

Original Research Article

How Demographic Factors Affecting Acceptability of COVID 19 Vaccination: Experience from Community Members in Iringa Municipality

Abstract

COVID 19 vaccination was fast key intervention against the COVID-19 pandemic. Vaccine acceptance among community members is essential to promote uptake. This study, aimed to examine how demographic factors affected accessibility of COVID 19 vaccination in Tanzania among community members. The study was qualitative and quantitative in nature where cross section research design was used to capture data at one time.

Questionnaire was used to collect data for statistical analysis from community members who were vaccinated and non-Vaccinated. Questionnaire was found to be suitable as it captures measurable data suitable for research questions. We collected quantitative data by using an interviewer administered questionnaire and qualitative data, using in-depth interviews and focus group discussions. Participants in the quantitative aspect were conveniently selected whereas those in the qualitative aspect were purposively selected based on their role in patient care, management, and vaccine provision. Snow ball and Simple random sampling was used to draw 108 respondents from the targeted population in the context of Iringa Municipality. Statistical Package for Social Science analysis software version 26 was used in the analysis of quantitative data and thematic analysis for the qualitative data.

Using descriptive statistical analysis, findings revealed that demographic factors had effect on acceptability on COVID19 vaccination on community members. This study recommends that there is a need to launch an effective vaccine education program on radio, television, print, and social media to increase knowledge about vaccination so that Tanzania can achieve immunization against COVID-19 among community members.

Comment [DM1]: Mention the factors that had effect on the vaccine

Key Word: Acceptability, COVID 19 vaccine, Vaccination, Demographic Variables

1. Introduction

Vaccination is the **most way** in protecting public health from the corona virus disease (COVID-19), leading to a decrease in the mortality and morbidity of infectious disease which save millions of lives annually (WHO 2021). Due to the ~~Continue~~ **continued** transmission of corona virus disease (COVID 19) and lack of effective measures such as pharmacological measures against virus infection and disease, vaccination became **as** major way to prevent corona virus disease (COVID 19). However, vaccines were produced more in response to pandemic. In Tanzania ~~the~~ little was known toward acceptability of Corona virus disease vaccination due to spread of fake news and misinformation and change in perception of disease risk (Lin *et al.*, 2021). ~~and~~ Furthermore, some ~~of the~~ studies had shown that there is problem in accepting the COVID 19 vaccine, and **we** decided to find out what **demographic** factors affecting the acceptability of COVID 19 vaccination programme among community members ~~such demographic factor~~, (Yasoret *et al.*, 2021). Previous empirical studies have evidenced that older people, **female** and groups were ~~at~~ more **at** risk of COVID 19 pandemic due to vaccine refusal (Ayaz *et al.*, 2022 and Ghare *et al.*, 2023). In Tanzania, Cholongola (2020) maintained ~~occupation~~ (teachers, health care workers, and students) were ~~shown to be~~ more hesitant about vaccination. In this study, healthcare workers (HCWs) were averse to get COVID-19 vaccine. Konjeet *et al.*, (2022); Amouret *et al.*, (2023) found that uptake of the COVID-19 vaccine among health professionals was low, with less than a quarter being vaccinated across all surveyed districts in western Tanzania.

Comment [DM2]: ??

However, demographic factors had been shown to be factor affecting acceptability for COVID 19 vaccination among community members. **This** study focused to examine how ~~the~~ demographic factors ~~can~~ affect the acceptability of the COVID 19 vaccination among community members using the Health Belief Model of Jones (2015). In his Model, the author advocates that the model ~~have~~ key elements focus on individual beliefs about health conditions, which predict individual health related behaviors. In spite of the evidence that ~~D~~ demographic factors had effect on acceptability of COVID19 vaccination among community members, some of the empirical evidence had found employment status ~~does~~ not seem to affect a person to accept the vaccine against COVID-19 (Liu *et al.*, 2021; Wang, Q. *et al.*, 2021). Looking at age for example, there are studies that observe no significant effect of age on COVID-19 vaccination acceptability (Alley *et al.*, 2021) or that younger people are more acceptance to get vaccine than older people (Liu *et al.*, 2021). Most research, however, points towards a larger

Comment [DM3]: ????

vaccination acceptance for COVID-19 among older generations (Acheampong *et al.*, 2021; Banik *et al.*, 2021; Cascini *et al.*, 2021; Kessel *et al.*, 2021; Wang, Q. *et al.*, 2021), as they are generally more afraid of severe health consequences in case of infection and have previously experienced other successful vaccination campaigns. In terms of education, the findings are just as mixed. In their review of vaccination acceptability on Education level Solís Arce *et al.* (2021) ~~find~~ ~~found~~ that less-educated participants were more acceptable to get vaccine in most studies covering Sub-Saharan Africa. Nevertheless, Acheampong *et al.* (2021) ~~found~~ ~~ind~~ no significant effect of education on vaccination acceptance in Ghana. On top of that, higher levels of education are positively correlated with vaccination acceptance in adults in the United States (Kreps *et al.*, 2021). Therefore, we filled this ~~e~~ gap by answering the research question that; how do demographic factors affect the acceptance of COVID-19 vaccines.

2. Material and Methods

The study adopted qualitative and quantitative approach. As Kothari (2004) argued, ~~Q~~ qualitative approach refers to a form of research which involves description to obtained data, while quantitative approach is defined as the generation of data in the quantitative form, which focus to enable collection and analysis of data. This made it simple to determine factors that had ~~been~~ affected the acceptability of COVID 19 vaccination in the current study. ~~Q~~ Quantitative approach was used to allow a researcher to collect statistical data for research question on how demographic factors ~~s~~ affecting the acceptability of COVID 19 vaccination. To obtain the statistical data, the author administered a structured survey to Community members in Iringa Municipality. Simple random sampling was used to draw valid sample of 54 non-Vaccinated and snow ball for 54 Vaccinated respondents from the population who were community members. ~~2~~ key informants from health facilities and 10 respondents for Focus group Discussion.

3. Results and discussion

Table 1 below present the finding on how demographic factors affect acceptance of vaccination in Iringa.

Table 1: Demographic factors of the respondents (n=108)

	Vaccinated		Non Vaccinated	
	N	%	N	%
Age of Responders				
18-27	8	14.8	25	46.3
28-37	9	16.7	17	31.5
38-47	12	22.2	6	11.5
48-57	13	24.1	5	9.3
58+	12	22.2	1	1.9
Total	54	100	54	100
Gender of respondents	n	%	N	%
Male	32	59.3	19	35.2
Female	22	40.7	35	64.8
Total	54	100	54	100
Education level of the respondents	N	%	N	%
Primary	21	38.9	13	24.1
Secondary	26	48.1	10	18.5
Certificate	2	3.7	5	9.3
Diploma	4	7.4	16	29.6
Degree	1	1.9	0	0
Uneducated	0	0	10	18.5
Total	54	100	54	100
Occupation of the respondents	N	%	N	%
Farmer	15	27.8	7	13
Entrepreneur	21	38.9	13	24.1
Employees	10	18.5	19	35.2

Unemployed	8	14.8	15	27.7
Total	54	100	54	100

Source; interview with respondents 2023

The interpretation of this results is elaborated as follows

3.1. Age

The respondents' ages ranged from 18 to 58+ with average years of 38 years. The ages were put into five groups, 18-27 years, 28-37 years, 38-47 years, 48-57 years and aged 58 and above. The distribution is presented in Table below. The categorization showed that aged between 48-57 years was the prominent group of accepting COVID 19 vaccine, representing 24.1% of all the respondents in the Vaccinated group. The reason for most respondents belonging to this group was most of them had high risk of getting Corona Virus Disease.

While for the non-vaccinated respondents, the greater number of the respondents in this category was 18-37 years, representing 46.3 % of all the respondents in the non-Vaccinated. They were not influenced to accept COVID 19 vaccine because of ~~the~~ some ~~of the~~ reasons such as their body had enough immunity which can help them to be safe and some of them, they had fear ~~on~~ ~~that~~ COVID 19 vaccine can cause side effect to them.

During Focus group discussion, community members said people ~~with- aged~~ more than 40 ~~ages~~ ~~year~~ had more acceptability ~~of- towards~~ COVID 19 vaccine; ~~as they~~ had fear of being affected with corona virus disease because ~~they- get~~ of the different information ~~they- get~~ from different sources of information that COVID 19 ~~it- is~~ so dangerous. And ~~for- of~~ those who were not vaccinated, most of ~~the~~ youth, ~~were- did~~ not accept vaccine because they get misinformation about COVID 19 vaccine ~~and- that~~ said ~~V-~~ vaccine ~~it- is~~ not cures for them but it has side effect such ~~as~~ it destroys reproductive system. ~~Thus they- F-~~ felt that the COVID-19 vaccines had potential adverse effects. The fear of potential adverse effects has been reported to be one of the major reasons leading to vaccine hesitancy (Lazarus, *et al.*, 2021; Edwards *et al.*, 2021); ~~-in~~ individuals aged 41-50 years ~~who~~ were willing to receive the vaccine (Elhadi *et al.* 2021).

3.2. Sex

The findings on sex status showed that 59.3% of the respondents were males who accept to take COVID 19 vaccine and for non-Vaccinated 64.8% were female who ~~were did~~ not accept to be vaccinated. This showed that the Vaccine acceptance was higher among men compared to women. The low number of females ~~to who~~ accept the COVID 19 vaccine was probably due to ~~the fact that the males they~~ are more affected with COVID 19 pandemic than women. From ~~F~~focus ~~G~~group ~~D~~discussion with community members the following ~~despondence responses~~ were tapped; male was too mobile as they interact with the general population more often than female; females mentioned the use of other vaccines and medicines has limited their acceptance of other medicinal treatment. The findings of this study are similar with the report from reviewed literatures ~~where it has been maintained~~. Nery *et al.*, (2022); Tayyaba, *et al.* (2021); Echoruet *et al.*, (2021) ~~found also reported~~ that Vaccine acceptance was higher among men compared to women.

3.3 Level of Education

Concerning level of education, the study revealed that 38.9% and 48.1% had primary and secondary level of education respectively had more acceptance on COVID 19 vaccine compared with other levels. Higher level of education acceptability of COVID19 vaccine was low for respondents who were vaccinated. This implies that COVID 19 vaccine acceptability was not determined by the level of education. For those who were not vaccinated, 29.6% of the respondents had Diploma level of education and uneducated were 18% The data revealed that majority of vaccinated respondents had primary and secondary level of education, this is due to the fact that, many of the community members had primary and secondary level of education in area data ~~were was~~ collected, compared to those with high level of education. The difference in level of education means there could be difference on the way people perceive things or issues related with COVID 19. The difference in level of education aids the study to gather different opinion. From this study it may be ~~on~~ the people and place ~~were where~~ data ~~it's was~~ collected; ~~that~~ gave us this result of few people with high level of education ~~did~~ not accepting COVID 19 vaccine.

From focus group discussion, community members said that for people to be affected with COVID 19 pandemic it cannot depend on the level of education, everyone can get Corona virus disease and more people either have low or high level of education not living with high-risk group were relatively having poor perception on COVID 19 vaccination, hence it greatly affected the acceptance of Covid-19 vaccine. Therefore, people living with high risk group increases the likelihood of vaccine acceptance and not the level of education. The findings of this study are similar with Nurul *et al.*, (2021) found that, people with low education levels, low income and not living with high-risk groups were relatively having poor perception on COVID 19 vaccination.

Comment [DM4]: What exactly was intended to be said here. Not clear at all

3.4 Occupation

It was found by the study that among the vaccinated, 38.9% were entrepreneurs and 27.8% of respondents were farmers had high acceptance of COVID 19 vaccine than employees and unemployed. This implies that entrepreneurs were most vulnerable to get COVID 19 disease. Compared to non-Vaccinated the study found that employees had low acceptability of COVID19 vaccination, representing 35.2% who were not taking the vaccine.

In focus group discussion, participants gave out the same reasons, Entrepreneurs were more acceptable to take COVID19 vaccine because were more vulnerable and needed to get self-protection and their families from pandemic. Evidence has shown that employees were likely to receive a COVID-19 vaccine if their employer recommended it (Lazarus *et al.*, 2021). Steward *et al.*, (2022) found that entrepreneurs were more likely to accept the COVID-19 vaccine than those employees

4. Conclusion

COVID-19 vaccines acceptability was higher in the general population particularly in elderly people, males, people with less education and Entrepreneurs. There is a need to make an effective vaccine education program on radio, television, print, and social media to increase knowledge about vaccination so that Tanzania can achieve immunization targets against COVID-19 among community members.

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