Original Research Article

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 examinehow demographic factors affected accessibility of COVID 19 vaccination in Tanzania among community members. The study was mixedmethod research approach in nature where cross section research design was used to capture data at one time.The study employed a sample size of 120 respondents, including vaccinated, non vaccinated, key informants and respondents for focus group discussion from three wards in Iringa Municipality 0n June to July 2022. Simple random sampling was used to select 54 non vaccinated and 10 respondents for focus group discussion, snow ball for 54 vaccinated and purposively for 2 key informants. Both qualitative and quantitative data gathering techniques were employed in the study. Using descriptive statistical analysis,findings revealed that demographic factors such as elderly people, men, people with low education and entrepreneurs have an effect on public acceptance of the Covid-19 vaccine. In fact, administering vaccines has a big influence on the success of handling the Covid-19 pandemic. For this reason, it is necessary to carry out further studies regarding the effect of these factors in receiving the Covid-19 vaccine.

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

Introduction

VaccinationagainstCOVID-19 is one of the key and lifesaving preventive measures against the COVID-19 Pandemicin protecting public health from the corona virus disease (COVID19), leading to a decrease in the mortality and morbidity of infectious disease which save millions of lives annually (WHO 2021). Due to the continued transmission of corona virus disease (COVID 19) and lack of effective measures such as pharmacological measures against virus infection and disease, vaccination became a major way to prevent corona virus disease (COVID 19).However, vaccines were produced more in response to pandemic.In Tanzania 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). Furthermore,some studies had shown that there is problem in accepting the COVID 19 vaccine, and we decided to find out what demographic factors affect the acceptability of COVID 19 vaccination programme among community members (Yasor*et al.,* 2021). Previous empirical studies have evidence that older people, and female were more at risk of COVID 19 pandemic due to vaccine refusal (Ayaz *et al.,* 2022 and Ghare *et al.,* 2023). In Tanzania, Chilongola (2020) maintained teachers, health care workers, and students)were more hesitant about vaccination. In this study, healthcare workers (HCWs) were averse to get COVID-19 vaccine. Konje*et al.,* (2022): Amour*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.However, demographic factors had been shown to be factor affecting acceptability for COVID 19 vaccination among community members.This study focused toexamine how demographic factors affect the acceptability of the COVID 19 vaccination among community membersusing the Health Belief Model of Jones (2015). In his Model, the author advocates that the model key elements focus on individual beliefs about health conditions, which predict individual health related behaviors. In spite of the evidence thatdemographic 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 personto 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 youngerpeople are more acceptance to get vaccine than older people (Liu *et al.,* 2021). Most research, however, points towards a larger vaccination acceptance for COVID-19 among older generations (Acheampong *et al.,* 2021; Banik *et al*.,

2021; Cascini*et al*., 2021; Kesselset *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 acceptabilityonEducation level Solís Arce *et al*. (2021) found that less-educated participants were more acceptable to get vaccine in most studies coveringSub-Saharan Africa. Nevertheless, 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 gap by answering the research question that; how do demographic factors affect the acceptance of COVID-19 vaccines.

2. Literature review

From the empirical review, studies had found that older people (38 and above) were more likely to accept vaccination than people with lower aged below 35, they were not likely to accept COVID 19 vaccination, believe that COVID-19 poses a less serious threat to themselves than to other age groups (Elhadi et *al*., 2021;Yosor*et al*., 2021; Tayyaba, *et al.*, 2021*;* Lazarus *et al*., 2021). According to sex, literatures showed that male were more in acceptability of COVID 19 vaccination than female in different places Lin *et al*., 2021; Robinson *et al*., 2020; Nery *et al*., 2022). In Africa,Echoru*et al*., (2021) conducted study on Socio demographic factors associated with acceptance of COVID-19 vaccine and clinical trials in Uganda: a cross-sectional study in western Uganda, founded those Male respondents also showed more interest in receiving the vaccine than the females This was also a possible indicator of fear for the vaccination among the female gender. Nurul *et al*., *(*2021) in Malaysia, 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; hence it greatly affected the acceptance of Covid-19 jabs. Lower educational level increased the likelihood of vaccine hesitancy (Lazarus *et al.*, 2021). Vaccine acceptance rates were the lowest among employees, such as health professionals Steward *et al*., (2022) on Prevalence and factors associated with COVID-19 vaccine acceptance in Zambia: a web-based cross-sectional study, found that entrepreneurs were more likely to accept the COVID-19 vaccine than those government employees. Evidence has shown that employees are likely to receive a COVID-19 vaccine if their employer recommended it (Lazarus *et al*., 2021).

3. Material and Methods

The study was carried out in Iringa Municipality,adopted mixed methodsapproach.This made it simple to determine factors that had affected the acceptability of COVID 19 vaccination in the current study.Quantitative approach was used to allow a researcher to collect statistical data for research question on how demographic factors affectthe acceptability of COVID 19 vaccination. To obtain the statistical data, the author administered a structured survey to Community members in Iringa Municipality. The study used a sample size of 120 respondents, including vaccinated, non vaccinated, key informants and respondents for focus group discussion. Simple random sampling was used to draw valid sample of 54 non-vaccinated, where every subject of the population has an equal chance of being selected for the study and the researcher decides to choose this technique because it includes the whole population without bias and allows researchers to easily collect data, snow ball for 54 vaccinated respondents from the population who were community members, purposivelysampling for 2 key informants from health facilities and 10 respondentsfor Focus group Discussion from the entire population. Data were collected through questionnaires and interviews, and analysed through descriptive statistics. Ethical issues were ensured through participants consent form, integrity and anonymity. All collected information was kept confidential and were used only for the intended objective of the study.

4. 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**	
Age of Responders	N	%	N	%
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 1. 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. This implied that most respondents belonging to this group (48-57) 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 some reasons such as their body had

enough immunity which can help them to be safe and some of them, they had fear that COVID 19 vaccine can cause side effect to them. It was supported during the interview by doctor in charge for Sabasaba dispensary *"People with more than 38years are more accepting to be vaccinated compare to other age groups, because they have high risk of getting Corona Virus disease".*During Focus group discussion, community members said people aged more than 40 years had more acceptability towards COVID 19 vaccine as they had fear of being affected with corona virus disease because of the different information they get from different sources of information that COVID 19 is so dangerous. And of those who were not vaccinated, most of the youth,did not accept vaccine because they get misinformation about COVID 19 vaccine that said vaccine is not cure for them but it has side effect such as it destroys reproductive system. Thus, they 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 did not accept to be vaccinated. This showed that the Vaccine acceptance was higher among men compared to women. The low number of females who accept the COVID 19 vaccine was probably due to the fact that males are more affected with COVID 19 pandemic than women. During the interview by doctor in charge for Saba saba dispensary "*Vaccine acceptance was higher among men compared to women this is due to the fact that during COVID 19 pandemic, male was more affected with this pandemic which cause many deaths to them so they had more influenced with COVID 19 vaccine".*From focus group discussion with community members the following 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. Nery *et al*., (2022); Tayyaba, *et al.* (2021**);** Echoru*et al*., (2021) 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 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 the people and place where data was collected that gave us this result of few people with high level of education not accepting COVID 19 vaccine. During the interview by doctor in charge for Saba saba dispensary "*Many people who to take a COVID 19 vaccine easy are people with low education level compare to those with higher level of education because it very hard to convince the person who has high level of education to understand and accepting COVID19 vaccine although some of them who are living with high risk on diseases, they accept the vaccine faster"*. 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, Therefore, people living with high-riskgroup 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.

3.4 Occupation

It was found by the study that among the vaccinated, 38.9% entrepreneurs and 27.8% farmers had high acceptance of COVID 19 vaccine than employees and unemployed. This implies that entrepreneurs were most vulnerable to 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. During the interview by doctor in charge for Ngome dispensary "*Entrepreneurs are most vulnerable to get COVID 19 disease due to their daily*

activities; they need to get vaccine in order to protect their families. Employees who accept COVID 19 vaccine most of them are Health workers because having high risk of getting COVID 19". 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. In fact, administering vaccines has a big influence on the success of handling the Covid-19 pandemic. There is a need to make an effective vaccine education program on radio, television, print, and social media to increase knowledge about vaccination to all people in a community, so that Tanzania can achieve immunization targets against COVID-19 among community members and it is necessary to carry out further studies regarding the effect of these factors in receiving the Covid-19 vaccine.

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