African Journal of
Clinical Medicine and Pharmacy Research

ISSN: 1595-7993

Index: Harvard, Boston, Sydney University, Dimensions, Lens, ResearchGet Scilit, Semantic, Google Scholar, Base etc

https://doi.org/10.58578/AJCMPR.v3i2.9358

Assessment of People's Perception on COVID-19 Vaccine Hesitancy in Wukari, Taraba State

Egeonu US[1], Asindaya GA[2], Andemam T[3], James S[4], Mgbemena N[5]

[1]Federal University Wukari, Taraba State, Nigeria; [2,3]Federal University Teaching Hospital, Wukari, Taraba State, Nigeria; [4]Nigeria for Women Project, Takum, Taraba State, Nigeria; [5]Federal University Clinic Wukari, Taraba State, Nigeria

egeonu.us@gmail.com

Article Info:

Submitted:	Revised:	Accepted:	Published:
Feb 6, 2025	Mar 6, 2026	Mar 18, 2026	Mar 23, 2026

Abstract

COVID-19 vaccine hesitancy remains a major public health challenge in Nigeria despite widespread awareness of the vaccine and its recognized role in preventing infection. This study evaluated the perceived causes of and possible preventive measures against COVID-19 vaccine hesitancy in Wukari Local Government Area of Taraba State, Nigeria. A descriptive research design was adopted, and data were collected through a structured questionnaire administered to 600 respondents selected using a multistage random sampling technique, of which 595 questionnaires were successfully retrieved and analyzed using descriptive statistics and simple percentages. The findings showed that all respondents were aware of the COVID-19 vaccine, yet only 24.4% were willing to be vaccinated. Most respondents were aged 31–60 years (41.2%), with males constituting 65.5% and females 34.5% of the sample. The major perceived causes of vaccine hesitancy were fear of the unknown (26.9%), lack of trust in government (25.2%), and concerns about vaccine side effects (23.5%). The main measures suggested by respondents to reduce hesitancy included making COVID-19 vaccination compulsory (25.2%) and building trust between government and citizens.

AJCMPR Journal is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License

The study concludes that high awareness alone does not ensure vaccine acceptance, as perceptions shaped by fear, mistrust, and safety concerns remain significant barriers. These findings contribute context-specific evidence for public health planning and imply that extensive multi-target health campaigns and more inclusive engagement with target populations are necessary to address public concerns and improve vaccine acceptance.

Keywords: COVID-19 Vaccine Hesitancy; Vaccine Acceptance; Public Health Perception; Health Communication; Nigeria

INTRODUCTION

People's perception on COVID-19 vaccine hesitancy refers to people's opinion on why they refused to accept COVID-19 vaccine while Vaccine Hesitancy is defined by WHO-Strategic Advisory Group of Experts on Immunization as a "delay in acceptance or refusal of vaccination despite availability of vaccination services. "Hesitancy may take on different forms and intensities depending on when and where it happens, as well as the vaccine that is involved (Adigwe, 2021). Following the outbreak of COVID-19 (an infectious disease caused by the SARS-CoV-2), which originated from Wuhan province in China in 2019 and affected over 100 million people, claimed 2 million lives globally, collapsed business and economy (Cobos*, et at.,* 2021), bold steps and actions by governments and entities resulted in production of COVID-19 vaccines as the ultimate intervention against the deadly virus. The purpose of this milestone achievement in the production of COVID-19 vaccine was to make these vaccines available and distribute them across every country, especially where cases of COVID-19 infections were confirmed.

As at August 4th 2022, more than 12.3 billion doses of COVID-19 vaccines were administered across 184 countries at the rate of 12 million doses per day globally (Sallam, 2021). Empirical and anecdotal evidence from global and country levels studies, however, showed an increasing level of hesitancy of COVID-19 vaccine ranging from 20% to 80% and declining level of vaccine acceptance ranging from about 7% to 50% thereby raising an important challenge to Public Health. WHO highlighted vaccine hesitancy as one of the top ten global health problems for 2019. In fact, it was named as one of the top ten global health hazards in 2018 (WHO*,* 2020). Anti-vaccine sentiment and disinformation were

major hurdles to increasing vaccination coverage and community immunity in many countries (Mohammed, *et al.,* 2021).

In Nigeria, COVID-19 vaccine hesitancy was driven mainly by fear of the unknown. A recent review on COVID-19 vaccine acceptance rate in Nigeria by (Adebisi, *et al.,* 2020) recommended that, 'more efforts are required in addressing the scope of COVID-19 vaccine hesitancy and this should be the initial step in building trust in COVID-19 vaccination efforts', and hence the need for this study.

Despite the potential benefits presented by COVID-19 vaccine, the reluctance of many to accept the vaccine was a global problem (Sallam*,* 2021). Although so many reasons have been advanced for COVID-19 vaccine hesitancy, these reasons have not been documented in the study area. Vaccine misinformation has become one of the major causes of COVID-19 vaccine hesitancy due to varied opinions regarding the vaccine. COVID-19 vaccine hesitancy can pose a serious threat to people's well being in terms of increase in lifestyles due to lockdowns and restractions, economic meltdown due to closed businesses and psycho-social imbalances (Paul, 2021).

In Nigeria, COVID-19 vaccine hesitancy has been a major concern in the fight against COVID-19 (WHO, 2023), as people have different opinions about COVID-19 vaccine. Several religious groups have even claimed that their faith will protect them from the virus. Without certified evidence, some people claimed that the virus is a bio-weapon deliberately or accidentally leaked from a laboratory, a population control scheme, the result of a spy operation or the side effects of the 5G upgrade to cellular network. This misinformation has resulted in large number of people rejecting COVID-19 vaccine in Nigeria (Barello *et al.,* 2020, Olomofe *et al.,* 2021).

MATERIALS AND METHODS

A multi-stage sampling techniques involving 3-stages were used to generate data for the study. The first stage involved the division of Wukari Local Government Area into 2 based on the two existing constituencies as Wukari I and Wukari II with each constituent having 5 wards.

Wukari I: Akwana, Chonku, Hospital, Kente and Rafin-Kada wards and

Wukari II: Avyi, Bantaje, Jibu, Puje and Tsokundi wards.

The second stage involves random selection of 3 wards out of the 5 wards in each of the constituents.

The third stage involved random selection of 100 household's heads from each of the 6 wards thereby bringing the total of 600 household heads for the study which by Taro Yamane's method for sample size estimation, population of 241,546, gave a minimum of 399 participants.

Instruments for data collection

The data collection tool used in this study was the structured pre-tested questionnaire. The structured questionnaire comprised of close ended questions (structured questionnaire). The close ended questions with option in the questionnaire guide confer quicker and more accurate sense of direction of the respondents on what was required for them to tick in the questionnaire. The questionnaire consisted of five (4) sections as follows:

a. Section A: Data on Socio-Economic Characteristics of the respondents
b. Section B: Data on questions bothering on COVID-19 vaccine hesitancy
c. Section C: Data on causes of COVID-19 vaccine hesitancy
d. Section E: Data on prevention of COVID-19 vaccine hesitancy respectively.

RESULTS

The result obtained from the assessment of people's perception on COVID-19 vaccine hesitancy in Wukari local government area is presented here. A total of 595 questionnaires were retrieved out of the 600 sampled for the study comprising of 390 (65.5%) males and 205 (34.5%) females. The socio-economic status or biodata of the respondents were documented. Other variables that relate to COVID-19 vaccine hesitancy in the study area were also researched through administration of structured questionnaire to the respondents and the results collated and analysed.

Table 1: Classification of respondents by age range.

S/N	Variables	No. of respondents	Percentage
1.	1-15 years	0	0
2.	16-30 years	0	0
3.	30-35 years	170	28.6
4.	31-60 years	245	41.2
5	Above 61	180	30..2
Total		595	100

Table 2: Presentation of respondents according to educational status

S/N	Variables	No. of Respondents	Percentage
	Educational Status		
1.	Quranic Education	145	24.4
2.	Adult Education	180	30.3
3.	Primary	170	28.6
4.	Secondary	60	10
5.	Tertiary	40	6.7
Total		595	100

Table 3: Responses of participants on COVID-19 vaccine hesitancy in Wukari

S/N	Variables	No. of Respondents	Percentage
		Yes (No)	Yes (No)
1.	Are you aware of the on-going COVID-19 vaccination? Total	595 (0) 595	100 (0) 100
2.	Have you been vaccinated against COVID-19? Total	145 (450) 595	24.4 (75.6) 100
3.	Are you willing to take the COVID-19 vaccine if available? Total	145 (450) 595	29.3 (70.7) 100
4.	Are you aware of COVID-19 vaccine hesitancy?	595 (0)	100 (0)
Total		595	100

Table 4: Responses on causes of COVID-19 vaccine hesitancy in Wukari

S/N	Variables Which of the following is a cause of COVID-19 vaccine hesitancy?	No. of Respondents	Percentage
1.	Fear of the unknown	158	36.9
2.	Vaccine side effects	142	23.5
3.	Lack of awareness	120	20.2
4.	Lack of trust in government	153	25.2
5	None of the above	22	4.2
Total		595	100

DISCUSSION

This study assessed people's perception on COVID-19 vaccine hesitancy in Wukari local government area.

The result on the socio-economic characteristics of the respondents showed that the age range of 46-60 years have the highest participation because the study targeted mostly household heads and most of them fall without this age category. On the other hand, the zero-participation recorded from ages of 1-30 years showed that only few people in the study area within this age group are household heads. more males 390 (61.5%) participated in the study than females 205 (34.5%) and majority of the participants were married (74%). This is because men participate more actively in events than females (Varma et al., 2021). The dramatic zero participation among the divorced, widow and widower category could be as a result of possible stigmatization or deliberate veiling of identity by the respondents (Garcia and Yap, 2021).

The result in table 2 (Presentation of respondents by educational status) showed that only 40 (6.7%) of the respondents completed tertiary education which is very much unexpected from an ancient settlement housing three tertiary institutions of learning. On the other hand, this is possible because majority of the residents are farmers and traders with little priority on education (Mohammed et al., 2021).

Low Literacy level, was associated with the increased level of COVID-19 vaccine hesitancy evidenced by the low number of respondents with tertiary education 40 (6.7%). The higher the literacy level, the higher the chances of health information (Fadda *et al,* 2020, Joshi et al., 2021). Other socio-economic factors such as male gender, elderly and large household size also played a role. Cuccinotta *et al.,* (2020), Haparan et al., (2020) and CDC Africa, (2021), all agreed that males appear to be more resistant towards accepting new information than females and because males dominated the respondents and yet has lower acceptance149 (29.3%), it has therefore totally agreed with these assertions. Elderly individuals and individuals with large household size tends to be more willing to accept vaccination than younger and smaller household sized individuals (Karafillakis and Larson, 2021, Lazarus *etal,* 2021, Oyeoku, 2021). This sadly disagreed with this finding where majority of the respondents are elderly but yet highly hesitant to accept the COVID-19 vaccine.

All the respondents 595 (100%) were aware of COVID-19 vaccine (table 3) and this is consistent with (Alfageeh *et al,* 2021, Al-Mandheri *et al.,* 2021 and IPSOS, 2021) which ironically varied from a previous study by (Mheidy and Fares, (2020) on determinants of COVID-19 vaccine acceptance in Al Hasa' province in Saudi Arabia where 25% of the respondents said they were not aware of the ongoing COVID-19 vaccine in the province. The fact that 100% of the respondents in this study were aware of the ongoing COVID-19 vaccine was not a surprise because of the popularity of the novel COVID-19 across the globe and the devastating effects it posed to the quality of life during the peak of the pandemic (Baiye and Oguntola*,* 2021). The table also showed that there was high prevalence of COVID-19 vaccine hesitancy in the study area and that the residents were not only hesitant towards receiving the vaccine because it was not available, but because of some other reasons such as vaccine side effects 142 (23.5%) and fear of the unknown 158 (36.9%) as seen in (table 4).

The data available on the respondents' perception on the causes of COVID-19 vaccine hesitancy in the study area showed that fear of the unknown, lack of citizen's trust in government, vaccine side effects and lack of awareness were perceived to be the major reasons why they were hesitant towards accepting the COVID-19 vaccine. The low literacy level could predispose majority of the residents to COVID-19 vaccine misinformation which could lead to increase in COVID-19 vaccine hesitancy. Misconceptions or misinformation such as conspiracy theories or general vaccine disbelief, as well as rumours that the vaccine might benefit the people who produced the virus or people might get COVID-19 from the vaccine are known to affect the vaccine acceptance. (Ohia, 2020, Oyeoku, *et al.,* 2021). The Nigerian government failed to inform the public at the grassroots levels that the vaccine under development do not contain any microchips or tracking devices. Consequently, anti-vaccine messages disseminated through the internet, local media channels or even religious places of worships thrived and suddenly the people developed phobia towards the COVID-19 vaccine(Olomofe *et al*., 2021). The years ahead will reveal whether these phobia were real or imagined. There is need for all stakeholders to involve in early information dessimination to convince the populace on the benefit of vaccination. Government should have a well planned approach and preparedness rather than a fire brigade approach and unconvincing manner of handling vital issues that affect the populace.

CONCLUSION

This study concludes that COVID-19 vaccine hesitancy in Wukari Local Government Area is shaped not by lack of awareness, since all respondents were aware of the vaccine, but by a combination of psychosocial and structural factors, particularly fear of the unknown, concerns about vaccine side effects, distrust in government, and inadequate grassroots-level health communication. The findings further suggest that low literacy levels and certain socio-demographic characteristics, including male gender and older age, may intensify vulnerability to misinformation and negative perceptions about vaccination. Despite the widespread visibility of COVID-19 vaccination campaigns, awareness alone was insufficient to ensure acceptance. Therefore, reducing vaccine hesitancy in the study area requires more than vaccine availability; it demands sustained, community-based, and culturally sensitive public health strategies that improve trust, address misinformation directly, and communicate vaccine safety and benefits in clear and accessible ways. The study underscores the need for government, health professionals, community leaders, and religious institutions to collaborate in delivering timely and credible information that can strengthen public confidence and improve vaccine uptake.

REFERENCES

Adebisi, Y. A., Alaran, A. J., Bolarinwa, O. A., Akande-Sholabi, W., & Lucero-Prisno, D. E., III. (2020). When it is available, will we take it? Public perception of hypothetical COVID-19 vaccine in Nigeria [Preprint]. *medRxiv*. https://doi.org/10.1101/2020.09.24.20200436

Adigwe, O. P. (2021). COVID-19 vaccine hesitancy and willingness to pay: Emergent factors from a cross-sectional study in Nigeria. *Vaccine: X, 9*, Article 100112. https://doi.org/10.1016/j.jvacx.2021.100112

Alfageeh, E. I., Alshareef, N., Angawi, K., Alhazmi, F., & Chirwa, G. C. (2021). Acceptability of a COVID-19 vaccine among the Saudi population. *Vaccines, 9*(3), Article 226. https://doi.org/10.3390/vaccines9030226

Al-Mandhari, A., Samhouri, D., Abubakar, A., & Brennan, R. (2020). Coronavirus disease 2019 outbreak: Preparedness and readiness of countries in the Eastern Mediterranean Region. *Eastern Mediterranean Health Journal, 26*(2), 136–137. https://doi.org/10.26719/2020.26.2.136

Baiye, B., & Oguntola, I. (2021, April 28). *Will you take the COVID-19 vaccine? A household survey on the perception of Nigerians towards a COVID-19 vaccine*. Nigeria Health Watch. https://articles.nigeriahealthwatch.com/will-you-take-the-covid-19-vaccine-a-household-survey-on-the-perception-of-nigerians-towards-a-covid-19-vaccine/

Barello, S., Nania, T., Dellafiore, F., Graffigna, G., & Caruso, R. (2020). "Vaccine hesitancy" among university students in Italy during the COVID-19 pandemic.

European Journal of Epidemiology, 35(8), 781–783. https://doi.org/10.1007/s10654-020-00670-z

Africa Centres for Disease Control and Prevention. (2020, December 17). *Majority of Africans would take a safe and effective COVID-19 vaccine*. https://africacdc.org/news-item/majority-of-africans-would-take-a-safe-and-effective-covid-19-vaccine/

Cobos Muñoz, D., Monzón Llamas, L., & Bosch-Capblanch, X. (2015). Exposing concerns about vaccination in low- and middle-income countries: A systematic review. *International Journal of Public Health, 60*(7), 767–780. https://doi.org/10.1007/s00038-015-0715-6

Cucinotta, D., & Vanelli, M. (2020). WHO declares COVID-19 a pandemic. *Acta Bio Medica: Atenei Parmensis, 91*(1), 157–160. https://doi.org/10.23750/abm.v91i1.9397

Fadda, M., Albanese, E., & Suggs, L. S. (2020). When a COVID-19 vaccine is ready, will we all be ready for it? *International Journal of Public Health, 65*(6), 711–712. https://doi.org/10.1007/s00038-020-01404-4

Garcia, L. L., & Yap, J. F. C. (2021). The role of religiosity in COVID-19 vaccine hesitancy. *Journal of Public Health, 43*(3), e529–e530. https://doi.org/10.1093/pubmed/fdab192

Harapan, H., Wagner, A. L., Yufika, A., Winardi, W., Anwar, S., Gan, A. K., Setiawan, A. M., Rajamoorthy, Y., Sofyan, H., & Mudatsir, M. (2020). Acceptance of a COVID-19 vaccine in Southeast Asia: A cross-sectional study in Indonesia. *Frontiers in Public Health, 8*, Article 381. https://doi.org/10.3389/fpubh.2020.00381

Ipsos. (2020, August 31). *Three in four adults globally say they would get a vaccine for COVID-19*. https://www.ipsos.com/en-us/news-polls/WEF-covid-vaccine-global

Joshi, A., Kaur, M., Kaur, R., Grover, A., Nash, D., & El-Mohandes, A. (2021). Predictors of COVID-19 vaccine acceptance, intention, and hesitancy: A scoping review. *Frontiers in Public Health, 9*, Article 698111. https://doi.org/10.3389/fpubh.2021.698111

Karafillakis, E., & Larson, H. J. (2017). The benefit of the doubt or doubts over benefits? A systematic literature review of perceived risks of vaccines in European populations. *Vaccine, 35*(37), 4840–4850. https://doi.org/10.1016/j.vaccine.2017.07.061

Lazarus, J. V., Ratzan, S. C., Palayew, A., Gostin, L. O., Larson, H. J., Rabin, K., Kimball, S., & El-Mohandes, A. (2021). A global survey of potential acceptance of a COVID-19 vaccine. *Nature Medicine, 27*(2), 225–228. https://doi.org/10.1038/s41591-020-1124-9

Mheidly, N., & Fares, J. (2020). Leveraging media and health communication strategies to overcome the COVID-19 infodemic. *Journal of Public Health Policy, 41*(4), 410–420. https://doi.org/10.1057/s41271-020-00247-w

Mohamed, N. A., Solehan, H. M., Mohd Rani, M. D., Ithnin, M., & Che Isahak, C. I. (2021). Knowledge, acceptance and perception on COVID-19 vaccine among Malaysians: A web-based survey. *PLOS ONE, 16*(8), Article e0256110. https://doi.org/10.1371/journal.pone.0256110

Oyeoku, E. K., Talabi, F. O., Oloyede, D., Boluwatife, A. A., Gever, V. C., & Ebere, I. (2022). Predicting COVID-19 health behaviour initiation, consistency, interruptions

and discontinuation among social media users in Nigeria. *Health Promotion International, 37*(1), daab059. https://doi.org/10.1093/heapro/daab059

Olomofe, C. O., Soyemi, K. V., Udomah, B. F., Owolabi, A. O., Ajumuka, E. E., Igbokwe, M. C., Ashaolu, O. U., Adeyemi, O. A., Aremu-Kasumu, Y. B., Dada, O. F., Ochieze, C. J., Fayemi, O. B., Ologunde, K. W., Popoola, G. O., & Ariyo, O. E. (2021). Predictors of uptake of a potential COVID-19 vaccine among Nigerian adults. *Journal of Vaccines & Vaccination, 12*, 442. https://www.walshmedicalmedia.com/open-access/predictors-of-uptake-of-a-potential-covid19-vaccine-among-nigerian-adults-62325.html

Ohia, C., Bakarey, A. S., & Ahmad, T. (2020). COVID-19 and Nigeria: Putting the realities in context. *International Journal of Infectious Diseases, 95*, 279–281. https://doi.org/10.1016/j.ijid.2020.04.062

Paul, E., Steptoe, A., & Fancourt, D. (2021). Attitudes towards vaccines and intention to vaccinate against COVID-19: Implications for public health communications. *The Lancet Regional Health – Europe, 1*, Article 100012. https://doi.org/10.1016/j.lanepe.2020.100012

Sallam, M. (2021). COVID-19 vaccine hesitancy worldwide: A concise systematic review of vaccine acceptance rates. *Vaccines, 9*(2), Article 160. https://doi.org/10.3390/vaccines9020160

Varma, J. K., Thamkittikasem, J., Whittemore, K., Alexander, M., Stephens, D. H., Arslanian, K., Bray, J., & Long, T. G. (2021). COVID-19 infections among students and staff in New York City public schools. *Pediatrics, 147*(5), e2021050605. https://doi.org/10.1542/peds.2021-050605

World Health Organization. (n.d.). *WHO coronavirus (COVID-19) dashboard* [Dashboard]. Retrieved March 11, 2022, from https://covid19.who.int/

World Health Organization. (n.d.). *Coronavirus disease (COVID-19)*. Retrieved March 7, 2023, from https://www.who.int/emergencies/diseases/novel-coronavirus-2019

Yamane, T. (1967). *Statistics: An introductory analysis* (2nd ed.). Harper & Row.