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# Evidence Based Decision Making Of COVID-19 Vaccine Distribution in Abuja Municipal Area Council, FCT Nigeria: Study on Influence of Vaccine Hesitancy Amongst Healthcare Workers.

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**Nafisat Salisu Isa**
Disease Control Division of Public Health Department, Health & Human Services Secretariat Federal Capital Territory Administration, Abuja.

**Preethi John**
Global Business School for Health (GBSH) University College London, UK.

**Abdullahi Muhammad Askarami**
Animal African Trypanosomiasis Research, Nigerian Institute for Trypanosomiasis Research Kaduna, Kaduna State.

**Sadiq T. Abdurrahman**
Public Health Department, Health and Human Services Secretariat Federal Capital Territory Administration, Abuja.

**Jose B. Dominguez**
Institute d'Investigació Germans Trias i Pujol; CIBER Enfermedades Respiratorias, Instituto de Salud Carlos III; Genetics and Microbiology Department, Autonomous University of Barcelona, Spain

**Luis E. Cuevas**
Liverpool School of Tropical Medicine, Liverpool, United Kingdom, UK

**Dan A Gadzama**
Federal Capital Territory Primary Health Care Board Abuja.

**Abubakar Jibril Rifun**
Unity College of Nursing Services, School Cadastral Zone, 07-04 Bwari, FCT Abuja.
Corresponding Author Email- nnafisat2011@gmail.com
Phone: +2348026090003

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COVID-19, Vaccination, Hesitancy, Healthcare Workers, Abuja Municipal Area Council.

## Abstract

Background

Vaccine hesitancy is one of the greatest threats to global health and is a growing concern worldwide, especially amongst healthcare workers who are at the forefront of the fight against the COVID-19 pandemic. In 2019, the World Health Organization (WHO) identified vaccine hesitancy as one of its top ten threats in global health. It appears this threat has only increased since the COVID-19 Pandemic. Healthcare worker's vaccine hesitancy may be attributed to several factors, including lack of trust in the vaccine's safety and efficacy, lack of knowledge about the vaccine, fear of side effects and misinformation.

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Journal of Coastal Life Medicine

Conducting a study on COVID-19 vaccine hesitancy amongst healthcare workers in AMAC, could provide valuable insights into the factors that influence vaccine hesitancy in the region. This could inform public health policies and strategies to increase vaccine uptake amongst healthcare workers, which in turn could improve the overall vaccination rate and help control the spread of the pandemic.

Materials and Methods

The study covered all the twelve wards of the Abuja Municipal Area Council, with 375 Healthcare workers as the respondents. An online semi structured Questionnaire was adapted from the WHO clinical care form.

Results

375 Healthcare workers in AMAC were the respondents for this study. 60% of them reported to have been vaccinated against COVID-19 and only 24.5% which represent 92 respondents have completed their COVID-19 vaccine doses.

The doubting of COVID-19 Vaccine may cause damage to internal organs in the nearest future, could be attributed to fear as (51.5%) agreed and (48.5%) of the respondents did not agree. This could also be attributed to lack of information on how the vaccine was developed and tested. From the results, it shows that 225 Healthcare workers agreed COVID-19 vaccine is a means of controlling population growth (60.0%), only 40.0% did not agreed, representing 150 Healthcare workers respectively.

Conclusion

The study findings provide valuable insights into factors influencing vaccine hesitancy and highlights the need for evidence-based interventions to promote vaccine uptake

## 1. Introduction

The World Health Organization (WHO) characterized COVID-19 as a pandemic on the 11th of March, 2020. The COVID-19 Pandemic has posed unprecedented challenges to Health care systems globally. As of May (2023), there have been 766,895,075 confirmed cases of COVID-19, including 6,935,889 deaths, reported to WHO globally. Also to have been reported on 16th May (2023) a total of 13,352,935,288 COVID-19 vaccine doses have been administered worldwide (World Health Organization Corona virus report). Nigeria has recorded 266,675 confirmed cases with 259,953 cases discharged and 3,155 deaths (ncdc, gov.ng report April, 2023). All the 36 states have been affected including FCT. In the FCT, there have been 29,535 confirmed cases with 249 deaths. (www.ncdc.gov.ng).

The federal government of Nigeria has introduced measures to contain the spread of the virus, including the vaccination of priority groups, such as Healthcare workers. However, vaccine hesitancy remains a significant obstacle to achieving herd immunity and controlling the pandemic (Manuel, et al. 2020).

One of the main factors leading to hesitancy towards COVID-19 Vaccine Specifically has been concern that the vaccines were developed too quickly (Risha, et al, 2023). However, we know that the COVID-19 Vaccines are safe and effective.

The success in the fight against COVID-19 rests largely on successful global vaccination coverage, as it has affected all aspects of human endeavours like education, business, economy, religious activities, social life etc.

According to weekly epidemiological update as of 22 May (2022), almost one billion people in lower-income countries remain unvaccinated and only 57 countries have vaccinated 70% of their population- almost all of them are high income countries. There is a need to continue to support all countries to reach 70% vaccination coverage as soon as possible, including 100% of the healthcare workforce and 100% of those with underlying morbidities (Ensheng, et al, 2022).

Widespread acceptance of COVID-19 vaccines is crucial for achieving vaccination coverage to end the global pandemic. Hence, Healthcare workers are critical stakeholders in the vaccination rollout against COVID-19 pandemic. They have the power to accelerate vaccine uptake among communities. However, unvaccinated healthcare workers may pose a risk in the vaccination drive. It is necessary to study reasons which prevents health workers from getting vaccinated (Mara, et al, 2022).

This is an important study to provide evidence to drive decision making for large-scale vaccination which is yet to begin, as most healthcare workers are yet to be vaccinated in Abuja Municipal Area Council (AMAC), Nigeria.

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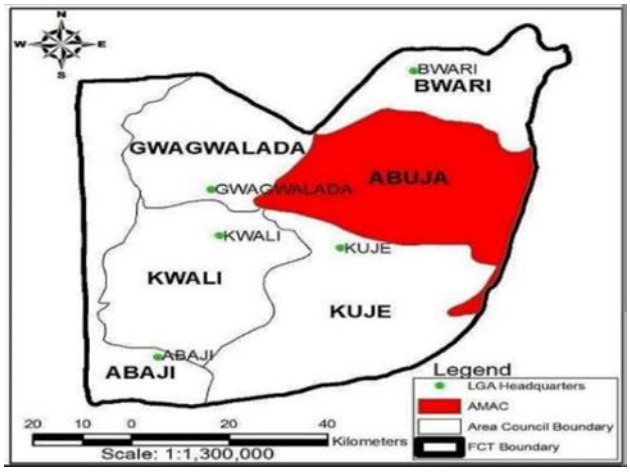
According to data from FCT Primary Health Care Board (PHCB). Abuja Municipal Area Council is the 3rd least vaccinated Area Council in FCT. The reasons projected are attributed to urbanization, high level of education, geographical largesse. Recent study has been limited as to why there is low vaccination uptake in Africa looking at the data from John Hopkins University or WHO website.

## 2. Methodology

***Materials & Methods:*** The study was conducted in all the twelve wards of Abuja Municipal Area Council, Federal Capital Territory. Politically the wards are divided into twelve namely: City Centre, Garki, Gui, Gwagwa, Gwarinpa, Jiwa, Kabusa, Karshi, Karu, Nyanya, Orozo and Wuse. Using a semi-structured online Questionnaire which was adapted from WHO COVID-19 clinical care form.

***Study Area*:** The Abuja Municipal Area Council was created on October, 1984. It is located on the eastern wing of the Federal Capital Territory. AMAC Is the most developed of all the area councils. The bulk of Federal Institutions, Ministries, Departments, Agencies, Embassies, Multi-nationals and Businesses, including the Presidential Villa, the National Assembly and the Supreme Court of Nigeria are located within the precinct of the area council. The current metro area population of Abuja in 2023 is 3,840,000, a 5.15% increase from 2022. The metro area population of Abuja in 2022 was 3, 652,000, a 5.43% increase from 2021. 55% of the population reside in Abuja Municipal Area Council (AMAC). The major Occupation of the inhabitant of AMAC is civil service, trading, and only few people are engaged in farming. Most of the inhabitants come from different part of the country, but the indigenous inhabitants are Gwari, Gbagi and Nupe who are predominantly farmers.




FCT map showing the location of AMAC

***Method of data Collection***

375 Healthcare workers in AMAC were the respondents for this study. The following responses were collected for Yes or No questions.

1. Do you believe COVID-19 is real?
2. Have you ever been tested for COVID-19?
3. Have you ever being managed for any chronic disease?
4. Do you think you are at high risk of getting COVID-19?
5. Have you been vaccinated against COVID-19?
6. Have eligible member of your family received their COVID-19 vaccine?
7. Would you recommend COVID-19 vaccine to others?
8. Did you have any side effects after receiving the vaccine?
9. Do you believe that COVID-19 vaccine is a means of controlling population growth?
10. Do you believe COVID-19 goes along with religion?
11. Do you believe COVID-19 vaccine can cause damage to internal organs?

***Data Analysis*:** Data collected for the above information was subjected to single population proportion formula, using SPSS/Excel 2021.

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## 3. Results

***Procedure:*** Assuming a 58.1% proportion of Healthcare workers in AMAC from previous data in Primary Health Care Board (PHCB)

Therefore, n =p (1-p) (ZE) 2

n= sample size

Z is the confidence level (Z=1.96 for 95%)

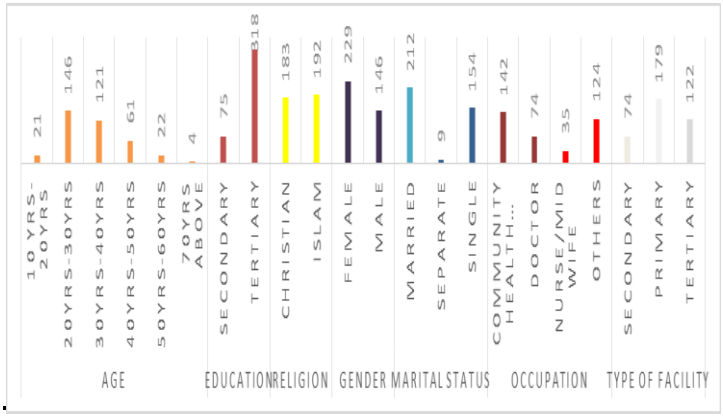
E is the desired margin of error (0.05)

P=proportion of AMAC population from previous study =58.1%=0.581

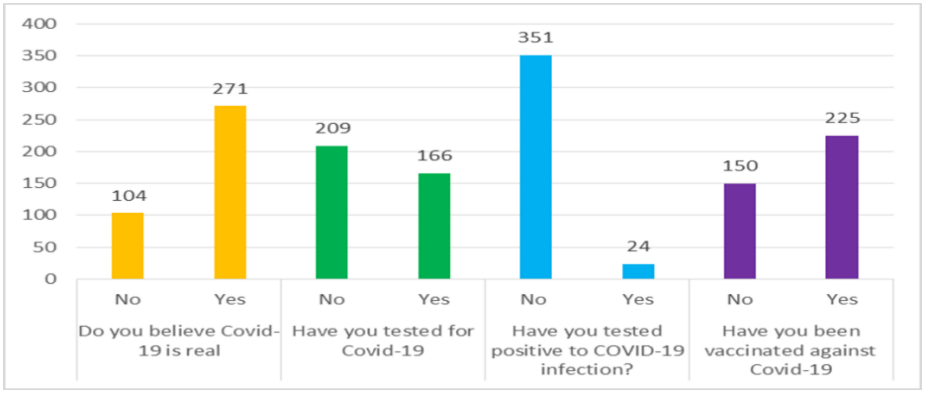
n= 0.581(1-0.581) (1.960.05)2

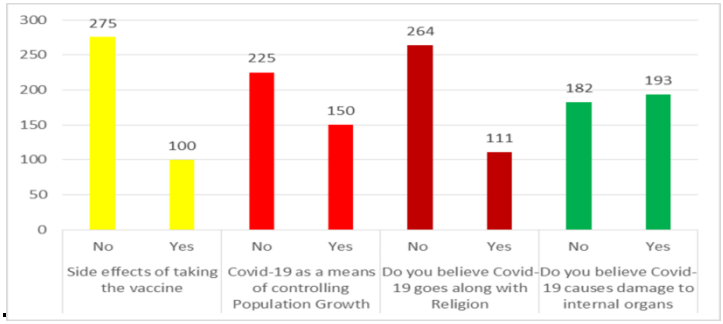
n= 375

The following table and charts below shows the answers of each question answered in percentage.




Demographics of COVID-19 Vaccine Distribution in Abuja Municipal Area Council (n=375)



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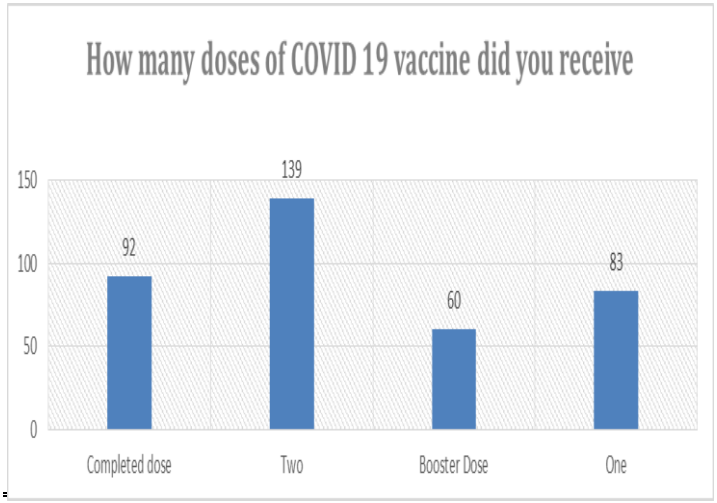


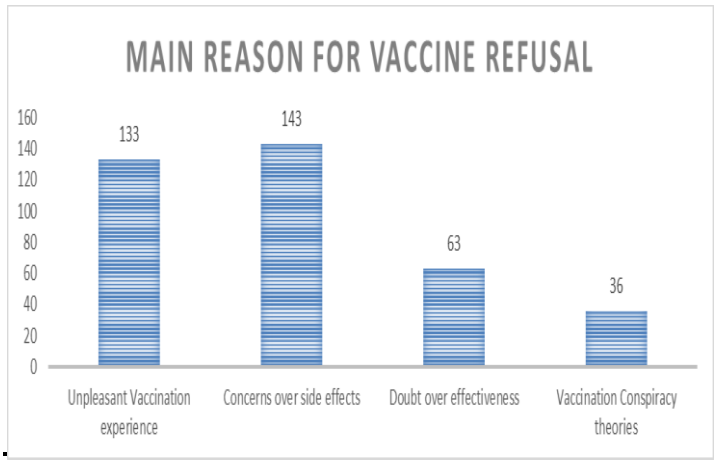


## 4. Discussion

The study utilized prospective cohort study. An electronic questionnaire was administered to a total number of 375 Healthcare workers, in Abuja Municipal Area Council (AMAC). Data was entered and analysed using Excel/SPSS. Majority of the respondents were between the ages of 20-30 years (38.9%). Over a tenth (72%) of the respondents (Healthcare workers) reported to COVID-19 is real. While only 44.3% agreed to have tested for COVID-19. Furthermore, only 5.6% had tested positive to the virus.

Although 60% of the respondents agreed to have been vaccinated against COVID-19 and only 24.5% which represent 92 respondents have completed their COVID-19 vaccine doses. 139 Healthcare workers which represent 37.3% have taken the first and second dose. This could be attributed to everyone out of the 375 participants having been vaccinated with at least one injection (dose).

The data results showed that HCWs in AMAC are vaccine compliant, this could be related to the fact that the study was done after all the doses have been launched in Nigeria and the targets set by the National Primary Health Care Board to reach the 70% coverage in 2022.

The level of vaccine hesitancy in this study is low. HealthCare Workers who participated in this study are most likely to accept the COVID-19 vaccine as the findings is similar to a study in the US (Shaw 2021, COVID-19 vaccination in a large University Health Care system). HCW perceived that the chances of contracting COVID-19 is high as evidenced by a study which reported that HCW had a more seven fold higher Risk of severe COVID-19 cases (Mutambudzi 2021, Occupation and Risk of severe COVID-19: prospective cohort study of 120 UK Bio bank participants). Healthcare workers feel the moral obligation not to harm their patients; they feel compelled to protect the sick and vulnerable patients by vaccinating themselves

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with at least first and second dose as reported in the study.

The major reason for COVID-19 vaccine Hesitancy in this study, highlighted by Healthcare workers were concerned about vaccine side effects (38.2%), Unpleasant Vaccination experience (35.4%), Doubt over effectiveness (16.8%) and Vaccination Conspiracy theories (9.5%).

The doubting of COVID-19 Vaccine may cause damage to internal organs in the nearest future, could be attributed to fear as (51.5%) agreed, representing 193 respondents amongst Healthcare workers. While 48.5% of the respondents did not agree. This could also be attributed to lack of information on how the vaccine was developed and tested.

From the results, it shows that 225 respondents amongst the Healthcare workers agreed COVID-19 vaccine is a means of controlling population growth (60.0%), only 40.0% did not agreed, representing 150 Healthcare workers respectively. Also, 70.4% of the respondents disagreed that COVID-19 vaccine goes along with Religion, only 28.5% agreed.

The vaccination rate of Community Health workers is higher than that of doctors, nurses and other HCWs. Previous studies has shown that doctors are more willing to receive COVID-19 vaccine than nurses and Community Health Workers, but reverse is the case here in AMAC, which could be related to the fact that vaccine of any type is mostly handled by the Primary Health Care Centres at different Community level, which harbours mostly Community Health workers and Volunteers, including Students on practical's from various Health institutions. Though, looking at the results from the data collected, all the categories of HCWs had a significantly positive attitude towards vaccination.

The results indicate that Healthcare workers in AMAC believe that COVID-19 is real and more than half of the respondents (60%) have been vaccinated against the virus. While about 24% have taken the first, second and booster dose. These findings are consistent with other African studies from Democratic Republic of Congo 56% (Ditekemena JD et al). The similarities in findings may be due to resemblance in the methodology used as well as the socio-economic and political settings in DRC. Though looking at a recent South African survey, it is pertinent to note that South Africans HCWs are most likely to accept the vaccine because of their high cases of COVID-19 and its co morbidities just like Nigeria, particularly states like FCT and Lagos who recorded high number of cases. Moreover, the surveys from DRC were conducted before the vaccine was rolled out and different conspiracies on the vaccine were on the high side. Thus, the researchers predict an increase in vaccine acceptance as more advocacies on vaccine hesitancy were done. This will penetrate the populace and will make more people to be vaccinated.

## 5. Conclusion

The study highlights some evidence that has been known to influence vaccine Hesitancy amongst Healthcare workers in AMAC. Religion and population control have been known as one of the myths surrounding the vaccine Hesitancy amongst Healthcare workers. Even though from the results, it shows respondents have more than average knowledge about COVID-19 vaccine when it comes to religion and population control. All the twelve wards in AMAC were involved, though some were more represented than others. The study received a good response rate as data collection was completed in 22 days, (a reminder message was sent by the researchers to 2 platforms in the 2nd week) as no incentives was given to respondents to cover internet connection fees. Four (4) different WhatsApp platforms were used as proxies for distributing the data collection tool. Since the advent of COVID-19 vaccine in the FCT, to my knowledge, this is one of the first studies on Vaccine Hesitancy amongst HCWs, particularly in the most urbanized Area Council in the FCT which is AMAC despite the relatively large sample size.

However, these results can be used to guide future health activities with an aim of improving COVID-19 vaccine uptake till the last dose. Also, Health promotion campaigns are required to make the vaccine more acceptable irrespective of being a Healthcare worker or not.

Even though HCWs in AMAC has a strong willingness to receive the Covid-19 vaccine and has a high level of vaccine knowledge looking at the percentage of the respondents who have been vaccinated (60%) and ranging from different levels of doses uptake. The high vaccine acceptance amongst HCWs was also due to the fact that, majority of people will consult healthcare

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workers before deciding whether to be vaccinated or not.

This can be a good foundation to launch a successful COVID19 vaccine awareness even amongst entire residents of Abuja Municipal Area Council in the Federal Capital Territory. Though, HCWs are like every normal human with the same emotions and dilemmas that all members of the general population experience when it comes to vaccination. Thus, despite their professional titles, discussions about HCW vaccination are likely to continue.

Further studies should continue to examine effective interventions for not only increasing vaccination rates but changing fundamental attitudes leading to vaccine hesitancy.

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