Determinants, Awareness, and Perceptions of COVID-19 Vaccination among Youth in Dar es Salaam, Tanzania

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ABSTRACT

The global community has seen significant negative impacts as a result of the COVID-19 pandemic. The primary objective of this study was to assess the perceptions, awareness, and determinants among young individuals concerning the COVID-19 vaccine. The research employed a cross-sectional approach and was carried out using internet platforms within the Dar es Salaam region of Tanzania, spanning from December 2021 to December 2022. The study's sample consisted of 435 individuals who were classified as young people. The data was collected through the utilization of questionnaires developed by Google Forms, which were thereafter distributed among participants via WhatsApp groups. The programme utilized for data cleaning and analysis was STATA 15.1. Categorical variables were summarised using descriptive statistics, including frequency distribution tables, pie charts, and bar charts. The study employed inferential statistics, namely the Chi-square test, to assess the association between the COVID-19 immunization status and several socioeconomic demographic characteristics, perceived factors, and awareness-related parameters. Results achieving a significance level of 0.05 were considered statistically significant. Based on these findings, it was recommended that decision-makers should continue directing endeavors focused on increasing the acceptance of COVID-19 vaccinations and minimizing the wastage of vaccines. Also, youths are encouraged to take vaccines for the fortification of their health hence reaching the intended purpose and saving funds that would have been used in managing other health, social, and economic challenges.

Keywords: *Awareness, Dar es Salaam Region, Determinants, Perception of COVID-19 Vaccines, Youth*

I. INTRODUCTION

The onset of the COVID-19 pandemic may be traced back to December 2019 in Wuhan, China. It is attributed to the emergence of the new coronavirus SARS-CoV-2 (Mohan & Nambiar, 2020). The rapid spread of the virus occurred on a global scale, prompting the World Health Organization (WHO) to officially designate it as a global pandemic on March 11, 2020 Despite China's early lockdown efforts, COVID-19 rapidly leaped beyond its borders, reaching Thailand, Japan, and South Korea as early as January 2020. By February, according to El Zowalaty et al. (2020), the virus had swept through Europe and the US, with Italy and Spain facing the brunt. Governments worldwide scrambled to contain the spread with measures like roadblocks, travel restrictions, and mask-wearing mandates. The pandemic's economic impact was severe, leading to job losses, business closures, and a significant drop in global trade (Maliszewska et al., 2020).

To combat the global threat, a vast scientific collaboration led to the COVID-19 vaccine. By the end of 2020, several COVID-19 vaccines had been developed and received emergency use authorization, including those from Pfizer/BioNTech, Moderna, and AstraZeneca. As of April 2023, the pandemic continues to impact numerous countries, with surges in infections and hospital admissions primarily due to the emergence of new viral strains. However, vaccination campaigns have also helped to reduce the severity of the epidemic in many countries, fostering hope that sustained efforts will eventually lead to the resolution of this global crisis.

In February 2021, Tanzania's president, John Magufuli, recognized the ongoing issue of COVID-19 within the nation and encouraged citizens to adopt preventive measures against the virus. Despite this, the Tanzanian government did not disclose any official data on COVID-19 cases or fatalities in Dar es Salaam or other regions of the country. After President Magufuli's passing in March 2021, his successor, Samia Suluhu Hassan, declared a shift in Tanzania's approach to the COVID-19 pandemic. The government started to acknowledge the gravity of the situation and introduced measures such as mandatory mask-wearing and increased testing (Pipkin, 2022). In April 2021, Tanzania obtained its first batch of COVID-19 vaccines through the COVAX program (Ogunleye et al., 2022).

Nonetheless, vaccination reluctance remains a big barrier throughout the country, particularly in Dar es Salaam. According to a recent study conducted by Osuagwu et al. (2022), there is a significant presence of vaccine disinformation on numerous social media platforms. Inaccurate information transmission has been recognized as a potential factor contributing to vaccine hesitancy among specific sectors of the public. Furthermore, concerns have been raised about the safety and efficacy of various COVID-19 vaccines, particularly the AstraZeneca vaccine, which was initially distributed in Tanzania. The AstraZeneca vaccination was temporarily banned in Tanzania in March 2021, citing concerns over the prevalence of blood clotting problems. However, it is crucial to note that the World Health Organization (WHO) and other respected health organizations have said that the benefits of vaccination outweigh the risks (WHO, 2021; Navar & Bonow, 2022). In general, the issue of the adoption of COVID-19 vaccines among the population of Dar es Salaam and Tanzania at large persists as a formidable obstacle, necessitating ongoing endeavors to enhance the acceptance and utilization of vaccines within the nation. Consequently, the researcher was compelled to evaluate the factors, level of awareness, and perception of COVID-19, whether vaccinated or not, among the population residing in the Dar es Salaam region.

II. LITERATURE REVIEW

Previous research has indicated that there exists variability in the acceptance and utilization of vaccines across different geographical and spatial contexts, Schoch-Spana (2021). The availability and uptake of COVID-19 vaccines in Sub-Saharan Africa have shown improvement; however, they still lag significantly behind the rates observed in affluent European and North American nations (Basak et al., 2022). By January 2021, only 11% of the adult population in Africa had received complete vaccination (Chanda et al., 2022). There exist notable variations in the implementation and initiation of vaccination initiatives across different nations (Miner et al., 2023; Abu et al., 2021; Dzinamarira et al., 2021). However, a previous investigation has revealed that there are resemblances in the attitudes and risk perceptions towards COVID-19 among individuals of African descent residing both locally and in the diaspora, primarily in Western countries during the period of lockdown. These findings imply the possibility of similarities in the acceptance and utilization of COVID-19 Vaccines within these populations. Richard (2020) describes Lower-middle-income nations, including Tanzania in Sub-Saharan Africa, as well as India, Bangladesh (76.7%), and Egypt (42.6%), have reported varying rates of vaccine acceptance. According to a study conducted by Carcelen et al. (2022), the uptake of COVID-19 vaccines was influenced by factors such as the hazards associated with COVID-19 infection and the concept of masculinity. According to a study conducted by Machingaidze and Wiysonge (2021), the inclination to receive the COVID-19 vaccine was greater in lower-middle-income nations when compared to the United States and Russia. The acceptance or rejection of the COVID-19 vaccination is impacted by changes in behaviour and attitudes toward perceived disease risks in many low- and middle-income nations, especially in Sub-Saharan Africa, (Carcelen et al., 2022). According to a recent study conducted by Kelly et al. (2021), there is a gender disparity in the readiness to obtain COVID-19 immunization inside the United States. Specifically, the study revealed that women exhibited a reduced inclination to obtain immunizations compared to men. Green et al. (2021) discovered a gender gap in COVID-19 immunization readiness, with women showing lower levels of availability.

III. METHODOLOGY

As part of a cross-sectional study, online surveys were distributed in Tanzania's Dar es Salaam region between December 2021 and December 2022. Dar es Salaam, the country's economic centre, was chosen due to its high vaccine wastage rates in September 2021, when the study protocol was being prepared. The five municipalities that make up Tanzania's most populated region, which encompasses 1,393 square kilometers and is home to more than 6 million people, are Ilala, Kinondoni, Temeke, Ubungo, and Kigamboni. A voluntary sampling method was used, involving a total of 435 participants.

The questionnaire was generated using the Google Forms platform and afterward disseminated via WhatsApp groups. Participation in this study was entirely voluntary, and no form of compensation was provided to participants. Throughout the process of data collecting, utmost care was taken to ensure the preservation of participant confidentiality. The data that was gathered was subsequently converted from a Google form to an Excel spreadsheet. The software package STATA 15.1 was utilized for data cleaning and analysis. Categorical variables were summarized using descriptive statistics, including frequency distribution tables, pie charts, and bar charts. In this study, inferential statistics, namely the Chi-square test, were employed to assess the association between COVID-19 vaccination status and several characteristics related to socioeconomic demographics, perceived factors, and awareness. Results achieving a significance level of 0.05 were considered statistically significant.

IV. FINDINGS & DISCUSSIONS

4.1 Findings

4.1.1 Social Demographic Characteristics of Respondents

According to the findings presented in Table 1, out of the total respondents, 212 individuals (48.74%) identified as female, while 223 individuals (51.26%) identified as male. This finding suggests that a significant proportion of the participants were of the masculine gender. Furthermore, the data reveals that out of the total respondents, 358 individuals (82.30%) fell within the age range of 18-25 years, while 70 individuals (16.09%) were aged between 26-34 years. Additionally, 6 individuals (1.38%) belonged to the age group of 35-42 years, and only 1 individual (0.23%) was aged between 43-50 years. This finding suggests that a significant proportion of the participants were between the age ranges of 18 to 25 years. Furthermore, it was found that 276 respondents, accounting for 63.45% of the whole sample, possessed a bachelor's degree. Additionally, 64 respondents, representing 14.71% of the total sample, had obtained a diploma. Only 1 respondent, constituting 0.23% of the total sample, had achieved a PhD. Lastly, 94 respondents, making up 21.61% of the total sample, had completed their secondary education. This finding suggests that a significant proportion of the participants obtained a Bachelor's degree. Furthermore, out of the entire sample, 10 individuals (2.3%) were found to be employed, whereas the majority of respondents, specifically 425 individuals (97.7%), reported being unemployed.

Table 1

Social Demographic Characteristics of Respondents

Social demographic Characteristic		**Freq.**	**Percent**
Gender	Female	212	48.74
	Male	223	51.26
	Total	**435**	**100.00**
Age	18-25	358	82.3
	26-34	70	16.09
	35-42	6	1.38
	43-50	1	0.23
	Total	**435**	**100**
Level of Education	Bachelor Degree	276	63.45
	Diploma	64	14.71
	PhD	1	0.23
	Secondary education	94	21.61
	Total	**435**	**100**
Employment status	Employed	10	2.3
	Not employed	425	97.7
	Total	**435**	**100**

4.1.2 Vaccination Status of Survey Respondents in Relation to COVID-19

Figure 1 revealed that that out of the total respondents, 31 individuals (7%) reported being vaccinated, while the majority of respondents, namely 404 individuals (93%), reported not being vaccinated. This finding suggests that a significant proportion of the participants did not receive vaccination.

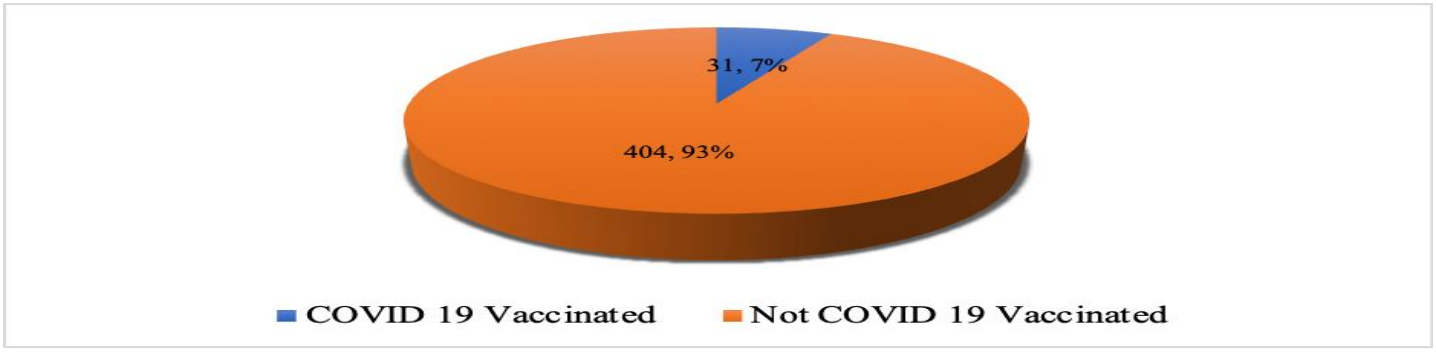

Figure 1

Vaccination Status of Survey Respondents in Relation to COVID-19 in Percentage

4.1.3 Prevalence of COVID-19 Awareness among Survey Respondents

Figure 2 revealed that out of the total respondents, 120 individuals (27.59%) possessed knowledge regarding their contraction of COVID-19, whereas 274 individuals (62.99%) were aware that they had not contracted the virus. Additionally, 41 individuals (9.43%) expressed uncertainty regarding their COVID-19 status. This finding suggests that a significant proportion of participants have prior awareness of their contraction of the COVID-19 virus.

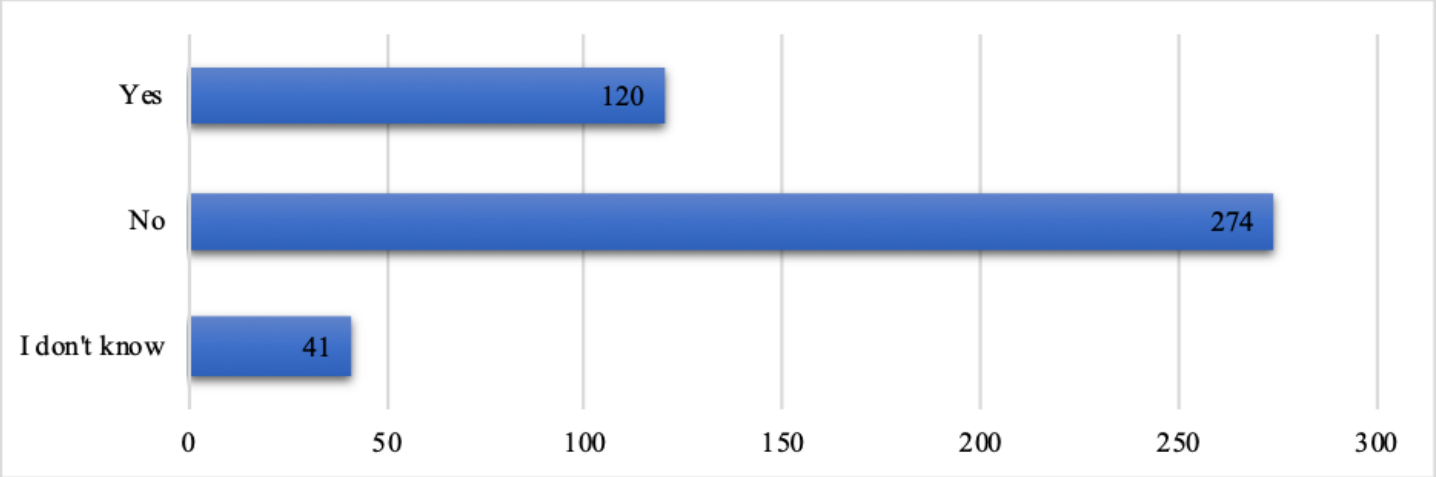

Figure 2

Percentage Prevalence of COVID-19 Awareness among Survey Participants

4.1.4 Treatments Care Received by Respondents Who Had COVID-19

According to the findings presented in Figure 3, out of the total respondents who had contracted COVID-19, 31 individuals (equivalent to 60.83% of the total) opted for traditional or alternative medicine as a form of treatment. Additionally, 16 respondents (13.34% of the total) required hospitalization or received medical care for their condition. Interestingly, a significant majority of 73 respondents (60.83% of the total) did not seek any form of medical care for their COVID-19 infection. This finding suggests that a significant proportion of the overall participants who contracted COVID-19 did not actively pursue medical assistance.

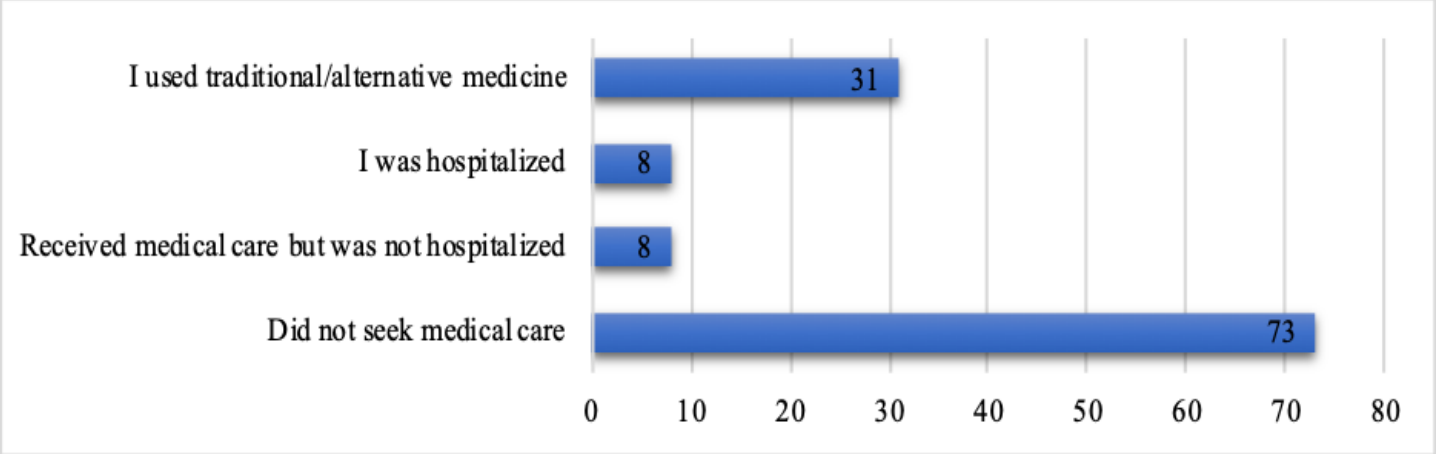

Figure 3

Treatments Care Received by Respondents Who Had COVID-19 in Percentage

4.1.5 Vaccination Regimens Requiring Single or Dual Doses Among Respondents.

Figure 4 demonstrates that the majority of survey participants, comprising 77% or 24 individuals, who received the COVID-19 vaccination, opted for products that necessitate a second dose.

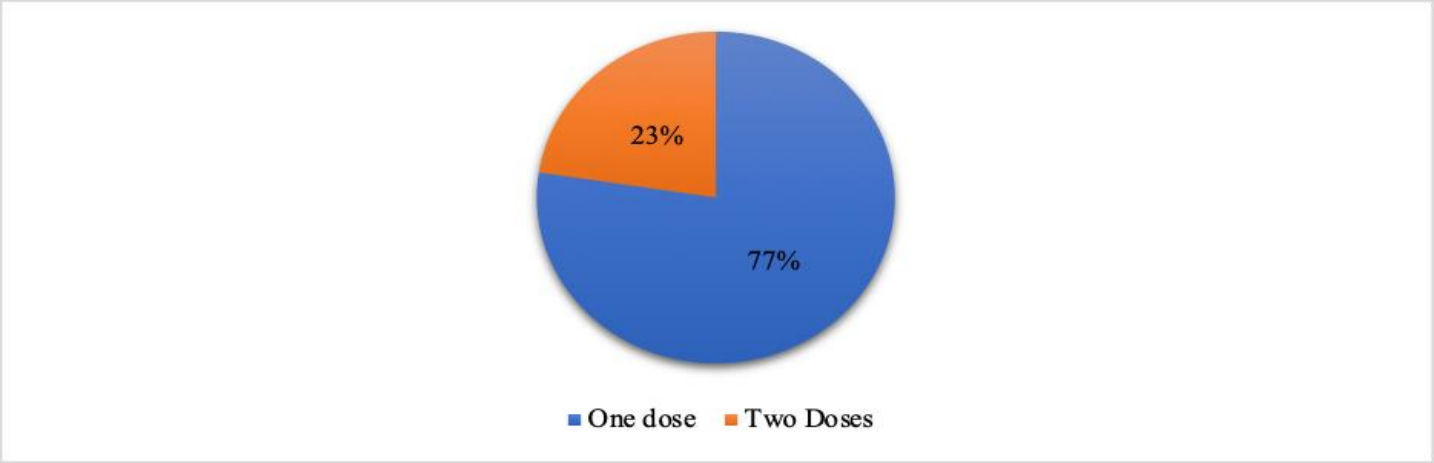

Figure 4
Vaccination Regimens Requiring Single or Dual Doses Among Respondents in Percentage

4.1.6 Side Effects Experienced by Respondents after Received COVID-19 Vaccine

According to the findings presented in Figure 5, a significant proportion of the respondents who received the COVID-19 vaccination reported no occurrence of any adverse effects. A limited number of individuals reported symptoms such as fever, headache, joint discomfort, nausea, blood clotting, and localized pain at the injection site.

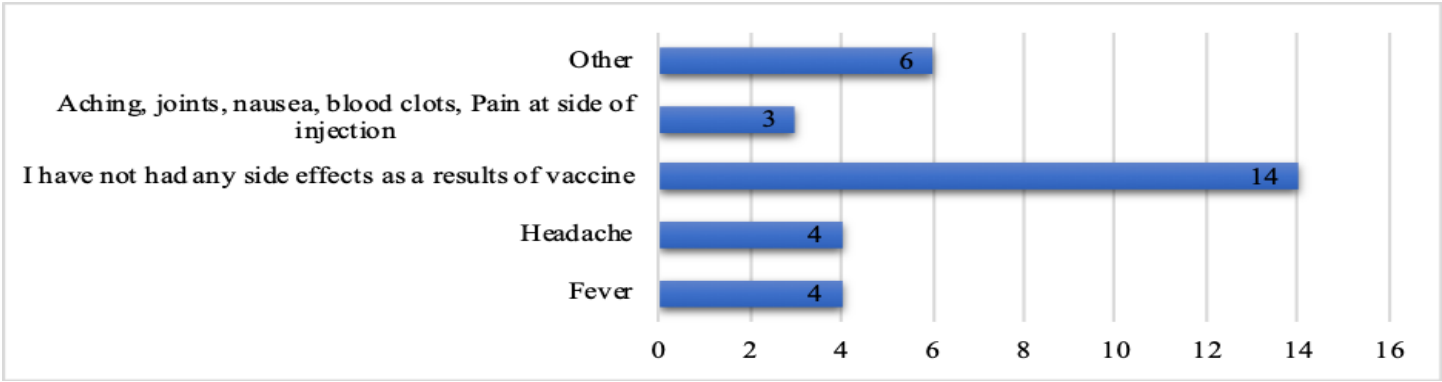

Figure 5
Side effects experienced by respondents after receiving 19 vaccines in Percentage

4.1.7 Duration of Respondents' COVID-19 Vaccination Adverse Effects

Figure 6 revealed that majority of respondents who received COVID-19 vaccine did not experience any side effects. Some experienced side effects for 1 up to 7 days, and others had them for up to one month.

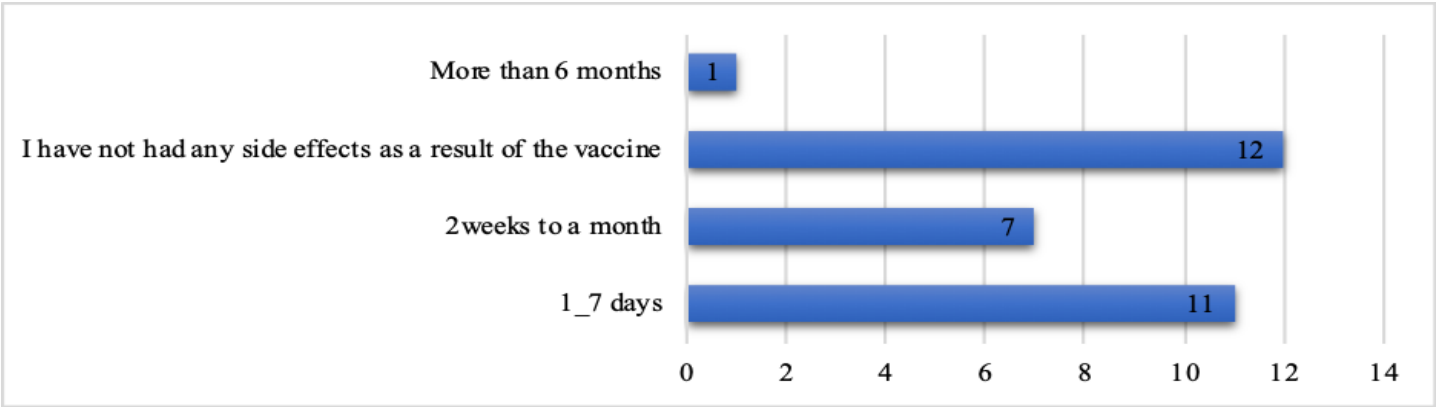

Figure 6
Duration of Respondents' COVID-19 Vaccination Adverse Effects as a Percentage

4.1.8 Perceptions of COVID-19 Vaccine Safety among Unvaccinated

Figure 7 revealed that the majority of respondents 146(36.14%) who were not COVID-19 vaccinated believe the vaccine is not safe at all, while just 59(14.60%) believe it is safe.

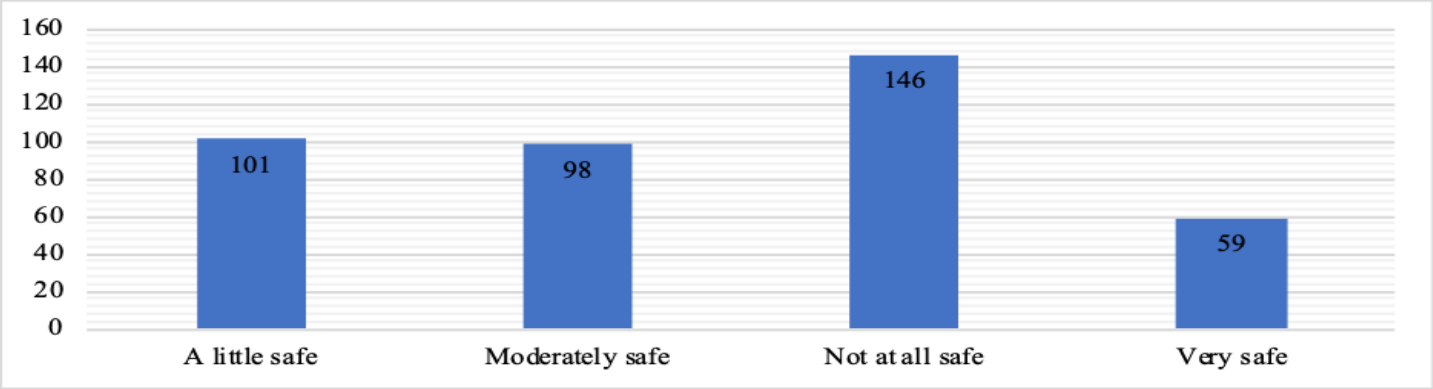

Figure 7

Perceptions of COVID-19 Vaccine Safety among Unvaccinated as a Percentage

4.1.9 Willingness of Unvaccinated Individuals to Receive COVID-19 Vaccination upon Availability

According to the findings presented in Figure 8, a significant proportion of respondents, specifically 141 individuals (34.9%), who have not received the vaccination, expressed their unwillingness to get vaccinated even if the vaccine becomes accessible.

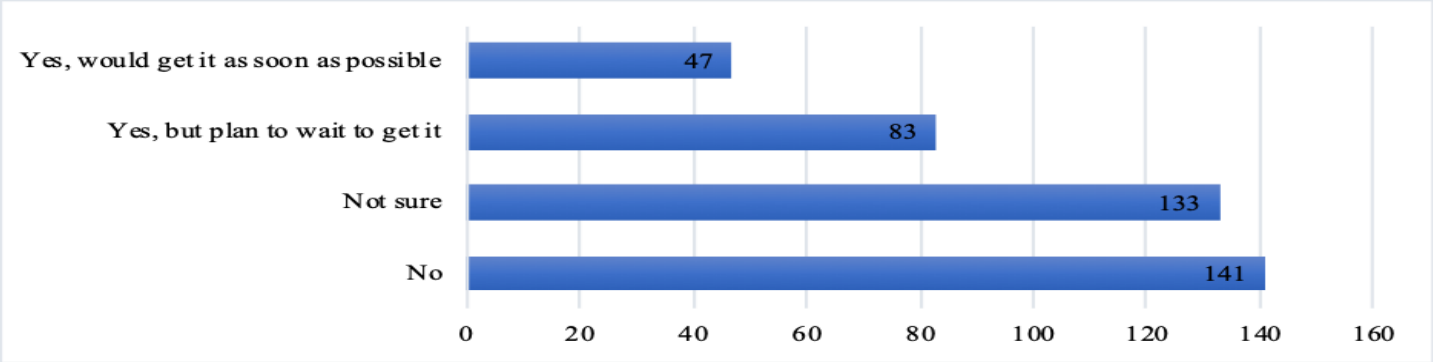

Figure 8

Willingness of Unvaccinated Individuals to Receive COVID-19 Vaccination upon Availability as a Percentage.

4.1.10 COVID-19 Vaccination Status and Socioeconomic Characteristics

According to the findings presented in Table 2, a significant proportion of participants who received the COVID-19 vaccine were males aged 21, accounting for 67.74% of the total. Additionally, an equal number of male and female respondents, specifically 202 individuals each, reported not having received the COVID-19 vaccine. The obtained P-value of 0.007 suggests a statistically significant association between the gender of respondents and their COVID-19 vaccination status, as the P-value is lower than the predetermined significance level of 0.05. Furthermore, it is worth noting that a significant proportion of the participants who received the COVID-19 vaccine were in the age group of 20 (64.52%) and 18-25 years. Conversely, among those who had not received the COVID-19 vaccine, a majority of 338 individuals (83.66%) fell into the age range of 18-25 years. The obtained P-value of 0.000 suggests a statistically significant association between the age of respondents and their COVID-19 vaccination status, as the P-value is lower than the predetermined significance level of 0.05. In a similar vein, it was observed that a significant proportion of the respondents who had gotten the COVID-19 vaccine held a bachelor's degree, accounting for 61.29% (n=19). Likewise, among the respondents who had not received the COVID-19 vaccine, a majority of them also possessed a bachelor's degree, representing 63.61% (n=257). The obtained P-value of 0.881 suggests that there is no statistically significant association between the degree of education of respondents and their COVID-19 vaccination status. This conclusion is drawn based on the fact that the P-value exceeds the predetermined level of significance of 0.05. Similarly, a significant proportion of the participants who received the COVID-19 vaccine (83.87%) were found to be unemployed, whereas an even higher percentage (98.76%) of those who did not receive the vaccine were similarly not working. The obtained P-value of 0.000 suggests a statistically significant association between the job status of respondents and their vaccination

status for COVID-19. This conclusion is drawn based on the fact that the P-value is lower than the predetermined significance level of 0.05.

Table 2

COVID-19 Vaccination Status and Socioeconomic Characteristics

Variable	COVID-19 Vaccine Status		P-value
	COVID-19 Vaccinated	Not COVID-19 Vaccinated	
Gender			
Female	10(32.26%)	202(50%)	0.007
Male	21(67.74%)	202(50%)	
Total	**31(100%)**	**404(100%)**	
Age of Respondents			
18_25	20(64.52%)	338(83.66%)	0.000
26-34	8(25.81%)	62(15.35%)	
35-42	2(6.45%)	4(0.99%)	
43-50	1(3.23%)	0(0.00%)	
Total	**31(100%)**	**404(100%)**	
Level of Education			
Bachelor Degree	19(61.29%)	257(63.61%)	0.881
Diploma	6(19.35%)	58(14.36%)	
PhD	0(0.00%)	1(0.25%)	
Secondary education	6(19.35%)	88(21.78%)	
Total	**31(100%)**	**404(100%)**	
Employment Status			
Employed	5(16.13%)	5(1.24%)	0.000
Not employed	26(83.87%)	399(98.76%)	
Total	**31(100%)**	**404(100%)**	

4.1.11 Associated Factors between Awareness of Respondents and COVID-19 Vaccination Status

Table 3 presents the findings indicating that a significant proportion of respondents who received the COVID-19 vaccine expressed strong agreement (61.30%) regarding the adequacy of information provided by television (TV) on the COVID-19 vaccine. Similarly, among respondents who had not received the COVID-19 vaccine, a majority (51.20%) also agreed that TV provides sufficient information on the COVID-19 vaccine. The obtained P-value of 0.013 suggests a statistically significant association between the dissemination of COVID-19 vaccine information on television and an individual's vaccination status. This inference is drawn based on the fact that the P-value is lower than the predetermined significance level of 0.05. Furthermore, within the group of participants who received the COVID-19 vaccine, a significant majority (54.84%) expressed strong agreement with the notion that radio stations adequately disseminate information regarding the vaccine. Similarly, among the participants who had not yet received the COVID-19 vaccine, a substantial proportion (57.43%) also agreed that radio stations provide sufficient information on the topic. The obtained P-value of 0.017 suggests a statistically significant association between the dissemination of COVID-19 vaccine information on radio stations and the vaccination status of individuals, as the P-value is lower than the predetermined significance level of 0.05. Similarly, a significant proportion of the participants who received the COVID-19 vaccine expressed a strong agreement (45.16%) regarding the adequacy of information provided by online sources on the vaccine.

Likewise, among the participants who did not receive the COVID-19 vaccine, a majority (50.50%) also agreed that online sources offer sufficient information on the vaccine. The obtained P-value of 0.161 suggests that there is no statistically significant association between the supply of COVID-19 vaccine information through online sources and the vaccination status of individuals, as the P-value exceeds the predetermined significance level of 0.05. In a similar vein, a significant proportion of the participants who received the COVID-19 vaccine expressed a strong agreement regarding the adequacy of information provided by healthcare entities regarding the vaccine, with 58.06% (n=18) endorsing this view. Furthermore, among the respondents who did not receive the COVID-19 vaccine, a majority of 50.74% (n=205) also concurred that healthcare bodies sufficiently disseminate information pertaining to the COVID-19 vaccine.

The obtained P-value of 0.002 suggests a statistically significant association between the dissemination of COVID-19 vaccine information by healthcare organizations and the vaccination status of individuals, as the P-value is lower than the predetermined significance level of 0.05. Furthermore, it was found that a significant proportion of the

participants who had received the COVID-19 vaccine expressed a strong agreement (58.06%) with the notion that government agencies have adequately provided information regarding the COVID-19 vaccine. Similarly, among the participants who had not received the COVID-19 vaccine, a considerable number (45.54%) also agreed that government agencies have provided sufficient information on the COVID-19 vaccine. The obtained P-value of 0.006 suggests a statistically significant association between the dissemination of COVID-19 vaccine information by government entities and the vaccination status of individuals, as the P-value is lower than the predetermined significance level of 0.05.

Table 3

Associated Factors between Awareness of respondents and COVID-19 Vaccination Status in Dar es Salaam region

Variable	COVID-19 Vaccine Status		P-value
	COVID-19 Vaccinated	Not COVID-19 Vaccinated	
TV provides enough information on COVID-19 vaccine			
Agree	11(35.5%)	207(51.2%)	0.013
Disagree	1(3.2%)	32(7.9%)	
Strongly Agree	19(61.3%)	158(39.1%)	
Strongly Disagree	0(0.0%)	7(1.7%)	
Total	**31(100%)**	**404(100%)**	
Radio provides enough information on COVID-19 vaccine			
Agree	13(41.94%)	232(57.43%)	0.017
Disagree	1(3.23%)	37(9.16%)	
Strongly Agree	17(54.84%)	130(32.18%)	
Strongly Disagree	0(0.0%)	5(1.24%)	
Total	**31(100%)**	**404(100%)**	
Online sources provide enough information on COVID-19 vaccine			
Agree	13(41.94%)	204(50.50%)	0.161
Disagree	4(12.90%)	79(19.55%)	
Strongly Agree	14(45.16%)	108(26.73%)	
Strongly Disagree	0(0.0%)	13(3.22%)	
Total	**31(100%)**	**404(100%)**	
Health care bodies provides enough information on COVID-19 vaccine			
Agree	11(35.48%)	205(50.74%)	0.002
Disagree	1(3.23%)	29(7.18%)	
Strongly Agree	18(58.06%)	160(39.60%)	
Strongly Disagree	1(3.23%)	10(2.48%)	
Total	**31(100%)**	**404(100%)**	
Government agencies provides enough information on COVID-19 vaccine			
Agree	12(38.71%)	184(45.54%)	0.006
Disagree	1(3.23%)	43(10.64%)	
Strongly Agree	18(58.06%)	168(41.58%)	
Strongly Disagree	0(0.00%)	9(2.23%)	
Total	**31(100%)**	**404(100%)**	

Table 3 demonstrates that among participants who were vaccinated against COVID-19, a majority of 16 (51.61%) strongly agreed that the vaccine is important. Similarly, 186 (46.04%) of those who were not vaccinated also agreed on the importance of the vaccine. This suggests that most respondents held positive views about the COVID-19 vaccine. The P-value of 0.001 indicates a statistically significant relationship between perceptions of the vaccine's importance and whether or not individuals were vaccinated, as the P-value is below the 0.05 significance level. Furthermore, 17 (54.84%) of vaccinated respondents agreed that the vaccine is safe, while 177 (43.81%) of those who were not vaccinated also agreed on its safety. The study suggests that a significant proportion of participants had a favorable view of the COVID-19 vaccine. A statistically significant relationship was found between perceptions of the vaccine's safety and whether or not individuals had been vaccinated, as indicated by a P-value of 0.001, which is below the significance level of 0.05. Among those who had received the vaccine, 54.84% strongly agreed that it was effective, while 41.83% of those who had not been vaccinated also agreed on its effectiveness. This indicates that most participants held positive views about the vaccine. The P-value of 0.000 demonstrates a statistically significant association between perceptions of the vaccine's effectiveness and vaccination status, as it is also below the 0.05 significance level

Table 4

Associated Factors between Perception of Respondents and COVID-19 Vaccinated Status

Variable	COVID-19 vaccine Status		P-value
	COVID-19 Vaccinated	Not COVID-19 Vaccinated	
COVID-19 Vaccine is important			
Agree	14(45.16%)	186(46.04%)	0.001
Disagree	1(3.23%)	99(24.50%)	
Strongly Disagree	0(0.00%)	37(9.16%)	
Strongly agree	16(51.61%)	82(20.30%)	
Total	**31(100%)**	**404(100%)**	
COVID-19 Vaccine is safe			
Agree	17(54.84%)	177(43.81%)	0.001
Disagree	3(9.68%)	141(34.90%)	
Strongly Disagree	0(0.00%)	32(7.92%)	
Strongly agree	11(35.48%)	54(13.37%)	
Total	**31(100%)**	**404(100%)**	
COVID-19 vaccine is effective			
Agree	17(54.84%)	169(41.83%)	0.000
Disagree	4(12.90%)	154(38.12%)	
Strongly Disagree	0(0.00%)	32(7.92%)	
Strongly agree	10(32.26%)	49(12.13%)	
Total	**31(100%)**	**404(100%)**	

4.2 Discussion

The research assessed various factors, as well as the awareness and perceptions of COVID-19 vaccination among youth in the Dar es Salaam region. The results showed that the majority of participants were male, accounting for 223 (51.26%) of the respondents. Only 31 (7%) of the total respondents had been vaccinated, while the remaining 404 (93%) had not. Among those who had received the COVID-19 vaccine, 24 (77%) required a second dose, and most did not experience any side effects. However, some reported side effects lasting from one day to a week, and in some cases, up to a month. Furthermore, a significant number of respondents who had not been vaccinated were not willing to get vaccinated even if the vaccine were readily available, although they believed it to be safe.

The study found that a higher percentage of males (67.74%) received the COVID-19 vaccine compared to females, while an equal number of males and females remained unvaccinated. The results indicate an association between gender and vaccination status, which is consistent with findings of Miner et al. (2023), Dzinamarira et al. (2021), and Green et al. (2021). In terms of age, the majority of vaccinated and unvaccinated respondents were between 18 and 25 years old. The findings further indicate a connection between the age of participants and their COVID-19 vaccination status. In terms of education level, the majority of both vaccinated and unvaccinated respondents had obtained a bachelor's degree. However, the data reveals no significant link between the respondents' education level and their vaccination status. The majority of both the vaccinated and non-vaccinated respondents did not have jobs when asked about their employment status. Consistent with the research by Basak et al. (2022), the study found that vaccination status is correlated with individuals' employment positions.

In examining the factors related to awareness, it was discovered both vaccinated and unvaccinated youth believe that TV shows give adequate information about the COVID-19 vaccination. This points to a link between people's vaccination status and the availability of COVID-19 vaccine information on television. When asked if radio stations provide enough information regarding COVID-19 immunization, both those who have received it and those who have not agreed. The findings reveal a link between people's vaccination status and how frequently radio stations broadcast information about the COVID-19 vaccine. Radio stations play an important role in delivering correct and timely information regarding vaccines to affect public opinion and vaccination rates.

Concerning the accessibility of COVID-19 information from online sources, a majority of both vaccinated and unvaccinated respondents expressed strong agreement and agreement, respectively, that online sources offer sufficient information on COVID-19 vaccines. The findings indicate that there is no significant relationship between the availability of COVID-19 vaccine information from online sources and whether individuals have been vaccinated against COVID-19 or not.

The study also revealed that COVID-19 -vaccinated respondents were more likely to strongly agree than non-vaccinated respondents to think that healthcare organizations provide sufficient information on the COVID-19 vaccine. COVID-19 vaccination status appears to be related to whether or not healthcare providers disclosed information about the vaccine. When asked about their perception of the adequacy of the information provided by government agencies on the COVID-19 vaccine, individuals who had already been vaccinated and those who were not were almost equally divided in their views. There seems to be a correlation between people's vaccination status against COVID-19 and the transmission of vaccine-related information by government agencies. The analyzed sample revealed a notable consensus among participants, regardless of their immunization status, about the significance of the COVID-19 vaccine. In addition, most people who were vaccinated against COVID-19 had a positive attitude.

The study examined whether there was a link between people's opinions about the safety and usefulness of the COVID-19 vaccine and whether they had been vaccinated against it. Importantly, most people who participated, regardless of whether they were vaccinated or not, found the vaccine safe and effective. This shows that the vaccine against COVID-19 was widely accepted and thought to be good in the sample that was studied which corroborates the findings by Machingaidze and Wiysonge (2021); Carcelen et al. (2022) and; Kelly et al. (2021).

V. CONCLUSIONS & RECOMMENDATIONS

The sample analysis indicated that age, gender, and work position are significant socio-demographic characteristics that influence an individual's capacity to tolerate the COVID-19 vaccine. Despite the abundance of credible sources such as government websites, medical experts, and media outlets, which all confirm the safety and efficacy of vaccines, there are those who choose to reject vaccination hence wastage. Researchers recommend decision makers continue directing endeavors focused on increasing the acceptance of COVID-19 vaccinations and minimizing the wastage of vaccines. Also, the youths are encouraged to take vaccines for the fortification of their health hence reaching the intended purpose and saving funds that would have been used in managing other health, social, and economic challenges.

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