study was designed to evaluate implicated factors for COVID-19 vaccine hesitancy among healthcare and non-healthcare-providing civil servants in Benin City, Edo State, Nigeria.

The Role of the Media during the Pandemic

The COVID-19 pandemic broke out in late 2019 and became profound in 2020, emerging as one of the worst enemies of humanity in the history of mankind. In their study, Ukhurebor *et al.* (2022) view the period thus, "the period 2020/2021 was an unprecedented and historic time for industrial, economic, and societal activities all over the world." The period reflected great challenges to human health, the ecosystems, and other aspects of human endeavours owing to the COVID-19 or SARS-CoV-2 (CV-19) pandemic, which is now a topical aspect of research interest. The outbreak of COVID-19, which was traced to Wuhan in China, shut down every sector of the economy, reshaping how things are done, including how humans communicate with one another (Uchenunu & Ngonso, 2021; Egielewa *et al.*, 2022). Ngonso and Chukwu (2021) captured it succinctly, the "COVID-19 pandemic has recalibrated the hitherto world order and subjected everybody to learning new methods of survival. Information dissemination and communication activities were not left out in the new arrangement" (p.12). The import of Ngonso and Chukwu's assertion is that the information and communication system was also affected by the COVID-19 outbreak. This is true, given the fact that human communication and conversation centred so much on COVID-19, while the media messages at that time were heavily centred on the pandemic, too. The points of discussion were understanding of the COVID-19 outbreak, the perception of the source of the outbreak, vaccination, safety protocol and prevention, the impacts on the economy and the general well-being of the people (Ngonso, 2021; Uchenunu &Ngonso, 2021).

Nigerian audience members were largely influenced by the kind of information they received from the media and shared with others (Ngonso, 2021). According to Ngonso and Chukwu (2021), educated rural dwellers watched TV during the pandemic and obtained first-hand information on COVID-19 and, upon getting the information, shared it with the less educated and the non-educated ones. Ngonso and Chukwu did not specifically state what kind of information the rural dwellers consumed about COVID-19, but in a study conducted by Ngonso in 2021, the study findings showed that messages on safety protocols were aired from time to time on radio and the audience were also exposed to these messages. The findings also showed that safety precautions were adhered to by those who exposed themselves to the radio jingles on COVID-19 safety protocols. Similarly, Egielewa *et al.* (2023) research study on television consumption

during the COVID-19 lockdown showed that Nigerians watched TV programme to get information on COVID-19, to combat boredom and to get inspiration from God. This study also gave a specific kind of information that the Nigerian audience desired about COVID-19. However, the study concluded that Nigerians were interested in their health because they were eager to get information about COVID-19. Mass media channels are very important when it comes to information dissemination, particularly on health and health-related matters ((Egielewa, 2021). It has been shown that television is the most popular source of information on health due to its audio-visual power, which makes it easier to transmit information on health (Buryriska *et al.*, 2015). The media provide the world population with all kinds of information. As Uchenunu and Ngonso (2021) capture it succinctly, "the world population relies on the media to provide comprehensive information on situation that is unfolding or that has already happened". It is the task of the media to keep society informed of all happenings and alert the world of pending danger in any area of human endeavour. It is also the media's responsibility to re-orient the public about innovative occurrences such as the COVID-19 pandemic safety protocol and its vaccine and vaccination. But the question is, was the media able to persuade the Nigerian audience to accept the COVID-19 vaccination willingly? Data have shown that the Nigerian mass media were unable to convince Nigerians to take the vaccine freely despite the government's efforts to ensure that all Nigerians take the vaccine.

There was this concept or belief system of a conspiracy theory that affected many Nigerians. In a study conducted by Uchenunu and Ngonso (2021), it was found that many Nigerians felt that COVID-19 was a disease manufactured in Wuhan Laboratory by the Chinese to reduce the world population for economic reasons, while some felt it was biological weaponry from China to claim a place in world power. Another school of thought within Nigeria felt Bill Gate Foundation wanted to indirectly impose the mark of the beast (666): the end-time biblical sign, on the world population. This greatly impeded the acceptance of the vaccine as the majority of Nigerians are highly religious and very conversant with such biblical end-time signs. The Nigerian populace, due to the wrongly held belief, religion and unfounded rumours, became resistant towards COVID-19 vaccination (Adigwe, 2021). Other reasons adduced for not taking the vaccine border on the safety concern of the COVID-19 vaccine, incomplete protection, lack of trust in the government and other agencies associated with the vaccine production/distribution and rumour of illness and death after taking the vaccine. These reasons made it difficult for Nigerians to be persuaded by the mass media. The mass media were also

seen as collaborators in the "dirty deal". According to Ngonso (2023), "one of the areas the mass media, particularly electronic media, have been accused of moral panic is in the dissemination of the disease, war and disaster-related messages. During COVID-19, some media audiences in Nigeria blame the media for blowing out of proportion the COVID-19 pandemic".

It is a known fact that some kinds of communication on some kinds of issues have some kinds of effects on some kinds of people; this indicates that not all kinds of communication can change the media audience's behaviour towards a given phenomenon because of their pre-conceived belief. Even though access to information helps to fight superstitious beliefs, and change values, ideas, thoughts, feelings and emotions among individuals (Ngonso & Egielewa, 2018), it became much more difficult for the media to persuade Nigerians to take the COVID-19 vaccine. Another reason why the media failed to persuade Nigerians was the fact that Nigeria is a religious nation. The vaccine was seen as a lure to accept the mark of the beast. Nigerian media of communication, particularly the electronic media, have been regularly accused of contributing to moral panic and immorality in the dissemination of contentment, such as the Big Brother Naija reality TV show (Ngonso *et al*, 2023).

Theoretical Underpinning

This study is anchored on agenda setting theory. This theory was propounded by Maxwell E. McComb and Donald L. Shaw in 1972. These scholars, who, in their research, examined the influence of the media on American presidential elections, assert that in displaying and choosing news, editors, newsroom staff, and broadcasters play an important part in shaping political reality. These researchers argued that the media audience not only learns about the issue in the news but also how much importance to attach to the issue based on the volume of information put forward by the media. The major strength of this theory, which makes it relevant to this research work, is that, the proponents of the theory believe that the media messages are powerful, and that the media create awareness, increase knowledge and shape audience behaviour (Ekhareafo & Ngonso, 2013).

In spite of the fact that this theory emanates from research that examined the influence of media on politics and the underscoring influence of media practitioners (editors, newsroom staff and broadcasters), its tenets

suit the topic under investigation, "knowledge and attitude of civil servants to COVID-19 vaccine: Media role in fostering acceptance/hesitancy?". We could recall how the media painted the entire story and the mystery of COVID-19's origin, spread, casualties, safety precautions and vaccine. Different media establishments handled the COVID-19 story based on their own orientation (Ngonso & Chukwu, 2021; Ngonso, 2021)

Material/Methodology

Study Design

This was a cross-sectional study that employed the use of structured questionnaires to obtain relevant information about participants' demography and health/vaccination awareness. The study was carried out among civil servants within Benin Metropolis. A stratified sampling method was used to recruit only healthcare and non-healthcare-providing civil servants in Benin City, Edo State, Nigeria.

Study Participants

The participants were all civil servants working within Benin Metropolis. They are categorised into healthcare and non-healthcare-providing civil servants. The healthcare providers were working in various hospitals and primary healthcare centres, while non-healthcare providers were in other government establishments.

Inclusion/Exclusion Criteria

Only healthcare and non-healthcare-providing civil servants, both males and females, who gave consent to participate and have had the opportunity to be vaccinated were recruited in this study. This is because individuals who have not had the opportunity to be vaccinated cannot be said to have accepted or rejected the vaccine. The participants were not suffering from any illness. Subjects who refused to consent or have not had the opportunity to be vaccinated were excluded. Also, participants who were not civil servants were excluded from the study.

Sample Size Determination

The minimum number of participants for this study was determined by the equation described by Ogbeibu (2015).

$$n = \frac{z^2 p(1-p)}{d^2}$$

where n = sample size

z= statistics for a level of 95% confidence = 1.96 (constant)

p = prevalence rate of COVID-19 hesitancy in adults, Nigeria 22% (Oluwatemitope *et al.*, 2021)

d = precision (allowable error) = 5% = 0.05.

The calculated sample size was 263.5, and this is the least number of samples to be used; hence, samples were collected from three hundred (300) participants.

Data Collection

Data including socio-demographical data, knowledge of COVID-19 vaccine, attitude towards the vaccine, vaccination status, vaccine hesitancy and associated reasons were collected from participants using a well-structured questionnaire, which was distributed to participants after carefully explaining the purpose of the study to them. The questions were carefully written in simple terms so that the participants had no issue responding to them. Prior to questionnaire distribution, a pilot study was carried out among 50 participants using a different population. After the pilot study, some of the questions were rephrased and some were expunged. The adjusted questionnaire was distributed to a total of three hundred participants comprising 150 healthcare providers and 150 non-healthcare providers.

Data Analysis

Data entry and analysis were conducted using SPSS version 24. Frequency distribution was used to indicate socio-demographic variables. The association between socio-demographic variables and vaccine acceptance/hesitancy was defined using the Chi-square test. The level of significance for each test was set at $P<0.05$.

Results

Demography and frequency distribution of study participants

The frequency distribution of participants' demography is shown in Table 1: of the 300 participants who enrolled in this study, 203(67.7%)were female, while 97(32.3%) were male. From the age distribution data, the lowest population of participants was 8(2.7%) in the age group below 20 years, while the most populated age group was 30-39 years [123(41.0%)]. The majority of the participants [217(72.3%)] had tertiary education, while those with primary education were the least [6(2.0%)]. Christians were highly populated in this study 252(84.0%), while traditional worshippers were least populated, with 6(2.0%) participants. All participants were either of two occupations, namely non-healthcare-providing civil servants and healthcare-providing civil servants, with a population of 150(50 %) each.

COVID-19 vaccination in participants

COVID-19 vaccination was defined in this study to mean participants who have received at least the first dose of the COVID-19 vaccine. As shown in Table 2, 230(76.7%) of the participants had received the COVID-19 vaccine, while 70(23.3%) refused to be vaccinated. 152(50.7%) of females took the vaccines, while 51 (17.0%) refused the vaccine. In the male category, 78(26.0%) received the vaccine, while 19(6.3%) rejected the vaccine. In age group 30-39yr, 96(32.0%) accepted the vaccine, while 27(9.0%) rejected the vaccine. Among those with tertiary education, 165(55.0%) accepted COVID-19 vaccine, while 52(17.3%) rejected the vaccine. Religion-wise, 192(64.0%) of Christians accepted the vaccine, while 60(20.0%) rejected the vaccine. 108(36.0%) health workers received the vaccines, while 42(14.0) rejected the vaccine. Among the non-healthcare-providing civil servants, 122(40.7%) received the COVID-19 vaccine, while 28(9.3) refused the vaccine. Findings revealed that neither gender, age, education, religion, nor occupation influenced COVID-19 vaccine acceptance or rejection.

Table 3: Willingness to accept the Covid-19 vaccine

In this study, willingness to accept the COVID-19 vaccine refers to whether the participants decided by themselves to be vaccinated with the COVID-19 vaccine or whether they were forced or threatened before they received the vaccine. Therefore, willingness was studied among the 230

participants who received the COVID-19 vaccine. Participants who were forced to take the vaccine were 106(46.1%), while those who took it without any compulsion were 124(53.9%). Of the 156 (67.8%) females who received the vaccine, 68(29.6) said they were forced, threatened or compelled to take the vaccine; otherwise, they cannot report to work, while 88(38.3%) took the vaccine on their own volition. Among the age group 40-49yr, 41(17.8%) said they were forced to take the vaccine, that if left to make a choice, they would never have taken the vaccine, while 50(21.7%) took the vaccine on their own accord. Among participants with tertiary education, of the 174(75.7%) who were vaccinated, 80(34.8%) were compelled to take the vaccine, while 94(40.9%) took it freely. In the category of religion, of the 193(83.9%) who were vaccinated, 91(36.6%) took the vaccine because they were forced, while 102(44.3%) took it freely. . The total number of healthcare-providing civil servants who were vaccinated was 121(52.6%), out of which 46(20.0%) were forced. For the 109(47.4%) non-healthcare-providing civil servants, 60(26.1%) were forced to receive the vaccine. Gender, age, education, and religion did not significantly influence participants' willingness to accept the COVID-19 vaccine, while occupation influenced participants' willingness to accept the vaccine with a p-value of less than 0.05.

COVID-19 vaccine hesitancy among participants

COVID-19 vaccine hesitancy in this study refers to participants' reluctance to be vaccinated with the COVID-19 vaccine, regardless of whether they finally took the vaccine or not. Of the three hundred participants, 180 (60%) said they were not only hesitant to receive the vaccine but that they observed a similar disposition in others, while 120 (40%) said they didn't show any hesitation towards the COVID-19 vaccine. 127 (42.3%) of the females showed hesitation towards the vaccine, while for males, 53(17.5%) showed hesitation towards the vaccine. Among the age group 30 - 39 years old, 74 (24.7%) out of 123 (41.0%) were hesitant about the vaccine. Among 217 (72.3%) participants who completed tertiary education, 127 (42.0%) reported hesitancy to take the vaccine. 152 (50.7%) of Christians were hesitant towards the vaccine, while for occupation, 90 (30.0%) of both healthcare and non-healthcare-providing civil servants were hesitant towards being vaccinated with the COVID-19 vaccine. Both gender, age, level of education, religion and occupation did not significantly influence the hesitancy of participants towards the COVID-19 vaccination.

Reasons for COVID-19 Vaccine Hesitancy

One hundred and eighty participants who showed hesitation to being vaccinated with COVID-19 vaccines outlined reasons for their hesitancy, including rumours of the vaccine safety concern, a lack of trust in the government, which kept insisting on vaccination, incomplete protection capacity of the vaccine, and a rumour that those vaccinated can still be infected with the disease. Individuals also held certain cultural beliefs and rumours about serious illness or death of vaccinated individuals. Of the 180 participants who exhibited hesitation towards being vaccinated, 57 (31.7%) based their reason on the perception that the COVID-19 vaccine was not safe; 42 (23.3%) stated their reason to be a lack of complete protection against COVID-19 disease; 41 (22.8%) reported a lack of trust in the government or other agencies associated with the vaccine production and distribution; 21 (11.7%) stated that their culture or belief was the reason; and 19 (10.6%) reported that the rumour of serious illness or death associated with the vaccine was why they hesitated against being vaccinated. Participants' gender, age and occupation influenced the different reasons they gave for showing hesitation towards the vaccine.

Table 1: Demography and frequency distribution of study participants

Parameters	Categories	Frequency (%)
Gender	Female	203(67.7)
	Male	97(32.3)
	Total	300(100.0)
Age(years)	<20	8(2.7)
	20-29	33(11.0)
	30-39	123(41.0)
	40-49	91(30.3)
	>= 50	45(15.0)
	Total	300(100.0)
Education	No formal	20(6.7)
	Primary	6(2.0)
	Secondary	57(19.0)
	Tertiary	217(72.3)
	Total	300(100.0)
Religion	Christianity	252(84.0)
	Islam	42(14.0)
	Traditional	6(2.0)
	Total	300(100)
Occupation	Health worker	Non-health
	Non-health worker	150(50.0)
	Total	300(100.0)

Table 2: COVID-19 vaccination in participants

Parameters	Categories	Responses		Total	p-value
		No (%)	Yes (%)		
Gender	Female	51 (17.0)	152(50.7)	203(67.7)	
	Male	19(6.3)	78(26.0)	97(32.3)	
	Total	70(23.3)	230(76.7)	300(100.0)	0.289
Age(years)	<20	4(1.3)	4(1.3)	8(2.7)	
	20-29	6(2.0)	27(9.0)	33(11.0)	
	30-39	27(9.0)	96(32.0)	123(41.0)	
	40-49	19(6.3)	72(24.0)	91(30.3)	
	>= 50	14(4.7)	31(10.3)	45(15.0)	
	Total	70(23.3)	230(76.7)	300(100.0)	0.229
Education	No formal	2(0.7)	18(6.0)	20(6.7)	
	Primary	1(0.3)	5(1.7)	6(2.0)	
	Secondary	15(5.0)	42(14.0)	57(19.0)	
	Tertiary	52(17.3)	165(55.0)	217(72.3)	
	Total	70(23.3)	230(76.7)	300(100.0)	0.481
Religion	Christianity	60(20.0)	192(64.0)	252(84.0)	
	Islam	7(2.3)	35(11.7)	42(14.0)	
	Traditional	3(1.0)	3(1.0)	6(2.0)	
	Total	70(23.3)	230(76.7)	300(100.0)	
Occupation	Health worker	42(14.0)	108(36.0)	150(50.0)	
	Non-health worker	28(9.3)	122(40.7)	150(50.0)	
	Total	70(23.3)	230(76.7)	300(100.0)	0.056

Table 3: Willingness to accept the COVID-19 vaccine

Parameters	Categories	Responses		Total	p-value
		Forced (%)	Freewill (%)		
Gender	Female	68(29.6)	88(38.3)	156(67.8)	
	Male	38(16.5)	36(15.7)	74(32.2)	
	Total	106(46.1)	124(53.9)	230(100)	0.270
Age(years)	<20	2(0.9)	4(1.7)	6(2.6)	
	20-29	14(6.1)	17(7.4)	31(13.5)	
	30-39	29(12.6)	33(14.3)	62(27.0)	
	40-49	41(17.8)	50(21.7)	91(39.6)	
	>= 50	20(8.7)	20(8.7)	40(17.4)	
	Total	106(46.1)	124(53.9)	230(100.0)	0.951
Education	No formal	4(1.7)	6(2.6)	10(5.0)	
	Primary	2(0.9)	3(1.3)	5(2.2)	
	Secondary	20(8.7)	21(9.1)	41(17.8)	
	Tertiary	80(34.8)	94(40.9)	174(75.7)	
	Total	106(46.1)	124(53.9)	230(100)	0.952
Religion	Christianity	91(36.6)	102(44.3)	193(83.9)	
	Islam	13(5.7)	20(8.7)	33(14.3)	
	Traditional	2(0.9)	2(0.9)	4(1.7)	
	Total	106(46.1)	124(53.9)	230(100.0)	0.702
Occupation	Health worker	46(20.0)	75(32.6)	121(52.6)	
	Non-health worker	60(26.1)	49(21.3)	109(47.4)	
	Total	106(46.1)	124(53.9)	230(300)	0.01

Table 7: COVID-19 vaccine hesitancy among participants

Parameters	Categories	Responses		Total	p-value
		No (%)	Yes (%)		
Gender	Female	76(25.3)	127(42.3)	203(67.7)	
	Male	44(14.7)	53 (17.5)	97(32.3)	
	Total	120(40.0)	180(60)	300(100)	0.190
Age(years)	<20	4(1.3)	4(1.3)	8 (2.6)	
	20-29	8(2.6)	25(8.3)	33(11.0)	
	30-39	49(16.3)	74(24.7)	123(41.0)	
	40-49	39(13.0)	52(17.3)	91(30.3)	
	>= 50	20(6.7)	25(8.3)	45(15.0)	
	Total	120(40.0)	180(60.0)	300(100.0)	0.351
Education	No formal	11(3.7)	9(3.0)	20(6.7)	
	Primary	3(1.0)	3(1.0)	6(2.0)	
	Secondary	16(5.3)	41(13.7)	57(19.0)	
	Tertiary	90(30.0)	127(42.0)	217(72.3)	
	Total	120(40.0)	180(60.0)	300(100.0)	0.127
Religion	Christianity	100(33.3)	152(50.7)	252(84.0)	
	Islam	20(6.7)	22(7.3)	42(14.0)	
	Traditional	0(0.0)	6(2.0)	6(2.0)	
	Total	120(40.0)	180(60.0)	300(100.0)	0.081
Occupation	Health worker	60(20.0)	90(30.0)	150(50.0)	
	Non-health worker	60(20.0)	90(30.0)	150(50.0)	
	Total	120(40.0)	180(60.0)	300(100.0)	1.000

Reasons for COVID-19 Vaccine Hesitancy

Parameters	Categories	Responses					Total	p-value
		A	B	C	D	E		
Gender	Female	31(17.2)	38(21.1)	30(16.7)	12(6.7)	12(6.7)	123(68.3)	
	Male	26(14.4)	4(2.2)	11(6.1)	9(5.0)	7(3.9)	57(31.7)	
	Total	57(31.7)	42(23.3)	41(22.8)	21(11.7)	19(10.6)	180(100.0)	0.002
Age(years)	<20	0(0.0)	1(0.6)	0(0.0)	0(0.0)	1(0.6)	2(1.1)	
	20-29	6(3.3)	7(3.9)	6(3.3)	5(2.8)	3(1.7)	27(15.0)	
	30-39	11(6.1)	13(7.2)	17(9.4)	9(5.0)	4(2.2)	54(30.0)	
	40-49	33(18.3)	18(10.0)	7(3.9)	6(3.3)	11(6.1)	75(41.7)	
	>= 50	7(3.9)	3(1.7)	11(6.1)	1(0.6)	0(0.0)	22(12.2)	
	Total	57(31.7)	42(23.3)	41(22.8)	21(11.7)	19(10.6)	180(100.0)	0.003
Education	No formal	1(0.6)	3(1.7)	0(0.0)	0(0.0)	2(1.1)	6(3.3)	
	Primary	2(1.1)	0(0.0)	2(1.1)	0(0.0)	1(0.6)	5(2.8)	
	Secondary	10(5.6)	7(3.9)	7(3.9)	4(2.2)	2(1.1)	30(16.7)	
	Tertiary	44(24.4)	32(17.8)	32(17.8)	17(9.4)	14(7.8)	139(77.2)	
	Total	57(31.7)	42(23.3)	41(22.8)	21(11.7)	19(10.6)	180(100.0)	0.545
Religion	Christianity	48(26.7)	34(18.9)	36(20.0)	19(10.6)	14(7.8)	151(83.9)	
	Islam	8(4.4)	6(3.3)	4(2.2)	2(1.1)	5(2.8)	25(13.9)	
	Traditional	1(0.6)	2(1.1)	1(0.6)	0(0.0)	0(0.0)	4(2.2)	
	Total	57(31.7)	42(23.3)	41(22.8)	21(11.7)	19(10.6)	180(100.0)	0.698
Occupation	Health worker	19(10.6)	20(11.1)	32(17.8)	15(8.3)	13(6.0)	99(55.0)	
	Non-health worker	38(21.1)	22(21.2)	9(5.0)	6(3.3)	6(3.3)	81(45.0)	
	Total	57(31.1)	42(23.3)	41(22.8)	21(11.7)	19(10.6)	180(100.0)	0.000

Legend: Rumour of safety concern B- rumour of incomplete protection C- no trust in government/other agencies associated with vaccine production and distribution D- culture or belief E- rumour of serious illness or death as a result of the COVID-19 vaccination.

Discussion

The high percentage of COVID-19 vaccination among individuals suggests increasing awareness of the importance of vaccination in disease eradication or elimination. The fact that there is more than 75% vaccine coverage to achieve herd immunity reveals good COVID-19 vaccine coverage. The high coverage is expected because 50% of the participants were health workers who understood the role of vaccines in disease prevention. Another factor is the high level of tertiary education among participants. However, the fact that 23.3% refused COVID vaccination is worrisome due to the ease of spread of the virus. The acceptance rate in this study is lower than the 86% acceptance rate reported by Williams *et al.* (2020). The higher acceptance rate reported by Williams *et al.* (2020) may be due to their study participants' high perceived susceptibility to COVID-19 infection, since the participants in their study all had chronic respiratory illnesses and may have perceived vaccination as their last hope. Findings from the study by Soares *et al.* (2021) revealed a high hesitancy rate of 65% among participants of diverse occupations in Portugal, which is higher than the hesitancy rate observed in this study. This difference may have arisen from the fact that various occupation groups were sampled in their work compared to just healthcare and non-healthcare-providing occupation groups in this study. The vaccine rejection rate observed in this study was lower than 31%, which was previously reported by a study in the USA (Reiter *et al.*, 2020).

Lack of willingness to accept the COVID-19 vaccine among many participants may have arisen from different factors that may have discouraged them. However, those who willingly accepted the vaccine may have perceived it as a prophylactic measure to curb COVID-19 disease. The occupation of the participants significantly influenced their willingness to accept the vaccine or not. One might argue that healthcare providers would have no problem accepting COVID-19 vaccines because of their knowledge of the role of vaccines in disease prevention. However, in this study, 20% of health workers admitted they were forced to take the vaccine. Although the majority of the health workers willingly accepted the vaccine, it is noteworthy to assume that among those who were forced, the recommendation rate of the vaccine to members of their family or close friends would be very low.

The high rate of COVID-19 hesitancy observed in this study is alarming, as 60% of the participants, including healthcare providers,

hesitated against being vaccinated with the vaccine. The rate of hesitancy observed in this work is higher than the 50.5% rate reported by Amuzie *et al.* (2021), who reported vaccine hesitancy among health workers, including doctors and nurses. It is also higher than the 43% COVID-19 hesitancy rate reported by Ilikannu *et al.* (2022). The hesitancy rate in this study is lower than the 77% reported by Adigwe (2021). One reason stated was that the vaccine was not safe. This may have incited fear among the people, thereby dissuading them from taking the COVID-19 vaccine or allowing their loved ones to take the vaccine.

Another reason was incomplete protection by the vaccine against COVID disease. This may have arisen as a result of rumours that people are still developing the disease despite being vaccinated, and so even with the vaccination, one still has to go through all the rigours of preventative measures. It is safe to say that the media, especially social media, played a key role in selling such rumours, triggering a hesitant reaction against vaccines among the population. Another reason stated by the participants was a lack of trust regarding the development of the vaccine and a lack of trust in the government. It is important to note that even the vaccine-producing countries had a high incidence of the disease. One would arguably ask about the efficacy of the vaccine if it could not confer protection in the source countries.

Again, there were many activities by the government regarding the vaccine, especially in developing countries such as Nigeria, which may have bred distrust in the people. For example, in many states, palliative items meant to ease the pains of the people during the lockdown period were not released to the people, and now the same government is encouraging or forcing people to be vaccinated. This made people lose trust and hesitate about being vaccinated against the disease. Culture and belief was another reason given for hesitating about the disease. Myths, misconceptions and false perceptions fuel vaccine hesitancy, leading to poor vaccine coverage as reported by Johnson *et al.* (2020). Soares *et al.* (2021) identified several factors that were responsible for COVID-19 vaccine hesitancy, and they included lack of funds during the pandemic, lower years of age, lack of confidence or trust in the vaccine, and lack of trust in government measures towards reducing the disease spread as reasons that encouraged high hesitancy. In a report by Olawade *et al.* (2022), the major reasons for COVID-19 vaccine hesitancy highlighted by the respondents were concerns about vaccine side effects, a lack of trust in the authorities, vaccine efficacy and diverse mystical possibilities. Findings from this study are supported by another study carried out in Nigeria, which identified worsening of already existing ailments by the COVID-19 vaccine, life-

threatening side effects, safety concerns as a result of poor testing of the COVID-19 vaccine, inefficacy of the vaccine, lack of trust of the vaccine producers, and lack of trust of the government (Ojewale & Mukumbang, 2023).

Lastly, rumours of serious illness, side effects or death as a result of the vaccine were also factors that encouraged hesitancy among the participants. Again, the media, especially social media, did a great job in news circulation, many of which may have at best been untrue, yet were able to reset the minds of people towards rejecting the vaccine. Mohammad *et al.* (2021) reported fear of unknown side effects as a factor that dissuades vaccine acceptance.

The study is, however, faced with certain limitations. As a result of the small sample size and the fact that it was conducted within Benin metropolis, Benin City, Edo State, Nigeria, generalizing the findings across a larger population in other regions or countries may be somewhat inaccurate. Also, being a cross-sectional research design, it was not possible to establish a cause-effect relationship**.**

We recommend that there should be increased awareness regarding the safety and effectiveness of the COVID-19 vaccine. Likewise, the orientation and re-orientation of civil servants and the entire public on the need to be vaccinated to control further epidemics should be considered by the appropriate government authorities.

Conclusion

This study has shown that both healthcare and non-healthcare-providing civil servants exhibited a considerable hesitancy rate towards the COVID-19 vaccine owing to different perceived reasons. Vaccine-perceived safety concerns are associated with this refusal. Hence, intervention should be designed in terms of awareness of the safety and efficacy of the vaccine, which the media should champion using major languages and dialects for higher acceptability. This is important because unless wide acceptance of the vaccine is achieved, the coverage would not be enough to achieve herd immunity, and the transmission of the COVID virus would continue. Since the unwillingness to take the COVID vaccine was strongly related to its safety, it is important to create an intervention that would help build trust in people so that by taking the vaccine, there would be better coverage.

References

Adigwe, O. P. (2021). COVID-19 vaccine hesitancy and willingness to pay: emergent factors from a cross-sectional study in Nigeria. *Vaccine*, 10(9), https://doi.org/10.1016/j.jvacx.2021.100112.

Amuzie, C. I., Odini, F., Kalu, K. U., Izuka, M., Nwamoh, U., Emma-Ukaegbu, U. & Onyike, G. (2021). COVID-19 vaccine hesitancy among healthcare workers and its socio-demographic determinants in Abia State, Southeastern Nigeria: a cross-sectional study. *Pan African Medical Journal* 40(10).

Centre for Disease Control. (2019). COVID-19 overview and infection. https://www.cdc.gov/coronavirus/2019-ncov/index.html

Cohen, C., Kleynhans, J. & Gottberg, A. (2022). SARS-CoV-2 incidence, transmission, and reinfection in a rural and an urban setting: results of the PHIRST-C cohort study, South Africa, 2020–21. *The Lancet Infectious Diseases* 22(6):821-834.

Egielewa, P., Idogho, P. O., Iyalomhe, F. O., & Cirella, G. T. (2022). COVID-19 and digitized education: Analysis of online learning in Nigerian higher education. *E-Learning and Digital Media, 19*(1), 19–35.

Egielewa, P., Ngonso, B., Ate, A., Cirella, G. Iyalomhe, F. & Orebello, C. (2023). COVID-19 Television Audience Programme Choices: Analysis of How Nigerians Consume Television During the Pandemic In G.T Cirella(ed). *Uncertainty shock in Africa: Impacts and equilibrium strategies for sound economic and social development*. Springer Nature.

Ekhareafo, D. & Ngonso, B. F. (2013). Agenda setting for political communication: a study of one man one vote political campaign in Nigeria. *New Media and Mass Communication* 18: 1-8.

Elimian, K.O., Ochu, C.L., Ilori, E., Oladejo, J., Igumbor, E. & Steinhardt, L. (2020). Descriptive epidemiology of coronavirus disease 2019 in Nigeria. *Epidemiol infect.* 148: 208.

Emeka, C., Edu, B., Ekpenyong, J., Getachew, B., Chabo, J., Abdurhaman, U.P., Ntui, N.B., Chukwu, E. & Ekpenyong, N. (2022). COVID-19 vaccine roll-out at the community level in developing countries: Lessons learnt from Cross River State, Nigeria. *Public Health in Practice* 4 (2022) 100273

Ilikannu, S.O., Uwadia, O. M. & Enyi, I. (2022). COVID-19 Vaccine Hesitancy Among Patients Attending the General Outpatient Clinic in a Tertiary Hospital in Southern Nigeria. *Cureus* 14(9): e29352

Johnson, N.F., Velasquez, N. & Restrepo, N.L. (2020). The online Competition between pro and anti-vaccination Views. *Nature* 582: 230-233.

Muhammad, E., Ahmed, A., Abdulmueti, A., Amel, H., Entisar, A., Mawadda, D., Sanabel, A., Omaymah, A., Mohammed, A., Aimen, A., Abdulhamid, S., Saja, M., Nehal, A., Eman, B., Qasi, N., Khawla, D., Najwa, S., Rayan, B., Marwan, A., Ayman, H., Khadeejah, A., Eman, A., Khadeejah, A.L., Naeimah, L., Mohamed, A.N., Abobaker, E. Monther, A., Kamal, A., Enas. A., Muad, A., Wesal, A., Aisha, J., Ala, K., Ahmed, Z. & Ahmed, M. (2021). Knowledge, attitude and acceptance of healthcare workers and the public regarding the COVID-19 vaccine: a cross-sectional study. *BMC Public Health* **21**(955)

National Primary Health Care Development Agency. (2022). COVID-19 Vaccination Update https://nphcda.gov.ng/

Ngonso, B. & Egielewa, P. (2018). When values change values: Assessing how social media changes Nigeria youth communication patterns and values. *International Journal of New Media and Mass Communication* 68: 1-8.

Ngonso, B. (2021). Using the radio: Appraising NGO's COVID-19 safety awareness campaign in Nigeria. *International Journal of Language and Media Studies* 1(1): 123-132.

Ngonso, B. & Chukwu, J. (2021). COVID-19 pandemic's Broadcast media messages' consumption in rural community and behavioural change. *International Journal of Communication and Society* 3(1): 12-19.

Ngonso, B., Egielewa, P, Cirella, G., Iyalomhe, F. & Orebello, C. (2023). Influence of Big Brother Naija Lockdown 2020 Edition Reality Show on Nigerians' Value Orientation During the COVID-19 Lockdown Measures. In: Cirella, G.T (ed.). *Uncertainty shock in Africa: Impacts and equilibrium strategies for sound economic and social development*. Springer Nature.

Ngonso, B. F., Atairet, A. T. Bassey, B. E. & Egielewa, P. E. (2023). Media and society: The controversy in a political system. *New Media and Mass Communication, 104*, 99-106.

Ojewale, L.Y. & Mukumbang, F.C. (2023). COVID-19 vaccine hesitancy among Nigerians living with noncommunicable diseases: a qualitative study. *British Medical Journal* 13,

Olawade, D. B., Wada, O.Z., Odetayo, A., Akeju, O.O., Asaolu, F.T. & Owojori, G.O. (2022). COVID-19 vaccine hesitancy among Nigerian youths: Case study of students in Southwestern Nigeria. *Journal of Education and Health Promotion* 11: 244-253.

Oluwatemitope, O.C., Kehinde, S.V., Felicia, U.B., Olabisi, O.A., Eziashi, A. E. & Martin, I.C. (2021). Predictors of uptake of a potential Covid-19 vaccine among Nigerian Adults. Med Rxiv., 1-21

Quinn, S. C., Jameson, A.M., An, J., Hancock, G.R. & Freimuth V.S. (2019). Measuring vaccine hesitancy. *Vaccine,* 37, 1168-1179.

Reiter, P. L., Pennell, M. L. & Katz, M. L. (2020). Acceptability of a COVID-19 vaccine among adults in the United States: How many people would get vaccinated? *Vaccine* 38: 6500–6507

Soares, P., Rocha, J. V., Moniz, M., Gama, A., Laires, P.A., Pedro, A.R., Dias, S., Leite, A. & Nunes, C. (2021). Factors Associated with COVID-19 Vaccine Hesitancy. *Vaccines,* 9(3), 300-312.

Uchenunu, A. & Ngonso, B. (2021). Television news framing and the social media gab on COVID-19 pandemic. *Journalism and Media,* 2(1), 14-32.

Ukhurebor, E., Aigbe, U., Onyancha, R., Uk-Eghonghon., G., Balogun, V., Egielewa, P., Ngonso,
B., Osibote, O., Imoisi, A., Ndunagu, J., Kusuma, H., & Darmokoesoemo, H. (2022). Greenhouse gas emission: Perception during the COVID-19 pandemic. *BioMed Research International.* DOI: 10.1155/2022/6166276

Williams, L., Gallant, A. J. & Rasmussen, S. (2020). Towards intervention development to increase the update of COVID-19 vaccination among those at high risk: Outlining evidence-based and theoretically informed future intervention content. *Br. J. Health Psychol.* 25: 1039-54.

World Health Organization (2023). COVID-19 Weekly Epidemiological Update (Edition 138). https://www.who.int/publications/m/item/weekly-epidemiological-update-on-covid-19---13-april-2023