Perception and Acceptance of COVID-19 Vaccination among Nurses Working in Selected Primary Healthcare Facilities in Ethiope East Local Government Area, Delta State

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Abstract

Background: Knowing that social distancing and quarantine slow the spread of the COVID-19 virus and flatten the epidemic curve; it may not be sufficient to completely halt the spread of COVID-19, herd immunity gained by infection or vaccination will need to be well established within the population. However, the availability of COVID-19 vaccines may not translate into its uptake. Aim: Thus, the researcher explored the perception and acceptance of COVID-19 vaccination among 200 Nurses working in selected primary healthcare facilities in Ethiope East Local Government Area of Delta State. Method: Purposeful sampling was used to access 200 Nurses, the data was collected using a closed-ended questionnaire and analysed electronically with a descriptive statistics package on SPSS version 25.0. Results: Findings revealed that the majority (60%) of nurses have a good perception towards COVID-19 vaccination and that a large majority (62%) will readily accept the uptake. Factors influencing the uptake include; the safety of a vaccine developed in an emergency, during an epidemic cannot be considered guaranteed, trust in the Ministry of Health and National to ensure that vaccines are safe, trust in science to develop safe effective new vaccines, trust in the authorities in the fight against COVID-19, the perception of not to be at considerable risk of developing complications and having had the COVID-19 disease. Conclusion: Findings revealed that the majority of nurses have a good perception towards COVID-19 vaccination while only a few had a poor perception, while one-third of the participants would reject COVID-19 vaccination, two third would readily accept the uptake

Keywords: Perception Acceptance COVID-19 vaccination Primary healthcare Nurses
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Introduction

In recent times a massive global human disaster was experienced due to the recent contagious respiratory infectious disease caused by the novel coronavirus (SARS-CoV-2) which holds the same veiled RNA structure resembling SARS-CoV-1 that caused the severe acute respiratory syndrome (SARS) outbreak (Rahman & Sathi, 2020). Classified by the World Health Organization (WHO) as a pandemic On March 12, 2020; The first cases of COVID-19 were identified in Wuhan, China at the end of December 2019. The virus has now affected virtually every country across the world and the number of deaths continued to rapidly increase (Fu et al., 2020).

Though social distancing and quarantine could slow the spread of the virus and flatten the epidemic curve; it was not sufficient to completely halt the spread of COVID-19, as herd immunity gained by infection or vaccination could not be readily established within the population (Fu et al., 2020). The most effective way of controlling infectious diseases is often vaccination and immunization, while success is challenged by individuals and groups who choose to delay or refuse vaccines (Paterson et al., 2016). To

help control the coronavirus disease (COVID-19) pandemic, unprecedented efforts were made to develop vaccines against this disease in some parts of the world.

Vaccines are one of the most reliable and cost-effective public health interventions ever implemented that are saving millions of lives each year. Following the deciphering of the genome sequence of SARS-CoV-2 in early 2020 and the declaration of the pandemic by WHO in March 2020, scientists and pharmaceutical companies were racing against time in efforts to develop vaccines (El-Elimat, T., AbuAlSamen, M. M., Almomani, B. A., Al-Sawalha, N. A., & Alali, F. Q. (2021).). As of December 22, 2020, at least 85 vaccines are in preclinical development in animals and 63 are in clinical development in humans, of which 43 are in Phase I; 21 are in Phase II, 18 are in Phase III, 6 have been approved for early or limited use, 2 have been approved for full use, and one vaccine has been abandoned (El-Elimat et al., 2021).   Pfizer-BioNTech's (BNT162b2) and Moderna (mRNA-1273) mRNA vaccines have been approved for emergency use in the US (El-Elimat et al., 2021). In Nigeria, the National Agency for Food and Drug Administration and Control (NAFDAC)has for the first time approved the use of the AstraZeneca vaccine early months of the year 2021 (NAFDAC, 2021). However, studies reveal the perception that vaccines developed in an emergency cannot be guaranteed safe, appeared to play an important role in the acceptance of COVID-19 vaccines. The perception of these vaccines' hypothetical risks is more influential than the perception of the harm potentially resulting from the pandemic. Yet, the consequences of the pandemic are widely documented and experienced individually (Verger et al., 2021). Furthermore, the availability of COVID-19 vaccines therefore may not translate into its uptake. Although governments will provide the vaccines, their uptake is voluntary (Dal-Ré et al., 2021).

The survey also found that distrust in the Ministry of Health to ensure vaccine safety

also seemed to play a role in lowering COVID-19 vaccine acceptance. Trust in the institutions through which information about vaccines is delivered is an essential driver of vaccine acceptance for the general population even among the Health Care Workers, as long as social context shapes how information is interpreted and used (Yaqub et al., 2014). This trust has been tested since the pandemic began by a number of controversies (e.g. effectiveness of masks and specific old or new drugs).

The Health Care Workers (HCWs) should be among the first to receive the vaccines as directed by the Federal Government of Nigeria (FMoH, 2021), however, it is often mistakenly believed that HCWs' attitudes must be positive towards vaccines because they have scientific and medical training (Verger et al., 2021). Nevertheless, HCWs are not a homogeneous group and most are not experts in the field of vaccination (Raude et al., 2016). Immunization and vaccination are moreover not an important part of their initial training, and professionals attracted by further education in this field tend to be those already 'convinced' about the benefits of vaccines (Kernéis et al., 2017).

The development of COVID-19 vaccines is a crucial challenge, after its clinical development, another challenge is the distribution and acceptance of the vaccine in the general population. The impact of the current pandemic on the intention to be vaccinated against COVID-19 with an approved vaccine has not made it unanimously accepted that if it were available, it would be obviously adopted (Peretti-Watel et al., 2020). For several months now, a number of studies in several countries have indicated negative attitudes towards future vaccines against COVID-19, in proportions of up to or exceeding 30–40% of the general population (Peretti-Watel et al., 2020). A principal reason for such attitudes seems to be the concern that the new vaccines will not be safe. Regarding HCWs, past experience with pandemic influenza vaccination suggests that

not all of them will agree to be vaccinated against COVID-19 (Peretti-Watel et al., 2020). However, currently, there are only a few publications about HCWs' acceptance to get vaccinated with COVID-19 vaccines and, to an extent, none about their intention to recommend these vaccines to their patients (Verger et al., 2021).

After hearing about poor vaccine quality and the false information conveyed by social media which has included rumours on the extermination of the black race through vaccination, healthcare workers including nurses may have developed vaccine hesitancy, which can influence their decisions to get vaccinated and to promote the vaccine to their patients (Agyekum et al., 2021). Since the announcement was made for the purchase of COVID-19 vaccines in Nigeria, there has been a mixed response as to whether or not to accept or refuse vaccination by several people in the country, including nurses. Surprisingly, limited studies have been conducted in Nigeria to determine the extent to which nurses will accept vaccination. Thus, the researcher seeks to explore the perception and acceptance of COVID-19 vaccination among nurses working in selected health facilities in Ethiope East Local Government Area, Delta State.

The broad objective of this study is to assess the perception and acceptance of COVID-19 vaccination among primary healthcare nurses working in selected health facilities in Ethiope East Local Government Area, Delta State, by Assessing the perception of primary healthcare nurses towards COVID-19 vaccination in selected health facilities in Ethiope East Local Government; determining the acceptance rate of COVID-19 vaccine among these nurses working in selected health facilities in Ethiope East Local Government and the factors influencing the acceptance or non-compliance of COVID-19 vaccine among these nurses working in selected health facilities in Ethiope East Local Government.

Nurses play a major contributory role in the administration of vaccine to the populace, and as such their own disposition towards the COVID-19 vaccine uptake will significantly have an impact on the way and manner the entire population accept the vaccine.

HCWs including nurses should be among the first to receive the vaccines, their concerns about the safety of these vaccines must be addressed as early as possible, and this study would find out the concerns and feelings of nurses regarding COVID-19 vaccination. The study will also provide a framework, guidelines, approaches and tools that would address this vaccination and the incidence of an emerging virus in the future

Method and Materials
This research was a descriptive study with a non-experimental research design. And was conducted in Ethiope-East LGA, Delta State, and the target population are nurses currently employed and practising in some selected primary healthcare (PHC) in Ethiope-East LGA, namely, Okpara inland PHC, Oria PHC, Okpara Waterside PHC and PHC Ovu Inland. According to data from the Delta State Ministry of Health (2021), the participating health facilities have in total of 200 nurses according to the following distribution.

Sample Size and Sampling Technique: A purposive sampling method was adopted for this study. The study respondents comprise all the two-hundred 200 nurses working in the selected primary healthcare facilities in Ethiope-East LGA, Delta State.

Instrument for Data Collection: A self-structured questionnaire was used as the instrument for data collection in this study. It was divided into 4 sections;
Section A; Demographic characteristics,
Section B; Perception of Nurses towards Covid-19 Vaccination
Section C; Acceptance of COVID-19 Vaccine among Nurses

Section D: Factors influencing the acceptance of covid-19 vaccine among nurses

Validity and Reliability of Research Instrument: The face and content validity of the instrument was authenticated by senior professional colleagues and   by matching its content with the research objective and questions to ensure congruency

Method of Data Collection: A face-to-face administration of a questionnaire was used for this study. The researcher administered the questionnaire to the participants over a one-week (7 days), period as efforts were made to meet Nurses on various shifts including those who were off duty and were allowed to return to work during this. Questionnaires were made available at the health centre and respondents were followed up to respond. A minimum of   1 hour was given to allow them to fill out the questionnaire before retrieving same.

Method of Data Analysis
Data collected was analysed using Statistical Package for Social Sciences (SPSS) version 25 and findings are presented using percentages, frequency distribution tables, and pie charts

Ethical Considerations
A signed letter of permission was obtained from the Ethiope West Local Government Council REF. NO EWLG. 11/T^2/52   and the study participants were clearly informed about the study in order to gain their informed consent. They were also informed about the confidentiality and anonymity of their responses and their right to withdraw from the study at any time.

Results

Table 1: Socio-demographic Characteristics of Respondents

Variables	Attributes	Frequency (N=200)	Percentage (%)
Age (years)			
	20-29	60	30
	30-39	84	42
	40-49	24	12
	≥50	32	16
Gender			
	Female	160	80
	Male	40	20
Religion			
	Christianity	164	82
	Islam	36	18
Marital Status			
	Married	174	87
	Single	24	12
	Widowed	2	1
Educational Qualification			
	RN	64	32
	Double Qualified	100	50
	BNSc	36	18
Work experience(in years)			
	1-10	72	36
	11-20	92	46
	21-30	20	10
	≥31	16	8

Table 2: Perception of the Nurses towards Covid-19 Vaccination

VARIABLES	YES (%)	NO (%)
Do you think that immunity against COVID-19 is sure	164(82)	36(18)
Do you trust the propaganda of office media about the COVID-19 vaccine?	120(60)	80(40)
Do you trust professional staff's advice?	200(100)	0(0)
Do you believe that the COVID-19 vaccine approved for license has been fully evaluated in clinical trials?	160(80)	40(20)
Will you advise your family members to get COVID-19 vaccination?	100(50)	100(50)
Will you take your children to get COVID-19 vaccination??	100(50)	100(50)

Table 2 shows the perception of Nurses towards COVID-19 vaccination, 82% think that immunity is sure.

Table 3: Acceptance of Covid-19 Vaccine among Primary Healthcare Nurses

| VARIABLES	AGREE (%)	DISAGREE (%)
Do you think COVID-19 can be prevented by vaccination?	160(80)	40(20)
It is not serious suffering from Sars-cov-2 infection so I do not need it	64(32)	136(68)
Are you likely to be infected with Sars-Cov-2?	100(50)	100(50)
Are you at greater risk of Sars-Cov-2 infection than other people?	200(100)	0(0)
If you have a Sars-Cov-2 infection, do you think you will suffer from more serious symptoms than others?	200(100)	0(0)
Do you think the global COVID-19 epidemic will last for a long time?	200(100)	0(0)
Will you accept to be vaccinated?	124(62)	76(38)
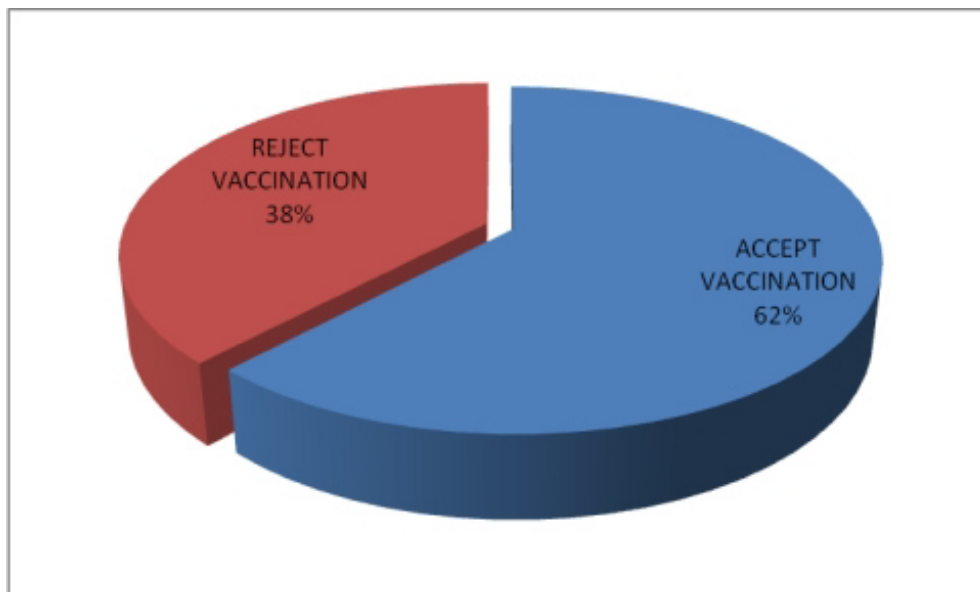
Figure 1: *Acceptance of Covid-19 Vaccine among Nurses*

While 38% of the participants will reject COVID-19 vaccination, 62% will readily accept the uptake. This acceptance of covid-19 vaccine is indicative of their willingness to take the vaccine as the majority of those who accepted this vaccine have already received same.

Table 3: Factors Influencing the Acceptance of Covid-19 Vaccine among Nurses

VARIABLES	AGREE (%)	DISAGREE (%)
The safety of a vaccine developed in an emergency, during an epidemic, cannot be considered guaranteed	128(64)	72(36)
I do not trust the Ministry of Health to ensure that vaccines are safe	120(60)	80(40)
I trust science to develop safe effective new vaccines	146(73)	54(27)
It is preferable to acquire immunity against infectious diseases naturally (by having the disease) than by vaccination	100(50)	100(50)
I trust in the authorities in the fight against COVID-19	84(42)	116(58)
I perceive myself not to be at considerable risk of developing complications	70(35)	130(65)
I already had the COVID-19 disease	46(23)	154(77)

Discussions

In the study, 30% of the participants are between the age of 20 and 29 years, with the majority being 42% between the age of 30-39 years, Meanwhile, 12% are between the age of 40-49 and 16% are above 50 years. This is expected as the research target population is a population involving civil servants and these age brackets are typical of any civil service working age. Also, 80% are females, This finding is a reflection of the study population involving the Nursing discipline which has more females owing to the general belief that nursing is a female-dominated profession; however, the number of males in the study shows that more and more male are picking interest in the profession and it is optimistic that in the no distant future, professional equity in terms of gender is likely to happen. as 82% practice Christianity, Again, this finding is not alarming due to the study setting. Being the southern part of the country, many are expected to practice Christianity religion as opposed to the northern part of the country where Islamic practice is the dominant religion. Again, 87% are married with 12% being single and a fraction of 1% being widowed. This relates to the target population's age, all being adults, hence, many more married ones are among the participants. Furthermore, about two-thirds are single-qualified with half being double-qualified and 18% having a degree. 36% have within 1-10 years of working experience with less than 10% having experience over 31 years. Meanwhile, only a fraction of 62% is vaccinated with all of them claiming they reacted following the uptake of the vaccine. This shows the negative attitude some participants have towards the uptake of the vaccine.

In the study, 82% believe that immunity against COVID-19 is sure, 60% trust the propaganda of office media about the COVID-19 vaccine, all the respondents trust professional staff's advice, 80% believe that the COVID-19 vaccine approved for a license has been fully evaluated in clinical trials, half of the respondents will advise their family

members to get COVID-19vaccination and will take their children to get COVID-19 vaccination. Overall, 60% of nurses have a good perception towards COVID-19 vaccination while only 40% have a poor perception. Corresponding to this is Bhartiya et al., (2021), in their study found that the HCWs in Beijing have a little more above moderate willingness to get the future COVID-19 vaccination before the completion of phase III vaccine clinical trials, and the willingness was strongly associated with the perception of whether the vaccine is free and safe. Similar to Cordina et al., (2021) study, which confirmed vaccine hesitancy was present in the study population with 32.6% being unsure and 15.6% declaring that they were not willing to take the vaccine.

In the study, 38%of the participants will reject COVID-19 vaccination, and 62% will readily accept the uptake. Similar to this finding is Verger et al., (2021) who conducted a study on the Attitudes of healthcare workers towards COVID-19 vaccination: a survey in France and French-speaking parts of Belgium and Canada, the report shows a moderate acceptance, and 28.4% (95% CI: 26.3–30.6) with hesitancy or reluctance. Moreover, 40.9% of participants reported that the safety of vaccines developed in an emergency during an epidemic cannot be guaranteed. Also, another report similar to the current study in France shows an acceptance rate between 40% and 60% among nurses in Hong Kong, China and France (Wang et al., 2020).

Factors influencing the uptake of vaccines as shown above are; the safety of a vaccine developed in an emergency, during an epidemic cannot be considered guaranteed (64%), trust in the Ministry of Health to ensure that vaccines are safe (60%), trust in science to develop safe effective new vaccines (73%), is preferred to acquire immunity against infectious diseases naturally (by having the disease) than by vaccination (50%), trust in the authorities in the fight against COVID-19 (42%), perceived not to be at considerable risk of developing complications

(35%) and already had the COVID-19 disease (23%). Consistent with this finding is Shekhar et al., (2021) in which most HCWs believe that in general vaccination works (90%), is safe (86%) and did not mention personal (87%) or religious belief (95%) as a reason for not vaccinating. Most participants endorsed concerns (agree or strongly agree) about vaccine safety/adverse effects (69%), effectiveness (69%), and rapidity of development/approval (74%). The majority of HCWs trust their doctors and healthcare professionals recommending the COVID-19 vaccine (73%) but nearly half of the respondents do not trust the information provided by the government about COVID-19 and its severity (46%) and one-third do not trust regulatory authorities overseeing the vaccine development and safety (34%) (Shekhar et al., 2021). Again, Roy et al., (2020) identified reasons similar to those identified in the current study for hesitancy to accept COVID-19 vaccines including concerns over vaccine safety and side effects, speed of vaccine development/approval (Roy et al., 2020)

Conclusions

The researcher explored the perception and acceptance of COVID-19 vaccination among primary healthcare nurses working in selected health facilities in Ethiope East Local Government Area, Delta State. Findings revealed that the majority of nurses have a good perception towards COVID-19 vaccination while only a few had a poor perception, while one-third of the participants would reject COVID-19 vaccination, two-thirds would readily accept the uptake. Factors influencing the uptake of the vaccine were found to include; the safety of a vaccine developed in an emergency, during an epidemic cannot be considered guaranteed, trust in the Ministry of Health to ensure that vaccines are safe, trust in science to develop safe effective new vaccines, trust in the authorities in the fight against COVID-19, the perception of not to be at considerable risk of developing complications and having had the COVID-19 disease.

Although the COVID-19 vaccination appears to have gained popularity and its benefits have been universally acknowledged by health providers, global health agencies, and laypeople, there is still low acceptance of this vaccine.

Conflict of Interest: Nil

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