



Socio-cultural factors and acceptance of COVID-19 vaccines: A rapid cross-sectional qualitative study.

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Abstract

As a result of the perceived infringement of COVID-19 prophylactic measures on people's freedom as well as their socio-cultural and economic lives, only vaccination has remained, while people have reverted to their respective normal ways of life that portray that the COVID-19 pandemic is over without waiting for the declaration of the World Health Organization. However, almost two years after the discovery of medically approved vaccines for this novel coronavirus, reports have indicated Nigerians' skepticism about the acceptance of the vaccines. A large number of studies on the acceptance of COVID-19 vaccines were internet-based and largely employed quantitative approaches. This condition has resulted in a dearth of qualitative approaches to explore socio-cultural factors influencing the acceptance of the vaccine. Therefore, the sole objective of this study was to discover the current socio-cultural factors influencing the acceptance of the medically approved vaccines using a qualitative approach. Roger's diffusion of innovation theory was utilized to explain the continuum of the acceptance of the vaccine.

The study covered the highly dense residential areas of the Southwest zone of Nigeria. Purposive sampling was adopted to select the 6 State capitals of the zone, each of which 3 electoral wards were purposively selected, making a total of 18 electoral wards. Meanwhile, four informants (2 males and 2 females) who were residents of the study location with several parameters were purposively selected, making a total sample size of 72 for the study. An in-depth face-to-face interview was employed to gather the primary data for this study. The study utilized an interview guide that contained unstructured questions that centered on the sole objective of this study. Both thematic and content analyses were utilized to analyze the collected data. The study found that predestination, belief in supernatural healing, misconception of the vaccine as the satanic mark-666; birth rate control means, economic issues, social vices, political activities and crises, tradi-medical practices, ethnocentrism, and stigmatization were the major factors influencing the acceptance of the vaccines. The study concluded that there were several socio-



cultural factors that prevented people from taking the approved vaccine in the study location.

Keywords: socio-cultural factors, COVID-19 vaccine, acceptance, supernatural healing, predestination

Introduction

The adverse effects of coronavirus disease, in particular, in the bodies of people with underlining ailments or low immune systems and the aged, have become a concern of the World Health Organization (WHO) and the Nigerian government. Moreover, the rate of the spread of the novel COVID-19 and its adverse effects on people's general well-being, economic and social activities prompted the WHO to declare the virus a pandemic in the early 2020s and emphasize the need for swift response and global implementation of mitigating measures. Therefore, in response to the clarion call that WHO made, health-concerned international and national bodies as well as medical practitioners recommended several COVID-19 prophylactic measures and other various means of curtailing the spread of the disease. Some of these precautions include frequent hand-washing, the use of a nose mask, self-isolation, maintaining social distance, and travel bans as international agencies such as the WHO and Disease Control Centres declare vaccines to be unavailable (Zakar *et al.*, 2021).

Nigerian governments at different levels, via the advice of the Nigeria Centre for Disease Control (NCDC, 2022), adopted these measures (Agusi, 2020). Among the initial measures that the Nigerian government adopted and implemented included border closure to prevent transnational movement and total restriction of people's movement within the country, as people are the main carriers of the virus while others. Other measures include quarantine for the infected people and compulsory use of the nose-mast for everybody. Empirical studies have reported a reduction in the adverse effects of vaccine-preventable diseases such as hepatitis B, measles, and polio, among others, via regular intervention of vaccination programmes both in advanced and developing countries (Broniatowski *et al.*, 2019; Kaufmann & Feldbaum, 2009; Yahya, 2007; Obadare, 2006). Moreover, the negative impacts of the disease have prompted scientists to embark on making effective curative medicine to curb the menace of the disease. Therefore, in the first quarters of the year 2021, almost 90 different kinds of vaccines were tested; moreover, after a series of preclinical trials and phases of testing, only 2 vaccines, namely Moderna and Pfizer-BioNTech, were medically approved, while Pfizer is more popularly accepted among the countries of the world (Le *et al.*, 2020). The discovery of the COVID-19 vaccine translates to giving hope of survival to the infected people and the chance of not contracting the virus to those that are not infected



(WHO, 2020). Therefore, being vaccinated against the disease becomes the latest disease's prophylactic measure.

All of these measures underscore the significant role that individuals' behaviour plays in curbing the spread of COVID-19 (Nivette *et al.*, 2021; Hager, *et al.*, 2020). Also, the implementation, coupled with the effectiveness of all the designed measures to prevent contracting COVID-19, mainly hinges on the attitude and behaviour of the people. Devising and adopting measures to curtail the spread of the disease is in conformity with the philosophical stance of public health that emphasizes prevention of disease and promoting the wellbeing of people instead of finding curative measures for the victims of the disease (Ajani & Fakunle, 2021). However, there have been a number of reports of a series of protests in both advanced and developing countries against most of these measures as people perceive that the measures infringe on their freedom and affect their socio-cultural and economic lives (Muoghalu & Fakunle, 2021; Okunola & Fakunle, 2021; Fakun & Ajani, 2021; Rzymiski, 2021; Solis, *et al.*, 2021; Hassan *et al.*, 2020; Ilesanmi & Afolabi, 2020; Oleribe, *et al.*, 2020). Therefore, the concerned authorities in these countries have relaxed virtually all of these measures, except only vaccination, which still remains highly recommended for everybody. Hence, people have reverted to their respective normal ways of life, which implies that the COVID-19 pandemic is over without waiting for the declaration of the WHO.

In spite of the concerted efforts of the WHO, pharmaceutical industries, pharmaceutical journals, medical practitioners, and others to find a vaccine to curb the spread and menace of the virus, coupled with their success in discovering the vaccine, a plethora of studies have reported low acceptability of the vaccines in several advanced and developing countries at the early stage of introducing the vaccine (Josiah & Kantaris, 2021; Quinn, *et al.*, 2021; Dror *et al.*, 2020; Harapan, *et al.*, 2020; Xiao & Wong, 2020). These studies cited perceptions, beliefs, information sources, cultural backgrounds, chronological age, and other socio-demographic and economic conditions of people as the determining factors of vaccine hesitancy and poor general acceptability of the vaccine in these countries. According to WHO (2022), as of the end of the first quarter of 2022, almost three years after the outbreak of COVID-19 and almost a year after WHO approved the taking of the vaccine, only 33,932,163 people in Nigeria have taken the vaccine out of a population of 215,924,318 (Worldometer, April 2022). These reports showed that just almost 16 per cent of the people in the country have taken the vaccine. The government's efforts manifested in the form of organizing a series of sensitization programmes and forcible implementation of giving the vaccine with a lot of fights between the government and people (especially public sector workers) and making receiving the COVID-19 vaccine one of the basic requirements for students who intend to sit the Unified Tertiary Matriculation Examination (UTME) that is conducted yearly to admit students. These reports represent an



indication of Nigerians' skepticism about the acceptance of the vaccine. The novelty of the current study manifests in its attempt to identify the current socio-cultural factors influencing general acceptance of the COVID-19 vaccine despite the fact that the availability of the vaccine has been almost two years using a qualitative approach.

Review of relevant extant studies

People's acceptance of a new health intervention programme or vaccine

Reports of the low level of acceptability of newly introduced vaccines and of the challenges encountered by several other novel health interventions have permeated different eras of disease outbreaks in human history (Adejumo, 2021; Adigwe, 2021; Nilsson *et al.*, 2021; Abdelhafiz *et al.*, 2020; Kreps *et al.*, 2020; Halpin & Reid, 2019; Karafillakis *et al.*, 2019; Oku *et al.*, 2017; Spinney, 2017; MacDonald, 2015; Seale *et al.*, 2010; Setbon & Raude, 2010). These studies have highlighted several reasons that affect the wide acceptance of a newly introduced vaccine. These reasons include the concern about the disease severity and longevity in the body, the effect of the disease on the victims' social roles and lifestyles, the incidence of the disease infection, and the endorsement the vaccine receives from the authorities and medical experts. The level of people's awareness of the side-effects, risks, physiological and psychological indications of the vaccine, coupled with the broadcast and popularity of the contents, benefits, and effectiveness of the vaccine, are other reasons.

In the Netherlands, several factors, such as different lifestyles that different families adopt, perception of the adverse effects of the disease coupled with the efficacy of the available curative medication, previous experience, and the prevailing societal belief about the vaccine, influence the wide acceptance of the vaccine (Chirico & Nucera, 2020; Harmsen *et al.*, 2013). Moreover, other reasons that tend to further influence people who refuse to be vaccinated are embedded in other socio-cultural factors such as the stance of religion's beliefs, doctrines, practices, teachings of some clergy, and the confidence that the victims of a particular disease have in their respected spiritual leaders that speak against the efficacy and safety of being vaccinated. For instance, Harmsen, *et al.* (2013) cited the tenacious beliefs of the conservative Protestants that reside in the northern and south-western parts of Denmark in spiritual healing as a Biblical doctrine, constituting a major factor that prevents the people from taking vaccines in general. The polio vaccination programme in the Northern part of Nigeria is a typical example (Kaufmann & Feldbaum, 2009; Obadare, 2006; Yahya, 2007). According to these scholars, the major setback the programme suffers



is the beliefs of some Islamic sects coupled with some cleric teachings that diametrically oppose the programme.

Also, people's perception about the quality of information about the new vaccine is among these factors, as Doodoo, *et al.* (2007) reported that several Ghanaians were skeptical about the use of vaccine to de-worm and the main reason cited for the rejection was the inadequacy of clarification of the purpose of the vaccine, which led to misinterpretation of the function of the vaccine in their bodies. Therefore, the study emphasized the importance of adequately enlightening the masses on the effects of any vaccine and other health intervention programs that are introduced into any community. According to studies, among the determining factors that influence wide acceptance of a newly introduced health-intervention program in any community are the ease with which the masses can access the program; the ability of the masses to bear the associated monetary cost; and the degree of certainty that the masses have in the effectiveness and absence of side effects of the program or the vaccine.

COVID-19 prophylactic measures and people's perceptions

In the wake of the outbreak of COVID-19, there are several prophylactic measures that the health-concerned international and national bodies as well as medical practitioners have recommended. The measures include regular hand-washing, use of nose-mask, self-isolation, keeping social distance, travel ban, and, later, being vaccinated. Studies have suggested that culture has an influence on people's exposure to coronavirus disease prevention and treatment (Bruns *et al.*, 2020; Enitan *et al.*, 2020; Hassan *et al.*, 2020; Ilesanmi & Afolabi, 2020). For instance, the fundamental aspect of curbing the spread of the disease requires adjustment in several cultural practices such as handshaking, kissing, hugging, and a large gathering of people, whereas people in African communities value traditional festivals that require the gathering of many people (Ajani & Fakunle, 2018), among others, while the novel coronavirus is not just very deadly but also contagious to anyone who comes into close contact or in close proximity with an infected person. However, governments in most African countries have relaxed virtually all of these measures while the emphasis is currently on vaccination for everybody (Bray *et al.*, 2021; Ditekemena *et al.*, 2021; Lazarus *et al.*, 2021).

There is a report that people accept that the outbreak of COVID-19 is the direct result of the experiment that some scientists in advanced countries intentionally carried out with the intent of discovering a new vaccine while the masses in African, Asian, and Caribbean countries are the subjects of this experiment to test the efficacy of the newly introduced vaccine (Premium Times, April 7 2022). Therefore, people in these geographical areas are skeptical about taking COVID-19 vaccines. This report indicated that the level of trust that the masses



have in the manufacturers of the vaccines and conveners of the programme, such as the policy makers or the organizing bodies, is among the factors that contribute to the success of any health intervention programme and newly introduced vaccine in any society. Moreover, the poor attitude of people towards the acceptance of the vaccine might result from people's perception that the concerned disease is of low risk, coupled with the belief in natural healing (Chirico & Nucera, 2020; Enitan *et al.*, 2020; Ogolodom *et al.*, 2020; Ogundele, 2020; Eskola, 2015). The report of WHO (2022) that more than three quarters of the COVID-19 patients have the probability of natural healing from the disease boosts the confidence that there is no need to be kept in an intensive care unit, while this tends to generate the misinterpretation that being vaccinated is not necessary.

A large number of studies on the acceptance of COVID-19 vaccines both in advanced and developing countries were internet-based and largely employed quantitative approaches. This condition has resulted in a dearth of qualitative approaches to explore socio-cultural factors influencing the acceptance of the vaccine among the residents of the southwestern part of Nigeria; hence, this study. From the viewpoint of change and development, the expected outcome of the authorities' efforts for almost two years to prompt people to accept COVID-19 vaccines is not in tandem with reality. Hence, the novelty of this current study manifests in its attempt to identify the current socio-cultural factors influencing general acceptance of the COVID-19 vaccine in spite of its being almost two years since the vaccine has been available using a qualitative approach.

Theoretical application

Among the theories developed to explain the continuum between rejection and acceptance of an innovation or a newly introduced idea is Roger's diffusion of innovation (2003). The theory identifies the innovators, early adopters, early majority, late majority, and laggards as the kinds of people that are in different stages in any society where an idea is newly introduced. According to the theory, innovators, early adopters, early majority, late majority, and laggards account for 2.5 percent, 13.5 percent, 34 percent, 30 percent, and 16 percent of the people in a society where a new idea is introduced, respectively. The innovators are the people that are ready and enthusiastic to experience the new idea as they are ready to bear the risks that come with the new idea. The early adopters are the people that tend to play leadership roles or the experts that other people consult for advice and vital information about the newly introduced idea, as their attitude towards the new idea plays a vital role in the wide acceptance or total rejection of the new idea. The early majority category refers to the people that are influential via their friendly interactions with other people in society. However, they are not



leaders or experts in the newly introduced idea. The early majority have a significant role to play in the spread of the new idea via their interpersonal network. The late majority are the people that ensure that a number of their colleagues have accepted and successfully utilized the new idea before they accept it. Therefore, this category of people doubt the efficacy or workability of the idea in its novelty form until their colleagues have used the new idea and testified to its desirability. The term "laggards" refers to people who are conservative and have a strong tendency to reject new ideas.

The theory further explains that an individual, a group of people, a region, or a country might be each of these categories. In the current study, the WHO-approved COVID-19 vaccine represents the new idea in relation to this theory. At the introduction of the vaccine, it is understandable that outright rejection was the attitude of the majority of Nigerians. However, from the binocular views of change and development, and with the concerted efforts of the mass media, the national and international bodies, the expected outcome is a change in this attitude. However, the percentage of Nigerians that are vaccinated has shown that reality is not in tandem with expectations. This theory's relevance manifests in the sole objective of the current study, which is to explore socio-cultural factors that currently influence acceptance of the approved COVID-19 vaccines.

Methodology

Study location, sampling techniques, sample size, methods of data collection and analysis

The current study utilized a multi-stage non-probability sampling method. The study was cross-sectional and exploratory in nature while a qualitative method, namely an in-depth face-to-face interview, was employed to gather the primary data for this study. The study covered the highly dense residential areas (or urban centres) of the Southwest geopolitical zone of Nigeria. The zone accommodates six states, namely, Osun, Oyo, Ogun, Ondo, Lagos, and Ekiti; cultural affinity is observable among the indigenous residents of these states. The current study considered each state capital to represent the urban centres of each state; therefore, purposive sampling was adopted to select each of the state capitals, namely, Osogbo, Ibadan, Abeokuta, Akure, Ikeja, and Ado-Ekiti. In each of these state capitals, 3 electoral wards that covered the highly dense residential areas were randomly selected. From each of the selected 18 electoral wards, 4 informants (2 males and 2 females) that were residents of the study location were purposively selected, making a total sample size of 72 for the study. Several parameters were utilized for the selection of the informants, including gender (to maintain gender balance), age (as the informants must be at least 20-years-old), being independent of the parents or other guardians, and being aware of the outbreak of COVID-19. Moreover, among the 4 informants from each ward, 2 must



have been vaccinated (acceptors) while the other 2 must not have been (non-acceptors), as of the period this study was conducted. The study utilized an interview guide that contained unstructured questions that centered on the sole objective of this study. Both thematic and content analyses were utilized to analyze the collected data. This study was carried out between January and mid-April 2022 in the study location.

Findings of the Study

(a) Informants' socio-economic characteristic

This study maintained gender balance with the purpose of data reliability while the focus of the study was not gender-based. As a result, half (50 percent) of the informants were men and half (50 percent) were women. The study included people of the ages of 20 and above. The informants between the age groups of 40 and 49 constituted the largest percentage (30.6 percent), while 25 percent of the informants were between the ages of 30 and 39. Furthermore, people aged 50–59 and 20–29 made up about 22 percent and nearly 14 percent of the informants, respectively, while people aged 60 and up made up about 8 percent. Data on the marital status of the informants showed that married people constituted the largest class, with a percentage of 68, followed by singles, at almost 21 percent. The divorcees constituted about 8 percent, while almost 3 percent of the informants had lost their spouse and had not remarried.

As of the time this study was carried out, data on the informants' level of formal education showed that almost 51 percent and 35 percent of the informants attended secondary schools and tertiary institutions, respectively, while primary education was the highest level of formal education for almost 14 percent of the informants. The informants either practiced Christianity, Islam, or the traditional religion. As a result, Muslims made up the largest percentage (48.6 percent) of the population, while Christians and traditionalists made up nearly 39 percent and 12 percent, respectively. All of the informants were employed. However, 44 percent worked in the private sector, 29 percent in government, and 26 percent were self-employed. The current study included the vaccination status of the informants. For data reliability purposes, half (50 percent) of the informants were COVID-19 vaccine acceptors and non-acceptors, respectively (as presented in appendix 1).

(b) Socio-cultural factors influencing the acceptance of COVID-19 vaccine

The findings of the current study showed that there are several social factors that influence wide acceptance of the COVID-19 vaccine in the study location. These factors include current national and international political crises and activities, the level of enlightenment



about the importance of the vaccine, and the influence of influential people or role models. Moreover, almost 90 percent of the informants opined that the focus of both the government and the media has shifted from emphasizing the significance of the vaccine and other measures to totally eradicate the disease. The focus is now on economic issues such as the incessant industrial workers' strike, the increase in the price of goods and political activities, in particular, the impending elections scheduled to take place in the year 2023. Other areas of focus include security issues such as banditry, terrorism, kidnapping and ritual killing. These outcomes are reflected in the extracts presented below:

Extract 1: IDI/29-year-old/Private sector worker/Christian/Vaccine-acceptor/Man/January 2022

'What I observe is that the rate at which the media emphasizes the significance of the vaccine has drastically reduced. For instance, just tune in your radio or television to one of these national stations. The focus is now on attaining successful senatorial and presidential elections in the year 2023, unlike as it was in the late 2020 and early 2021 when there was a massive campaign on taking the vaccine on the mass media and even when the government made it compulsory for its workers to take the vaccine and you couldn't travel out of the country without showing the document as evidence of being vaccinated.'

Extract 2: IDI/40-year-old/Public sector worker/Muslim/Vaccine non-acceptor/Man/April 2022

'The level of seriousness of the government about eradicating the disease has reduced, compared to what was available in 2020 and early 2021. The vaccine is no longer made compulsory for people; all that the government is currently concerned with is the success of the coming election and economic and security issues such as ritual killing, kidnapping, and incidents of banditry that are currently rampant in Nigeria. And all these tend to make people, like me, think the pandemic is over, so where do I need to get the vaccine!'

The current study even found that the issue of the invasion of Russia in Ukraine is currently trendier among people than the emphasis on being vaccinated. This finding is reflected in the extracts presented below:

Extract 3: IDI/25-year-old/Private sector worker/Christian/Vaccine-acceptor/Woman/April 2022



'I get to know more about the current happenings, in particular the Russians' invasion of Ukraine, even more than the COVID-19 vaccination in Nigeria via the Facebook platform. Also, the issues of kidnapping and ritual killings are the current issues I perceive the Nigerian government is mainly concerned with. According to my observation, the issue of vaccination is least among the issues that the government currently faces.'

Extract 4: IDI/37-year-old/Public sector worker/Muslim/Vaccine non-acceptor/Woman/April 2022

'I perceive that people no longer take the issue of COVID-19 vaccination seriously anymore. I observe that the decrease in the level of seriousness was due to the preparation for the forthcoming elections into political offices and the industrial workers' strike, coupled with the incessant loss of people's lives as a result of ritual killing, banditry, terrorism, kidnapping at home (Nigeria) and the panic about the third world war generated by the Russia-Ukraine war.'

(c) Religious factors (predestination, belief in supernatural healing, misconception of the vaccine as the satanic mark-666 and birth rate control means)

This study found that the majority (82 percent) of the informants that rejected the vaccine cited their beliefs as one of the major factors. Moreover, the study discovered that there were a variety of forms of these beliefs. For instance, several informants considered the outbreak of the disease as the resultant calamity of the abundant and uncontrollable sins of people against a supernatural being that in return punishes people with the outbreak of the disease. While some informants opined that the pandemic is one of the signs indicating the end of the universe, other informants emphasized predestination, which means a supernatural being created the whole universe with allotted time for happenings to manifest and the appropriate time has come for the universe to cease to exist for the Saints to be taken to another universe. The notion here is that the vaccine is ineffective to cure or curb the spread of the disease except that the Supreme Being willingly averts the pandemic. The convergence of these diverse but related beliefs is that the COVID-19 vaccine is not the antidote to curb the spread of the disease; hence, these informants refused to be vaccinated as the extracts below reflect these outcomes.

Extract 5: IDI/27-year-old/Self-employed/Christian/Vaccine non-acceptor/Man/January 2022

'In my church, we believe in supernatural healing as it is a part of our doctrine. We largely make use of anointing



oil, water, and mantle for faith healing from all forms of diseases. So whenever I'm sick, I use the anointed oil my pastor has blessedly given to me. Moreover, I personally believe that there is nothing God can't do, so why do I need to trouble myself with getting the vaccine!'

Extract 6: IDI/53-year-old/Public sectors worker/Muslim/Vaccine non-acceptor/Woman/April 2022

'I believe in Allah's omniscience and omnipotence. He (God/Allah) knows the end, even right from the beginning, and he is able to do all things. He had already known the pandemic would come and had already known those that would be saved, especially those that were on his side. The pandemic, as far as I'm concerned, is all about punishing people for their bad behaviour and social vices that are rampant these days. Allah is using the disease to fight the human race for their crimes against humanity. So, the main solution as well as the vaccine to the pandemic is to confess our sins, seek His (Allah's) face, walk in His way, and He will heal us, and end the pandemic.'

Several informants stated that their employers forced them to accept the vaccine despite their religious beliefs, which attribute different interpretations to the coronavirus outbreak.

Extract 7: IDI/38-year-old/Public sectors worker/Christian/Vaccine acceptor/Man/February 2022

'I am a civil servant. I took the vaccine by force, as the government made it compulsory for its workers. The doors of our offices were locked and nobody was allowed to enter the office until they showed evidence of having received the vaccine. However, from the binocular view of the teachings of our cleric, the vaccine is not the solution to the pandemic. Only that people need to seek the face of God and this calamity will stop. Don't you see now that people have prayed? Don't you (referring to the researcher) see that the rate of the spread of the disease has been reduced?'

While the researcher tried to inform this informant that the World Health Organization (WHO) and the experts are yet to declare that the pandemic is over. The response of the informant was as follows:

"Why should we wait until the WHO's declaration? This is practical; it is observable that the pandemic is over; people are now doing their daily activities just as before the outbreak of the disease. And if you look



at the record of the spread of the disease, you will see that the pandemic is almost over, and I believe it is because people prayed to God, and in His infinite mercy, He heard the prayer. Hear this (telling the researcher), at the beginning of the pandemic, when people took the vaccine, many people that were vaccinated still died, according to the news from advanced countries.

Moreover, the current study found a link between some religious teachings and the erroneous belief that the introduction of the COVID-19 vaccine is an attempt to insert microchips into the body of the acceptor in fulfillment of the prophecy that people would receive a sign that enables the authorities to remotely control them. Also, findings from the current study indicated that people erroneously believe that the vaccine is a way to control their birth rate, which is against the doctrine of their religion. This erroneous belief also accounts for people's rejection of the vaccine. The extracts below reflect these findings:

Extract 8: IDI/42-year-old/Self-employed/Christian/Vaccine non-acceptor/Woman/April 2022

'There is no way I will accept the vaccine. We are told that giving the vaccine is to fulfill the prophecy that a time would come when people would be given the mark of 666 through injection in their bodies. I don't want to be a part of this, come what may!'

Extract 9: IDI/50-year-old/Private sector worker/Muslim/Vaccine non-acceptor/Man/March 2022

'I've heard a lot about the COVID-19 vaccine from people around me and from my cleric. For example, my cleric preaches diametrically against accepting the vaccine, claiming that Allah does not support the vaccine because it is one method of controlling human fertility, which goes against Allah's command to be fruitful and multiply.'

(d) Cultural factors (trado-medical practices, ethnocentrism, and stigmatization)

The significance of culture in the acceptance of a newly introduced idea cannot be overemphasized. Therefore, the current study explored the influence of culture on the popularity of the COVID-19 vaccine. The study found several reasons that were related to the cultural practices of people for their refusal to accept the vaccine. For instance, the gathered data indicated that the popularity of trado-



medical practices is observable in the region. Therefore, findings showed that belief in the efficacy of traditional medicines has affected the acceptance of COVID-19 that is imported from foreign countries among the residents of the region. Moreover, the current study found that some of the informants believe that people in foreign countries are ethnocentric, and therefore, the producers of the vaccine in foreign lands might have the intention of using Africans as specimens to test the new vaccine. The extracts below reflect these findings.

Extract 10: IDI/54-year-old/Self-employed/Traditionalist/Vaccine non-acceptor/Man/January 2022

'I believe in the consumption of locally made vaccines, popularly known as concoctions. I have been using the local vaccines and I have found them to be effective. Even though we heard that no local vaccine has been made to cure COVID-19, however, I will wait till such a vaccine is discovered. Meanwhile, I'm not sick and I don't think I have been infected with the disease, so why do I have to take a vaccine from a foreign land?'

Extract 11: IDI/40-year-old/Self-employed/Christian/Vaccine non-acceptor/Woman/April 2022

'Well, I believe in supernatural healing. However, I take vaccines sometimes too. I prefer taking traditionally blended concoctions as I believe in their efficacy more than these modern vaccines, mainly because of their side-effects. I don't accept that there is a disease that can't be supernaturally cured or with the use of traditional methods; it's only a matter of time. I am skeptical about taking the COVID-19 vaccines that were imported from foreign lands. I am afraid of taking medicine that is prepared in a rush. I heard from people that the advanced countries wanted to use us in Africa as specimens for these imported vaccines, and I can't volunteer myself for that.'

Extract 12: IDI/26-year-old/Self-employed/Traditionalist/Vaccine non-acceptor/Woman/April 2022

'I have yet to take the imported COVID-19 vaccine as I doubt the quality of the vaccine that was produced within the very limited time that was allocated for the testing of the vaccine. The vaccine may be effective for the time being, but who knows what effects it will have on the acceptor's body in



the near future? How can someone want to use fellow human beings as the specimen to test a vaccine that has just been prepared?'

Here, the informant was alluding to the statements of two French scientists made on April 2, 2020 that suggested using Africans as the specimen and therefore turning Africa over to the laboratory to test the potency and side-effects of the novel COVID-19 vaccine. The researcher of the current study endeavored to inform the informant that the World Health Organization had dismissed the suggestion and even declared the statement racist. However, the study found that the informant was adamant. Moreover, the researcher drew the attention of the informant to a series of stages and phases that the approved vaccines had passed through before they were endorsed by the medical experts and authorities. However, the informant employed the records of deaths in advanced countries to maintain her position. This is presented as follows:

'I still maintain my stand. I don't want to die. It sounds so ironic to you! (Laughing) You see, I don't want to die as I'm living well. A number of people in advanced countries that took the vaccines still died, but look at me. I'm alive. And there's no way I can take the vaccine. The news we hear about the record of deaths, even from the advanced countries where the vaccine is popularly accepted, is alarming, whereas here (in developing countries), the number of deaths is minimal and comparable to that of the advanced countries. I can't be a specimen.'

The current study found that one significant cultural factor associated with forms of disease in the region is stigmatization. People attested to the stigmatization of victims of diseases such as leprosy, measles or smallpox, chickenpox, and HIV/AIDS in the study location. The diseases whose victims are stigmatized vary among different ethnic groups. Findings from the current study indicated that before the advent of the novel coronavirus disease, victims of HIV/AIDS and leprosy in the study location mostly attracted stigmatization. On top of that, as a result of the rate at which coronavirus disease spreads, stigmatization attached to coronavirus disease is alarming, and the current study found that several people under this study (that are vaccine acceptors) are faced with stigmatization, mockery, and, on several occasions, discrimination from some of their peers. The extract below reflects this finding:

Extract 13: IDI/34-year-old/Private sector worker/Traditionalist/Vaccine non-acceptor/Man/April 2022

'Besides the information I heard that foreign scientists want to use Africans as specimens, some of my



friends mock other people that take COVID-19 injections on the basis that these acceptors present themselves as specimens to test the efficacy of the vaccine. I don't want to be made an object of ridicule, so I'm not interested in taking the vaccine.'

Extract 14: IDI/68-year-old/Public sector worker/Christian/Vaccine-acceptor/Woman/January 2022

'Victims of leprosy and measles are secluded until they are healed, and if they are not healed, they are secluded for the rest of their lives. This is to curb the number of people infected with leprosy. When the coronavirus disease came to my area, any known person that had contact with the disease was also secluded. Moreover, when the vaccine was discovered and sent to us in Nigeria, you had to be silent about it so that other people would not mock you. Although the acceptors of the vaccine are not secluded, people mock them and call them guinea fowl in my area when they know them.'

When the field researcher asked the informant the reason for calling the vaccine acceptors guinea fowl, the response was as follows:

'The acceptors are nicknamed "guinea fowls" because coronavirus disease is misconstrued in my area to be a disease known as wryneck that usually attacks chickens. Chickens are usually injected so that they will not contract the disease. Therefore, people see the vaccine acceptors as those that are injected to be immune to COVID-19. However, I don't mind people. I got vaccinated.'

Extract 15: IDI/76-year-old/Self-employed/Muslim/Vaccine-acceptor/Man/March 2022

'The same kind of looks people give to HIV/AIDS victims is given to the victims of COVID-19 in my area. The victims are fondly called "onkoro" (that is, people-with-coro). The same dishonour is given to those that take the COVID-19 vaccine, only that the rate at which people mock the vaccine acceptors has now reduced compared to the rate when the vaccine was first introduced.'

Discussion of findings

The current study found that several social factors influenced the wide acceptance of the COVID-19 vaccine in the study location. This



outcome is in line with the findings of Zakar (2021) in Punjab, Pakistan, Ditekemena, *et al.* (2021) and Nzaji, *et al.* (2020) in Democratic Republic of Congo, Abdelhafiz, *et al.* (2020) in Egypt, Chirico and Nucera (2020) in Italy, and the report of Goodman and Carmichael (2020) in Britain, Ogolodom, *et al.* (2020) in the core Southern part of Nigeria. These factors include current national and international political crises and activities; level of enlightenment about the importance of the vaccine; influence of influential people or role models; security issues such as banditry, terrorism, kidnapping, and ritual killing; and a shift in the government's and media's focus from emphasizing the importance of the vaccine to economic issues. As of the period that the current study was conducted, the academic staff members of public universities in Nigeria were on a nation-wide strike while a series of negotiations were going on between the association of these workers and the government.

Moreover, the current study is in line with extant studies such as Chirico and Nucera (2020), Agusi (2020), Harmsen, *et al.* (2013), Kaufmann and Feldbaum (2009), Yahya (2007), and Obadare (2006) that discovered that religious factors immensely affect the wide acceptance of not only the novel coronavirus vaccines and other measures to curb the spread of the disease but also a newly introduced vaccine. According to these studies, religious factors are embedded in religious teachings and doctrines; the belief that a supernatural being is responsible for the pandemic; that the pandemic is one of the signs of the end of the universe; and therefore the pandemic is bound to feature in the world timeline. Hence, the vaccine is not the solution to the disease except that the supernatural being willingly averts the pandemic.

The findings of the current study support the erroneous belief that the introduction of the COVID-19 vaccine was an attempt to insert microchips into the body of the acceptor, in tandem with the report of Goodman and Carmichael (2020) on the conspiracy theory about the vaccine. In the same vein, the outcome of the current study showed that people's misconception that the COVID-19 vaccine was developed to control people, in particular their birthrate, supported the findings of Kaufmann and Feldbaum (2009), Yahya (2007) and Obadare (2006), where people boycotted the polio immunization in Northern Nigeria as they misconceived the immunization as a pill to control their birthrate.

Also, on the influence of culture on the popularity of the COVID-19 vaccine, the current study corroborated Adejumo (2021), Josiah and Kantaris (2021), Lazarus, *et al.* (2021), Muoghalu and Fakunle (2021), Nivette, *et al.* (2021), Bruns, *et al.* (2020), Enitan *et al.* (2020), Bednarczyk (2018) that found the influence of culture on rejection of the vaccine. These extant studies include the current study, which discovered that the trust people have in the efficacy of traditional medicine has affected the acceptance of the imported vaccines for



the novel coronavirus. The current study confirmed the Premiums Times (2022) report that people perceived the scientists who discovered the imported vaccines as ethnocentric, with the intention of using Africans as test subjects for the new vaccine. Still on the influence of culture on vaccination, the current study supported the findings of Bruns, *et al.* (2020) as well as Perry and Donini-Lenhoff (2010) that people's consideration of culturally contextual stigmatization risk, discrimination, and being made an object of ridicule influences their acceptance of the vaccine.

Conclusion and prospects for future research

The study concluded that several socio-cultural factors were influencing widespread acceptance of the approved COVID-19 vaccine among residents of the study location at the time of the study. The study's findings revealed that the socio-cultural factors included predestination, which is the belief that a supreme being has predetermined a time for the outbreak of the novel coronavirus, also known as COVID-19, and that this has made the disease beyond human control, and people's belief in supernatural healing from the disease; thus, taking any man-made approved vaccine is ineffective. Moreover, other socio-cultural factors that the study discovered were the misinterpretation of the vaccine as the satanic mark-666 and the misconception of the vaccine as being among birth rate control methods.

Also, this study demonstrated that the shift of the government's focus from forcing people to take the vaccine to economic issues such as incessant industrial strikes, an increase in the cost of living, and social vices such as banditry, terrorism, kidnapping, and ritual killing, as well as political activities, in particular, ensuring the success of the 2023 general election in the country, were among the factors. Other factors included tradi-medical practices, where people preferred taking concoctions or locally made herbal products to the imported vaccines; ethnocentrism; and stigmatization or mockery of the acceptors of the approved vaccine experience.

The sole purpose of this study was to highlight the socio-cultural factors that influence vaccine acceptance using a qualitative approach. As a result, the study's findings advocated for future research that will provide practical solutions to the identified socio-cultural barriers to vaccine acceptance from an emic viewpoint as a way to promote public health.

References

Abdelhafiz, A. S. *et al.* (2020). Knowledge, perceptions, and attitude of Egyptians towards the



novel coronavirus disease (COVID-19). *J Community Health*: 45(5), 881–90.

Adejumo, O. A. (2021). Perceptions of the COVID-19 vaccine and willingness to receive

vaccination among health workers in Nigeria. *Osong Public Health and Research Perspectives*: 12(4), 236–243.
<https://doi.org/10.24171/j.phrp.2021.0023>

Adigwe, O. P. (2021). COVID-19 vaccine hesitancy and willingness to pay: Emergent factors from a cross-sectional study in Nigeria. *Vaccine: X* 9 (2021) 100112, 1–7

Agusi, E. R., (2020). The COVID-19 pandemic and social distancing in Nigeria: ignorance or defiance. *Pan Afr Med J*: 35(2 Supp 2):52. <https://doi.org/10.11604/pamj.supp.2020.35.2.23649>.

Ajani O. A., Fakunle S. O. (2021). Cultural Dimension of Environmental Problems: A Critical Overview of Waste Generation and Management in Nigeria, *American International Journal of Multidisciplinary Scientific Research*, 8(1), 1–15. <https://doi.org/10.46281/aijmsr.v8i1.1110>

Bednarczyk, R. A. (2018). Examining the “why” of vaccine hesitancy. *Health Psychol.*: 37(4), 316–317. <https://doi.org/10.1037/hea0000596> PMID:296

Bray, L. et al. (2021). “People play it down and tell me it can’t kill people, but I know people are dying each .day”. Children’s health literacy relating to a global pandemic (COVID-19); an international cross sectional study. *PLoS ONE*:16 (2), e0246405.

Broniatowski, D. A. et al. (2019). Facebook Pages, the “Disneyland” Measles Outbreak, and Promotion of Vaccine Refusal as a Civil Right, 2009–2019. *Am J Public Health*: 110(S3),S312–8.

Bruns, D. P., et al. (2020). COVID-19: Facts, Cultural considerations, and risk of stigmatization. *Journal of Transcultural Nursing*: 31(4), 326–336

Chirico, F., Nucera, G. (2020). An Italian experience of spirituality from the coronavirus pandemic. *J Relig Health*. (2020) 59:2193–5. doi: 10.1007/s10943-020-01036-1

Ditekemena, J. D., et al. (2021). COVID-19 vaccine acceptance in the Democratic Republic of Congo: a cross-sectional survey. *Vaccines* 2021;9(2):153. <https://doi.org/10.3390/vaccines9020153>.

Dodoo, A. et al. (2007). When rumors derail a mass de-worming exercise. *Lancet*: 370(9586),465–6.



Dror, A. A. *et al.* (2020). Vaccine hesitancy: the next challenge in the fight against COVID-19. *European Journal of Epidemiology*: 35(8), 775–9. <https://doi.org/10.1007/s10654-02000671-y>.

Enitan, S. S., *et al.* (2020). Assessment of Knowledge, Perception and Readiness of Nigerians to Participate in the COVID Vaccine Trial, International. *J Vaccines Immun.*: 4(1) <https://doi.org/10.16966/2470-9948.123>.

Eskola, J., (2015). SAGE Working Group on Vaccine Hesitancy. How to deal with vaccine hesitancy? *Vaccine*: 33(34), 4215–7. <https://doi.org/10.1016/j.vaccine.2015.04.043> PMID:25896378

Fakunle, S. O., Ajani, B. K. (2021). Peculiarities of ICT adoption in Nigeria. *Insights into Regional Development*, 3(4), 51-61. [http://doi.org/10.9770/IRD.2021.3.4\(4\)](http://doi.org/10.9770/IRD.2021.3.4(4))

Goodman, J., Carmichael, F. (2020). Coronavirus: Bill Gates 'microchip' conspiracy theory and other vaccine claims fact-checked. BBC News. 2020, May 30. (accessed on January 20, 2022) Retrieved from <https://www.bbc.com/news/52847648>.

Hager E., *et al.* (2020). Knowledge, attitude, and perceptions towards the 2019 Coronavirus Pandemic: A bi-nation survey in Africa. *PLoS One*: 15(7), e0236918. <https://doi.org/10.1371/journal.pone.0236918> PMID:32726340

Halpin, C., Reid, B. (2019). Attitudes and beliefs of healthcare workers about influenza vaccination. *Nursing Older People*: 31(2), 32–9. <https://doi.org/10.7748/nop.2019.e1154>.

Harapan, H. *et al.* (2020). Willingness-to-pay for a COVID-19 vaccine and its associated determinants in Indonesia. *Hum Vaccine Immun other*: 16(12):3074–80. <https://doi.org/10.1080/21645515.2020.1819741>

Harmsen, *et al.*, (2013). Why parents refuse childhood vaccination: A qualitative study using online focus groups. *BMC Public Health*: 16(13), 1183. doi: 10.1186/1471-2458-13-1183

Hassan Z., *et al.* (2020) Population risk factors for COVID-19 deaths in Nigeria at sub-national level. *Pan Afr Med Journal*: 35(2 Suppl 2):131.

Ilesanmi, O. S., Afolabi, A. A. (2020). Perception and practices during the COVID-19 pandemic in an urban community in Nigeria: a cross-sectional study. *Peer Journal*: 8(S1), e10038.

Josiah, B. O., Kantaris, M. (2021). Perception of covid-19 and acceptance of vaccination in Delta State Nigeria. *The Nigerian Health Journal*: 21, 2. http://www.tnhjph.com/index.php/tnhj/article/view/510/pdf_1



Karafillakis, E., *et al.* (2019). HPV vaccination in a context of public mistrust and uncertainty: a systematic literature review of determinants of HPV vaccine hesitancy in Europe. *Hum Vaccin Immunother*: 15(7–8):1615–27.

Kaufmann, J. R., Feldbaum, H. (2009). Diplomacy and the polio immunization boycott in Northern Nigeria. *Health Aff (Millwood)*. 2009 Jul-Aug;28(4):1091–101. <https://doi.org/10.1377/hlthaff.28.4.1091>
PMID:19597208

Kreps, S. *et al.* (2020). Factors Associated With US Adults' Likelihood of Accepting COVID-19 Vaccination. *JAMA Netw Open*: 3(10), e2025594.

Lazarus, J. V. *et al.* (2021). A global survey of potential acceptance of a COVID-19 vaccine. *Nat Med*: 27 (2), 225–8.
<https://doi.org/10.1038/s41591-020-1124-9>.

Le, T. T. *et al.* (2020). The COVID-19 vaccine development landscape. *Nat. Rev. Drug Discov.*:19, 305–306. doi: 10.1038/d41573-020-00073-5

MacDonald, N. E. (2015). Vaccine hesitancy: Definition, scope, and determinants. *Vaccine*: 33(34), 4161–4164.
<https://doi.org/10.1016/j.vaccine.2015.04.036>

Muoghalu, C. O., Fakunle, S. O. 2021. Socio-cultural binocular view of telemedicine in sub Saharan Africa: Potency, prospect, defect and danger. *American International Journal of Biology and Life Sciences*, 3(1), 18-27.

NCDC (2022). *COVID-19 outbreak in Nigeria situation report—Abuja*: Nigeria Centre for Disease Control.
<https://ncdc.gov.ng/themes/common/files/sitreps/0daa083aeed110eddba8937c1f90a6d9>.

Nilsson, S., *et al.* (2021). To be or not to be vaccinated against COVID-19 – The adolescents' perspective – A mixed-methods study in Sweden. *Vaccine*: X 9 100117.
<https://doi.org/10.1016/j.jvacx.2021.100117>

Nivette, A. *et al.* (2021). Non-compliance with COVID-19-related public health measures among young adults in Switzerland: Insights from a longitudinal cohort study. *Soc Sci Med*: 268, 113370.

Nzaji, M. K., *et al.* (2020). Acceptability of vaccination against COVID-19 among healthcare workers in the Democratic Republic of the Congo. *Pragm Observ Res*:11, 103.



Obadare, E. (2006). A crisis of trust: history, politics, religion and the polio controversy in Northern Nigeria. *Journal of Prejudice*: 39(3), 265–84. <https://doi.org/10.1080/00313220500198185>.

Ogolodom, M. P., et al. (2020). Knowledge, Attitudes and Fears of HealthCare Workers towards the Corona Virus Disease (COVID-19) Pandemic in South-South, Nigeria. *Health Sciences Journal*: 2020 Sp. 1 (2).

Ogundele, O. A. (2020). Vaccine hesitancy in Nigeria: Contributing factors–way forward. *Nigerian Journal of General Pract*: 18(1), 1–4. <https://doi.org/10.4103/1008-682X.275508>.

Oku. A., et al. (2017) Factors affecting the implementation of childhood vaccination communication strategies in Nigeria: a qualitative study. *BMC Public Health*: 17(1), 200.

Okunola, J. L., Fakunle, S. O. 2021. Community participation: a pragmatic solution to negative impacts of Covid-19 on household's socioeconomic lives. *Insights into Regional Development*, 3(4), 21-33. [http://doi.org/10.9770/IRD.2021.3.4\(2\)](http://doi.org/10.9770/IRD.2021.3.4(2))

Oleribe, O., et al. (2020). Public perception of COVID-19 management and response in Nigeria: a cross-sectional survey. *BMJ Open*: 10(10):e041936. <https://doi.org/10.1136/bmjopen-2020-041936> PMID:33055123

Perry, P., Donini-Lenhoff, F. (2010). Stigmatization complicates infectious disease management. *AMA Journal of Ethics*, 12(3), 225-230. <https://doi.org/10.1001/virtualmentor.2010.12.3.mhst1-1003>

Premium Times (2022). "WHO rejects using Africa as testing ground for coronavirus vaccine" (April 7 2022) Premiumtimesng.com retrieved from <https://www.premiumtimesng.com/news/top-news/386406-who-rejects-using-africa-as-testing-ground-for-coronavirussvaccine.html> on 11 May, 2022

Quinn, S. C., et al. (2021). Communicating effectively about emergency use authorization and vaccines in the COVID-19 pandemic. *Journal of Public Health*: 111(3):355–8. <https://doi.org/10.2105/AJPH.2020.306036>.

Rogers, E. M. (2003). *Diffusion of innovations* (5th Edition). New York. The Free Press

Rzymiski, P., (2021). The Perception and attitudes toward COVID-19 vaccines: A cross-sectional study in Poland. *Vaccines*: 9(4), 382.

Seale, H., et al (2010). Why do I need it? I am not at risk! Public perceptions towards the



Pandemic. (H1N1) 2009. *vaccine Infect Dis.*: 10(1), 99. <https://doi.org/10.1186/1471-2334-10-99> PMID:20403201

Setbon, M., Raude, J. (2010). Factors in vaccination intention against the pandemic influenza A/H1N1. *Eur J Public Health*: 20(5), 490–4. <https://doi.org/10.1093/eurpub/ckq054>.

Solís, A. J. S. *et al.* (2021). COVID-19 vaccine acceptance and hesitancy in low- and middle-income countries. *Nat Med*: 27, 1385–1394. <https://doi.org/10.1038/s41591-021-01454-y>

Spinney, L. (2017). *Pale rider: The Spanish flu of 1918 and how it changed the world*. NewYork, NY: Public Affairs.

World Health Organization. (2020). *Public statement for collaboration on COVID-19 vaccine Development*: World Health Organization.

Worldometer. (2022). Current World population. (Accessed on April 14, 2022) Available at <https://www.worldometers>

Xiao, X., Wong, R. M. (2020). Vaccine hesitancy and perceived behavioural control: a metaanalysis. *Vaccine*: 38(33), 5131–8. <https://doi.org/10.1016/j.vaccine.2020.04.076>.

Yahya, M. (2007). Polio vaccines—“no thank you!” Barriers to polio eradication in Northern Nigeria. *Afr Aff (London)*: 106(423), 185–204. <https://doi.org/10.1093/afraf/adm016>

Zakar, R., (2021). Sociocultural Challenges in the Implementation of COVID-19 Public Health Measures: Results From a Qualitative Study in Punjab, Pakistan. *Front. Public Health*: 9:703825. doi: 10.3389/fpubh.2021.703825

Appendix 1
The informants' Socio-economic characteristics

Socio-economic characteristics	Frequency	Percentages
Sex distribution		
Male	36	50.0
Female	36	50.0
Total	72	100
Age-group distribution		
20-29 years	10	13.9
30-39 years	18	25.0
40-49 years	22	30.6
50-59 years	16	22.2
60 years and above	6	8.3
Total	72	100



Marital status		
Single	15	20.8
Married	49	68.1
Divorced	6	8.3
Widow	2	2.8
Total	72	100
Highest level of educational status		
No schooling	0	0.0
No schooling	4	5.6
Primary incomplete	6	8.3
Primary completed	17	23.6
Secondary incomplete	20	27.8
Secondary completed	25	34.7
Post secondary	72	100
Total		
Religion		
Christianity	28	38.9
Christianity	35	48.6
Islam	9	12.5
Traditional religion	72	100
Total		
Employer		
	21	29.2
Public sector	32	44.4
Private sector	19	26.4
Self-employed	72	100
Total		
Vaccination status		
	36	50.0
Acceptors	36	50.0
(vaccinated)	72	100
Non-acceptors (non-vaccinated)		
Total		

Author's Field Survey (2022)