PHARMACOVIGILANCE NEWSLETTER

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Factors that affect the uptake of booster doses of COVID-19 vaccine

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Health professionals and patients are encouraged to **report adverse events** or **quality problems** experienced with the use of **vaccines and medicines** to the nearest NAFDAC office or via pharmacovigilance@nafdac.gov.ng or via eReporting platform available on the NAFDAC website www.nafdac.gov.ng or via Med Safety Application available for download on Android and IOS stores.

EDITOR'S NOTE...

We wish to thank our numerous stakeholders who have been working tirelessly with the National Pharmacovigilance Centre (NPC) to ensure the safe use of medicines in Nigeria. The NPC is committed to sending out the quarterly newsletter to its stakeholders. The objectives of the Newsletter are to disseminate information on Pharmacovigilance activities nationally and globally, to educate stakeholders on medicine safety issues, to promote rational use of drugs and to promote reporting of Adverse Drugs Reactions (ADRs) and AEFIs. This edition of the newsletter focuses on: **Factors that affect the uptake of booster doses of COVID-19 vaccine.**

We encourage Health care Professionals and other stakeholders to continue to report all adverse drug reactions and AEFIs. Your valued comments and acknowledgement of receipt of this issue through our email addresses (nafdac_npc@yahoo.com; pharmacovigilance@nafdac.gov.ng, fdic@nafdac.gov.ng) would be most appreciated.

You may also send us an email if there are any areas of interest that you would want addressed in subsequent issues of the newsletter

Thank you for your relentless efforts in strengthening Pharmacovigilance System in Nigeria.

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Introduction

The World Health Organization defined the Coronavirus disease (COVID-19) as an infectious disease caused by the SARS-COV-2 Virus. With respect to the coronavirus disease pandemic, vaccines constitute the most cost-effective strategy to reduce infections, hospitalizations, and mortality in patients infected with SARS-CoV-2. The emergence of new variants of the COVID-19 virus with greater transmission capacity is a concern for global health. In early April 2022, the World Health Organization (WHO) reported that more than 11 billion doses of vaccines against COVID-19 had been administered worldwide, with more than 5 billion people having received at least one dose and more than 4.4 billion people having had two doses. Unfortunately, in spite of these efforts, regions such as Africa have reported fewer than 20 doses administered per 100 people (Urrunaga-Pastor et al., 2022).

Follow-up studies in patients vaccinated against COVID-19 showed a decrease in antibody production, which, together with the appearance of new variants, raised the need for **booster doses** in patients who completed the initial two doses of the vaccine against SARS-CoV-2. It is a good thing that various countries have been providing booster doses against COVID-19. Booster doses have been shown to be effective in reducing hospitalizations and deaths from the new variants, as well as being cost-effective. Low acceptance of the booster dose in Africa has important consequences for global public health such as the emergence of new variants of the virus with greater transmission capacity (Urrunaga-Pastor et al., 2022).

Factors associated with low booster dose uptake

In a study aimed to assess the factors associated with low uptake of a COVID-19 vaccine booster dose in adults from Latin America and the Caribbean (LAC), a secondary database compiled by the University of Maryland and Facebook was analyzed to assess the global impact of COVID-19. It included Facebook users over 18 years of age who resided in LAC and who responded to the survey between February 13, 2022, and March 14, 2022 and factors evaluated include sociodemographic characteristics, comorbidities, food & economic insecurity, mental health, and vaccination-related practices.

The countries with the highest prevalence of low uptake of a booster dose were Venezuela and Bolivia. Results showed that from the sample of 154,841 adults from 20 LAC countries, **33.7% reported not receiving the COVID-19 booster vaccine**. Being under 75 years of age, having the lowest level of education, having fewer than three comorbidities, living in a town, having food insecurity, depressive symptoms, and having had COVID-19 were associated with a higher prevalence of low uptake of the booster dose. In contrast, being female or non-binary and having anxiety symptoms were associated with a lower prevalence of not receiving a second dose (Urrunaga-Pastor et al., 2022).

The Latin America and Caribbean (LAC) study recommended that to promote greater acceptance of the booster dose, there is a need to develop booster vaccination campaigns with a greater focus on gender and

to prioritize messages and content according to population subgroups.

COVID-19 vaccination in sub-Saharan Africa

Acceptance of COVID-19 vaccines in sub-Saharan Africa: evidence from six national phone surveys is a relevant evaluation study carried out in sub-Saharan Africa. It was a cross-country comparable, descriptive study based on a longitudinal survey, six national surveys from countries representing 38% of the sub-Saharan African population (Burkina Faso, Ethiopia, Malawi, Mali, Nigeria and Uganda). The objectives of the study were to estimate the willingness to accept a COVID-19 vaccine in six sub-Saharan African countries and identify differences in acceptance across countries and population groups. Participants were respondents of national high-frequency phone surveys, aged 15 years and older, drawn from a nationally representative sample of households. Main outcome measured the respondents' willingness to get vaccinated against COVID-19 if an approved vaccine is provided at no cost, disaggregated by demographic attributes and socioeconomic factors obtained from national household surveys; as well as correlates of and reasons for vaccine hesitancy.

The statistical analysis of the study was carried out in several steps. First, an estimate of the weighted mean of willingness to get vaccinated by country and within countries by sex of respondent, residence (urban and rural) and income quintile was done, as well as reasons for vaccine hesitancy, using the recalibrated household weights. Secondly, the study explored how individual and household characteristics, such as education and expenditure, correlate with the willingness to get vaccinated in a set of multivariate logit regressions, again using household weights. The results showed the following: Acceptance rates in the six sub-Saharan African countries studied are generally high, with at least four in five people willing to be vaccinated in all but one country. Vaccine acceptance ranges from nearly universal in Ethiopia (97.9%, 95% CI 97.2% to 98.6%) to below what would likely be required for herd immunity in Mali (64.5%, 95% CI 61.3% to 67.8%). Acceptance of the vaccine was seen to be 86.2% in Nigeria, 84.5% in Uganda, 82.7% in Malawi and 79.5% in Burkina Faso. The key driver of hesitancy was evaluated to be lack of trust in vaccine safety.

The study found little evidence for systematic differences in vaccine hesitancy by sex or age. When the acceptance rates were disaggregated based on the respondents' sex, in Nigeria, acceptance was statistically significantly higher among males than female respondents. In Ethiopia, there was no significant difference in the responses from men and women. Generally, acceptance was found to be higher among poorer households and lowest among the better educated & richer households of all countries except Ethiopia. The high acceptance rate in Ethiopia could be correlated with a high level of confidence in the safety of the COVID-19 vaccine.

Safety concerns about the vaccine in general and its side effects specifically emerge as the primary reservations toward a COVID-19 vaccine varied across countries.

The study focused on acceptance rates and did not distinguish between respondents rejecting to be vaccinated and those that were unsure. The data from all countries weighed by their respective population sizes yielded an overall mean acceptance rate of 87.6% across the six countries.

An interesting association was observed across countries between education and vaccine hesitancy. In **Burkina Faso, Ethiopia, Malawi** and **Nigeria**, those with more years of education are significantly less willing to be vaccinated while coefficient signs point in the same direction in Mali and Uganda but are not significant. Another pattern observed in several countries is a higher hesitancy towards the vaccine in richer households compared with the poorest expenditure quintile.

It is safe to conclude that inadequate demand is unlikely to represent the key challenge to attaining high COVID-19 vaccine coverage in sub-Saharan Africa. To promote effective demand, targeted information, sensitization and engagement campaigns bolstering confidence in the safety of approved vaccines and reducing concerns about side effects will be crucial to guarantee a swift progression of vaccine rollout in sub-Saharan Africa. (Kanyanda et al., 2021).

Continuous precautions and vigilance

Booster Vaccines are the best way to protect against variants. A COVID-19 expert of the university of Maryland, Baltimore, Chen says vaccination remains key to protecting yourself and others from infection and reiterates the importance of mask wearing, physical distancing and testing. Completing your primary series with an authorized COVID-19 vaccine remains the best way to protect yourself against the virus and its variants. If it is up to six months since your primary series (first jab), then your immunity may have declined significantly, and it is recommended that you complete your booster dose.

In December, 2021 there were concerns of rising COVID-19 cases and uncertainties over the Omicron variant. Vaccine manufacturers including Pfizer and BioNTech announced preliminary results showing that the Pfizer-BioNTech COVID-19 vaccine neutralizes the Omicron variant after three doses. The booster dose is intended to continue to provide you with the best protection against this pandemic.

Vaccines do not work alone; wearing a well-fitting mask when in public spaces with other people close by is also recommended. If you think you may have been exposed to a person with COVID-19 infection, you should get tested (Morrison and Chen, 2021). Many people look forward to spending precious time with friends and family during holidays and other events. For indoor gatherings, ensure to create a safe environment by providing good ventilation of the air and people should remain masked as much as possible if they have not been fully vaccinated. If you have taken your booster shot of the vaccine, remember that your help and encouragement may lead your family, friends and neighbours who are eligible to do the same and get protected (Morrison and Chen, 2021).

Conclusion

Booster doses have been described as effective in reducing hospitalizations and deaths from the new variants and several countries including Nigeria have incorporated boosters into their COVID-19 vaccination schedules (Morrison and Chen, 2021).

Sustained Public enlightenment and engagement campaigns bolstering confidence in the safety of approved vaccines and reducing concerns about side effects will be crucial to guarantee a swift progression of vaccine rollout to increase the demand for booster doses in sub-Saharan Africa (Kanyanda et al., 2021).

References

Kanyanda, S., Markhof, Y., Wollburg, P., & Zezza, A. (2021). Acceptance of COVID-19 vaccines in sub-Saharan Africa: Evidence from six national phone surveys. *BMJ Open*, *11*(12), e055159. Retrieved on 20th December, 2022 from https://doi.org/10.1136/bmjopen-2021-055159

Morrison, J., & Chen, W. H. (2021). *UMSOM COVID-19 Expert: Booster Vaccine Best Way to Protect Against Variants*. Retrieved on 1st November, 2022 from https://archive.hshsl.umaryland.edu/handle/10713/17358

Urrunaga-Pastor, D., Fernandez-Guzman, D., Caira-Chuquineyra, B., Herrera-Añazco, P., Benites-Zapata, V. A., & Bendezu-Quispe, G. (2022). Prevalence and factors associated with not receiving the booster dose of the COVID-19 vaccine in adults in Latin America and the Caribbean. *Travel Medicine and Infectious Disease*, *50*, 102409. Retrieved on 20th December, 2022 from https://doi.org/10.1016/j.tmaid.2022.102409