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**Original Article**

# Level of covid-19 vaccine uptake and associated factors among adults in Kayunga police barracks. A cross-sectional study.

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## Abstract

### Background

COVID-19 pandemic has affected more than 200 million people causing loss of life and livelihood across the entire world which accelerated the development of COVID-19 vaccines. Therefore, this research investigated the level of COVID-19 vaccine uptake and factors associated among adults towards the COVID-19 vaccine in Kayunga Police Barracks.

### Methods

It was a cross-sectional study in which 100 respondents were interviewed. Multi-stage sampling was used to select respondents who were 18 years or older at the time of the visit. Quantitative data was collected and entered into Excel and analyzed using SPSS version 26. Odds ratios were used as the measure of association, with corresponding 95% confidence intervals.

### Results

A total of 100 respondents participated in this study, most, 48% (48) of the study participants were in the age category of 18 to 30 years. The majority, 56% (56) were females, more than half of the participants, 55% (55) were educated, and almost 78% (78) were employed**.** About 39.2% of adults in Kayunga Police Barracks had not taken the COVID-19 vaccine. Most, 83% (83) of the respondents didn't know the benefits of taking the COVID-19 vaccine, and 94% (94) didn't know where to find a health center that manages cases of COVID-19. Findings confirm adverse effects following immunization (AEFI), mistrust of authority, and perceived severity of COVID-19 symptoms are factors that were statistically significantly associated with adults not taking the COVID-19 vaccine.

### Conclusion

39.2%of adults in Kayunga Police Barracks had not been vaccinated against COVID-19 and factors, adverse effects following vaccination, mistrust in Authority and perceived severity of COVID-19 symptoms were the factors associated with low COVID-19 vaccine uptakes in Kayunga Police Barracks.

### Recommendation

Continuous Monitoring and Evaluation, establish a robust monitoring and evaluation system to track vaccination rates and identify any emerging challenges or barriers.

***Keywords*** *COVID-19, vaccine uptake, Kayunga police barracks.*
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## Background of the study

The historic public health crisis resulting from the Coronavirus pandemic has resulted in tremendous mortality and morbidity, as well as unprecedented economic loss and disruption to daily life across the world. (Vanelli, 2020). The coronavirus disease 2019 (COVID-19 ) pandemic that started in China continues to devastate the world and has caused over 4 million deaths, led to over 180 million cases by July 2021, and caused some of the greatest disturbances ever seen. (WHO, 2021c, Vanelli, 2020).

In Africa, as of 6th October 2020, a total of over 1.2 million cases and 26,475 deaths had been registered. (WHO, 2021a). To deal with COVID-19, countries instituted several restrictions including lockdowns, strengthened disease surveillance and contact tracing, quarantined individuals suspected of exposure to severe acute respiratory syndrome coronavirus (SARS-CoV-2), and treated and managed confirmed cases as different countries were looking for a solution in form of vaccination. (WHO, 2021a).

Globally, vaccines are one of the most reliable and cost-effective public health interventions ever implemented that are saving millions of lives from infectious diseases each year (Rochwerg et al, 2020). Long-term control of the COVID-19 pandemic hinges on the development, distribution, and uptake of vaccines. (WHO, 2021) Following the declaration of the pandemic by WHO in

March 2020, scientists and pharmaceutical companies raced against time towards the development of vaccines (Zimmer and Corum, 2020), (Cucinotta and Vanelli, 2020).

As of December 22, 2020, at least 85 vaccines were in preclinical development in animals and 63 are in clinical development in humans, of which 43 were in Phase I, 21 were in Phase II, 18 were in Phase III, and 6 had been approved for early or limited use, 2 have been approved for full use, and one vaccine had been abandoned. Pfizer-BioNTech's (BNT162b2) and Moderna's (mRNA-1273) mRNA vaccines have been approved for emergency use in the US (Zimmer and Corum, 2020).

The factors that contribute to the low uptake of the COVID-19 vaccine are varied across the entire world (Kasozi et al, 2021). Myths, rumors, and misinformation that have quickly spread online, particularly via social media might be contributing to low vaccine uptake because of too much uncertainty about the vaccines, for example about whether people have natural immunity and whether home remedies (garlic, vitamins, and rinsing noses with saline) help protect against the coronavirus. Uncertainty and rapidly changing information may have contributed to increased worry about the vaccines and their newly developed vaccines (Han et al 2020).

The World Health Organization reported the COVID-19 pandemic with its origins in Wuhan China in 2019 and since then, the disease has claimed more than 3.5 million lives of people globally (WHO, 2022). Of these, over 92,000 cases of COVID-19 had been reported among forcibly displaced people/ across 115 countries as of 01 July 2021 (WHO, 2021). Many of these deaths had been attributed to misleading information that fragmented a coordinated effort to mitigate the loss of life (WHO, 2020). In Africa, the disease continuously spread and claimed the lives of over 200,000 people, and over 800,000 cases were registered (WHO, Africa 2022). In sub–Saharan Africa, the first COVID-19 case was reported in Nigeria and the disease has rapidly spread since then to most countries in the sub-region (WHO, 2022) affecting the entire population.

Uganda registered its first case of COVID-19 on 21st March 2020 having already put in place restrictions one of which was to institutionally quarantine all persons traveling into the country from 'high risk' countries for COVID-19 transmission. (MOH, 2020). Despite that, the virus continued to overwhelm the country with over 80000 positive cases and more than 300 deaths as of May 2021 (MOH, 2020). Thus, Uganda launched its mass COVID-19 vaccination program on 10th/03/2021 thereby joining a host of countries in Africa to initiate vaccinations. According to the Ministry of Health, Uganda aimed at vaccinating at least 49.6% of its population (21,936,011) with Oxford University–AstraZeneca COVID-19 vaccine at different phases. (Bamulanzeeki, 2021).

Meanwhile, the uptake of the new vaccine remained uncertain among adults (WHO 2021). This was due to the strong anti-vaccine movement, with multiple pseudo-scientific conspiracy theories that had flooded the media reports. It is for these reasons that low COVID-19 vaccine uptake has persisted as an important challenge in the vaccination campaign against COVID-19 (WHO 2021).

Since the inception of the vaccination campaign, different groups of the population have embraced it in varying degrees. There is not yet any study that has looked at how they embraced vaccination. Therefore, this study aimed to determine the level of COVID-19 vaccine uptake and factors associated among adults with the COVID-19 vaccine in Kayunga Police Barracks.

## Methodology

### Study Design

This was a cross-sectional study design using quantitative data collection and analysis methods.

### Study Population

Both male and female adults (18 years and above) living in Kayunga Police Barracks constituted the study population. From available information, by the time of this study, the total population in Kayunga Police Barracks consisted of 100 adults (42 male officers, 33 female officers, and 25 civilians living in the police barracks).

### Sampling procedures

### Sample Size and Sampling Procedures

Since the study population (N) is just 100 adult persons living in Kayunga Police Barracks, Statisticians generally recommend that if the population is 100 or smaller than 100, it is advisable to include all the subjects in the study sample. In this study therefore, the study sample (n) included the entire population N, where N =100 = n as in table 1.

**Table 1: Sample Size (same as the adult population in Kayunga police Barracks)**

| Category | Male | Female | Total |
|---|---|---|---|
| Police officers | **42** | **33** | **75** |
| Adult civilians in Barracks | **06** | **19** | **25** |
| **Total** | **48** | **52** | **100** |

*Source: Police HR Records, 2021*

## Sampling Techniques for Quantitative Data

Since we are taking the entire population as our sample, the researcher used a census sampling procedure by taking the data from all the adult individuals (police officers and civilians) living in the barracks.

## Inclusion criteria

Adult police officers and civilians staying in Kayunga police barracks at the time of conducting this study were included in the study.

## Exclusion criteria

All adults who had consented but were absent on the day of visiting the barrack did not participate in the study.

## Study variables

### Dependent variable

The dependent variable for this study was the uptake of COVID-19 vaccination.

### Independent variables

Factors associated with COVID-19 vaccine uptake among adults in Kayunga Police Barracks.

## Data collection procedure

Data was collected using guided face-to-face interviews. A total of 100 adults participated in face-to-face interviews using a structured questionnaire. A preliminary visit was carried out to select the recruitment and mobilization team. This team comprised four people, two men and two women who knew Kayunga Police barracks very well, these were oriented about the study aim, and data collection process, and facilitated making arrangements for the interviews two days before the date of data collection. Research assistants were recruited based on the criteria of ability to read, write, and speak fluent English as well as the language widely spoken in the district. The structured questionnaires were pre-tested using 4 purposively selected individuals in the barracks. This was done to assess whether the questionnaires were easily understood by the study participants and to make necessary changes before the start of the study. Data collection was done by the principal investigator to ensure that correct data was collected from the field.

## Data management and analysis

Efforts were made by the research assistants and principal investigator to verify the completeness of the questionnaire before the respondent was left to go. At the end of the day, the questionnaires were checked by the principal investigator to minimize errors; the dataset was cleaned in preparation for data analysis. Quantitative data was entered in an Excel spreadsheet, downloaded from Excel, and exported to SPSS in 3 steps. The first step was univariate analysis, followed by cross-tabulation and testing using the Chi-square test conducted for all categorical variables to identify independent variables which may be significantly associated with the dependent variable "vaccine uptake". Lastly, all the independent variables that showed a significant association with vaccine uptake were then subjected to binary logistic regression to determine the Crude Odds Ratios (COR). Data was summarized and presented in tables and suitable graphs.

## Ethical Consideration

The study was approved by the KU ethical review board by guidelines from the Uganda National Council for Science and Technology. Information from respondents was kept with maximum confidentiality and only the research team had access to that data. Informed consent from all participants was sought before participation in the study.

## Informed consent

All the respondents who participated in this study consented.

## Results

**Table 2: Socio-demographics characteristics of the study population**

| Variable | Category | Frequency | Percent (%) |
|---|---|---|---|
| Age | 18 to 30 Years | 48 | 48 |
| | 31 to 40 Years | 25 | 25 |
| | 41 to 50 Years | 12 | 12 |
| | >50 Years | 15 | 15 |
| | **TOTAL** | **100** | **100 =** |
| Education | Not educated | 25 | 25 |
| | Educated | 75 | 75 |
| | **TOTAL** | 100 | **100** |
| Occupation | Formal occupation | 78 | 78 |
| | Informal occupation | 22 | 22 |
| | **TOTAL** | 100 | **100** |

| | | | |
|---|---|---|---|
| Sex | Male | 44 | 44 |
| | Female | 56 | 56 |
| | **TOTAL** | 100 | **100** |

*Source, primary data 2024.*



A total of 100 respondents were interviewed across the selected Police officers and adult civilians in Barracks of Kayunga Police Barracks. Most, 48% (48) of the study participants were in the age category of 18 to 30 years. The majority, 56% (56) were females, more than half of the participants, 55% (55) were educated, and almost 78% (78) were employed.

**Table 3: Level of COVID-19 vaccine uptake in Kayunga Police Barracks**

| Categories | Frequency | Percentage (%) |
|---|---|---|
| Not vaccinated | 39 | 39 |
| Vaccinated | 60 | 60 |
| **Total** | **100** | **100** |

Results in Table 3 show that overall, 39. % (39) of adults in Kayunga had not taken the COVID-19 vaccine at the time of the study and 60% (60) got immunized with the COVID-19 vaccine.

## Univariate level of analysis

**Table 4: Factors which are associated with low COVID-19 vaccine uptake among adults in Kayunga Police Barracks**

| Variables | Category | Frequency (n=100) | Percent |
|---|---|---|---|
| Adverse effects following immunization (AEFI) | Yes | 49 | 49 |
| | No | 51 | 51 |
| | **TOTAL** | **100** | **100** |
| Knowledge of the benefits of COVID-19 vaccination | Knows | 17 | 17 |
| | Don't know | 83 | 83 |
| | **TOTAL** | **100** | **100** |
| Knowledge of Health centres treating COVID-19 | Knows | 6 | 6 |
| | Don't know | 94 | 94 |
| | **TOTAL** | **100** | **100** |
| Mistrust of Authority | No trust | 37 | 37 |
| | Trust | 63 | 63 |
| | **TOTAL** | **100** | **100** |
| Perceived severity of Covid - 19 symptoms | Mild | 25 | 25 |
| | Moderate | 15 | 15 |
| | Severe | 60 | 60 |
| | **TOTAL** | **100** | **100** |
| COVID-19 vaccine Awareness | Aware | 94 | 94 |
| | Not aware | 6 | 6 |
| | **TOTAL** | **100** | **100** |
| Attitude of Health workers | Good Attitude | 59 | 59 |
| | Bad Attitude | 41 | 41 |
| | **TOTAL** | **100** | **100** |
| Perceived outcome of COVID-19 symptomatic cases | Recovered from home | 38 | 38 |
| | Recovered from hospital | 2 | 2 |
| | Died | 60 | 60 |
| | **TOTAL** | **100** | **100** |
| Time taken to reach the | <1Hr | 4 | 4 |

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| | | | |
|---|---|---|---|
| health center | 1-4Hrs | 94 | 94 |
| | >4Hrs | 2 | 2 |
| | **TOTAL** | **100** | **100** |
| Transport means | Improved means | 95 | 95 |
| | Traditional means | 5 | 5 |
| | **TOTAL** | **100** | **100** |
| Treatment provided to symptomatic cases | Traditional herbal treatment | 2 | 2 |
| | Modern medical treatment | 21 | 21 |
| | No treatment | 77 | 77 |
| | **TOTAL** | **100** | **100** |
| Availability of COVID-19 vaccine | Available | 54 | 54 |
| | Not available | 46 | 46 |
| | **TOTAL** | **100** | **100** |

Results in the table above show that close to half, 49% (49) of the respondents stated suffering or their close relatives and friends or have heard of individuals who suffered from adverse effects after taking the COVID-19 vaccine (adverse effects following Immunization). Most, 83% (83) of the respondents didn't know the benefits of taking the COVID-19 vaccine. The majority, 94% (94) of the respondents didn't know where to find a health center that manages cases of COVID-19. A substantial number 36% (36) of respondents did not trust the authority responsible for COVID-19 vaccination which is the Ministry of Health of Uganda. The majority, 60 % (60) of the respondents perceived COVID symptoms to be very severe and most, 94% (94) of the respondents were aware of different vaccines for COVID-19.

Close to half, 40% (40) of the respondents also reported health workers at their health centers having good attitudes toward clients. The majority, 59% (59) believed that COVID-19 patients were ultimately going to die. Most, 94% (94) of the respondents took between 1 to 4 hours to reach the nearest health center. Most, 94% (94) of the respondents reported using improved means of transport to the health center. The findings of this study show that the majority of the respondents (45%) reported that there was no treatment given to symptomatic cases of COVID-19 yet many of them survived. More than half, 54 (54%) of respondents reported that COVID-19 vaccines were available for them to consume.

**Table 5: Bivariate analysis for factors associated with low COVID-19 uptake among adults in Kayunga**

| **Variable (N=538)** | **Categories** | **COVID-19 Vaccine Uptake** | | **$X^2$** | **Df** | **p-value** |
|---|---|---|---|---|---|---|
| | | **Not vaccinated** | **Vaccinated** | | | |
| | | **N (%)** | **N (%)** | | | |
| Age | 18 to 30 Years | 36(36) | 64 (64) | 11 | 6 | 0.089 |
| | 31 to 40 Years | 47 (47) | 53(53) | | | |
| | 41 to 50 Years | 34(34) | 66 (66) | | | |
| | >50 Years | 45 (45) | 55(55) | | | |
| Adverse effects following immunization (AEFI) | Yes | 51 (51) | 48 (49) | 19 | 1 | **0.000*** |
| | No | 27 (27) | 72 (73) | | | |
| Knowledge of the benefits of COVID-19 vaccination | Knows | 34(34) | 66 (66) | 1 | 1 | 0.285 |
| | Don't know | 41 (41) | 59 (59) | | | |
| Education | Not educated | 38 (37) | 62 (62) | 1 | 1 | 0.468 |
| | Educated | 41 (41) | 59 (59) | | | |
| Knowledge of Health centre treating COVID-19 | Knows | 39 (39) | 61 (61) | 4 | 1 | **0.042** |
| | Don't know | 57(57) | 43(43) | | | |
| Mistrust of Authority | No trust | **89(89)** | **11 (11)** | 53 | 1 | **0.000*** |
| | Trust | 11 (11) | 89 (89) | | | |
| Occupation | Formal occupation | 52 (52) | 48(48) | 26 | 2 | **0.000*** |

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| | | | | | | |
|---|---|---|---|---|---|---|
| | Informal occupation | 54(55) | 115 (45) | | | |
| | Unemployed | 23 (23) | 77(77) | | | |
| Perceived Severity of Covid -19 | Mild | 95 (95) | 5(5) | 39 | 2 | **0.000*** |
| | Moderate | 89 (89) | 11 (11) | | | |
| | Severe | 4 (4) | 96 (96) | | | |
| COVID-19 Vaccine Awareness | Aware | 38(38) | 62(62) | 1 | 1 | 0.422 |
| | Not aware | 46(46) | 54(54) | | | |
| Sex | Male | 38 (38) | 62 (62) | 1 | 2 | 0.507 |
| | Female | 40 (40) | 60 (60) | | | |
| Attitude of Health workers | Good Attitude | 36 (36) | 63 (63) | 3 | 1 | 0.102 |
| | Bad Attitude | 43 (43) | 57 (57) | | | |
| Perceived outcome for symptomatic COVID-19 patients | Recovered from home | 99 (99) | 1(1) | 74 | 2 | **0.000*** |
| | Recovered from hospital | 36(36) | 64(64) | | | |
| | Died | 0 (0.0) | 100 (100) | | | |
| Time is taken to reach the health center. | <1Hr | 6 (40) | 9 (60) | 9 | 2 | **0.009** |
| | 1-4Hrs | 38 (38) | 62(62) | | | |
| | >4Hrs | 78(78) | 22 (22) | | | |
| Transport means | Improved means | 38 (38) | 62 (61) | 2. | 1 | 0.117 |
| | Traditional means | 54(53) | 47 (47) | | | |
| Treatment Given to COVID Patients | Traditional herbal treatment | 0 (0.0) | 100 (100) | 1. | 2 | 0.373 |
| | Modern medical treatment | 38(38) | 62(62) | | | |
| | No treatment | 40 (40) | 60 (60) | | | |
| COVID-19 vaccine Availability | Available | 37 (37) | 63 (63) | 1 | 1 | 0.263 |
| | Not available | 41 (41) | 59(59) | | | |

***Bivariate analysis for factors that might be associated with low COVID-19 vaccine uptake***
***0.000* statistically significant at p<0.05***

Results show that the chi-square test ($x^2$) of independence found a statistically significant association between independent variables adverse effects following immunization (AEFI), mistrust of authority, perceived severity of COVID-19 symptoms, and Knowledge of health centers treating COVID-19.
Perceived outcome for symptomatic COVID-19 patients and time taken to reach health center as the factors significantly associated with dependent variable COVID-19 vaccine uptake ($p \leq 0.05$).

## Multivariate level of analysis

At the multivariate level of analysis, variables that showed statistical significance at the bivariate level were subjected to binary logistic regression while controlling for confounders. Binary logistic regression was used because the dependent variable COVID-19 vaccine

uptake has only two outcomes (Yes/No). At this level of analysis, the Adjusted Odds Ratios (AOR) for the observed relationship between the independent and dependent variables were generated and were used to interpret the results of this study.

Results of multivariate analysis in Table 6 reveal that adverse effects following immunization (AEFI), (AOR = 3.944 95% CI= 2.137-7.277; P < 0.001), mistrust of authority, (AOR = 72.900 95% CI= 41.089-129.337; P < 0.001) and perceived severity of COVID-19 symptoms, (AOR = 685.314 95% CI= 243.448-1929.182; P < 0.001) are factors statistically significantly associated with COVID-19 vaccine uptake among adults living in the Kayunga Police Barracks (p < .05).

**Table 6: shows factors multivariate logistical regression for factors associated with low COVID-19 vaccine uptake in Kayunga Police Barracks.**

| Variable | Category | p-value | COR (95%CI) | AOR (95%CI) | P-value |
|---|---|---|---|---|---|
| Adverse effects following immunization (AEFI) | Yes | | | | |
| | No | **0.00*** | 2.793 (1.949-4.001) | 3.944(2.137-7.277) | **0.00*** |
| Knowledge of Health Centres treating COVID-19 | Knows | **0.042** | 2.085(2.973-1.014) | 2.973(0.176-50.104) | 0.450 |
| | Don't know | | | | |
| Mistrust of Authority | No trust | | | | |
| | Trust | **0.00*** | **73.275(41.360-129.813)** | **72.900(41.089-129.337)** | **0.00*** |
| Occupation | Formal occupation | **0.00*** | | | |
| | Informal occupation | 0.986 | 0.896(0.392-2.040) | 0.984(0.166-5.825) | 0.986 |
| | Unemployed | 0.243 | 3.672(1.591-8.478) | 2.968(0.477-18.468) | 0.243 |
| Perceived severity of COVID-19 | Mild | | | | |
| | Moderate | 0.088 | 2.608(0.870-7.819) | 2.603(0.867-7.810) | |
| | Severe | **0.00*** | **693.817(247.140-1947.809)** | **685.314(243.448-1929.182)** | **0'00*** |
| Perceived outcome for symptomatic COVID-19 patients | Recovered from home | | | | |
| | Recovered from hospital | 0.970 | 181.12(28.281-1160.009) | 2.08+34(0.000-0.000) | 0.970 |
| | Died | 0.968 | 1.67+11 (0.000-0.000) | 3.54+69(0.000-0.000) | 0.968 |
| Time is taken to reach the health centre | <1Hr | **0.09** | | | |
| | 1-4Hrs | 0.778 | 1.082(0.379-3.088) | 1.670(0.047-58.737) | 0.778 |
| | >4Hrs | 0.102 | 0.182(0.035-0.939) | 0.210(0.032-1.365) | 0.102 |

*0.00*, statistically significant/ COR (Crude Odds Ratio), AOR (Adjusted Odds Ratio)*

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## Discussion

### The level of COVID-19 vaccine uptake

About 39.2% of adults in Kayunga Police Barracks had not taken the COVID-19 vaccine. This level of vaccine uptake is below the projected minimum level of 50% level of vaccine uptake however it can greatly negatively impact the possibility of achieving herd immunity to COVID-19 in the community. (Fontanet and Cauchemez, 2020,Kadkhoda, 2021, MacIntyre et al., 2022, Anderson et al., 2020).

The finding of this study on the level of vaccine uptake indicated a variation with that identified in four other studies conducted in Mozambique, Zimbabwe, Cameroon, the United States of America, and a narrative review for Africa. The levels of vaccine uptake according to these studies were 31.2%, 18%, 15%, and 21% respectively for the respective countries and the African region. (Dula et al., 2021, Aborode et al., 2021, Kheil et al., 2022, Sallam et al., 2022). This is so because Medical Teams as an agency mandated to provide health services in all refugee Barracks in conjunction with the Office of the Prime Minister and the Ministry of Health tagged vaccination as criterion for one to receive certain services like cash assistance and general health services.

### Factors associated with low COVID-19 vaccine uptake

Findings confirm adverse effects following immunization (AEFI), mistrust of authority, and perceived severity of COVID-19 symptoms are factors that are statistically significantly associated with low COVID-19 vaccine uptake among adults living in the Kayunga Police Barracks.

According to Table 6, findings of multivariate logistic regression revealed a strong association between the occurrence of adverse effects following immunization and willingness to take the COVID-19 shot. The odds of taking the COVID-19 shot were 4 times higher among respondents who never experienced their close relatives and friends or heard of individuals who suffered any adverse effects following immunization against COVID-19 compared to their counterparts who had experienced adverse effects following COVID-19 immunization.

This implies that people who have not experienced adverse effects following immunization against COVID-19 are 4 times more likely to accept the COVID-19 shot compared to those who have experienced adverse effects following vaccination against COVID-19. This may perhaps be associated with the fact that people have trust in the Ministry of Health, the authority responsible for COVID-19 vaccination in Uganda, or the fact that people understand the benefits of COVID-19 vaccination as reflected in the findings of this study (See table 6). This finding was consistent with the findings of several scholars in Africa who also identified the occurrence of adverse effects following immunization to be a major barrier to COVID-19 vaccine uptake (Orebi et al., 2022, Organization, 2021, Kabagenyi et al., 2022).

The study also found mistrust in the health authority (Ministry of Health) to be statistically significantly associated with acceptance to take the COVID-19 shot. Results of multivariate logistic regression in Table 6 show the odds of accepting to taken the COVID-19 vaccine were 73 times higher among people who had trust in the Ministry of Health as the authority responsible for vaccination in this country as compared to their counterparts who did not have any trust in the ministry of health.

The level of trust that people have in government health programs influences their decision to take the COVID-19 shot. This trust is built over a long time following the different successful vaccination campaigns that the government has conducted among the people. A trustful relationship between government and the population is grounded in the social cognitive theory which emphasizes individual experience or actions of others and environmental factors as key influencers of behavior. (AlSaeed and Rabbani, 2021, She et al., 2021). This result was consistent with related studies in different parts of the globe which also highlight the lack of public trust in government programs as a key driver of COVID-19 vaccination uptake. (Saleska and Choi, 2021, Fisk, 2021, Li et al., 2021, Knight et al., 2022).

This implies that a low disease severity perception was a major driver of low COVID-19 vaccine uptake in the Kayunga Police Barracks. Other scholars have also found related results. Burke et al. (2021) and Wong et al. (2021) also found that low perception of the severity of COVID-19 was a major driver of low vaccine uptake. (Burke et al., 2021, Wong et al., 2021). Perceived severity as a key factor in influencing the individual choice to take the COVID-19 shot is derived from the Health Belief Model which is a common model for behavior change in health programs. (Wong et al., 2021, Wong et al., 2020). This construct asserts that when people perceive a certain disease such as COVID-19 severely affects them, they are more likely to act to prevent themselves from contracting the disease. Therefore, people who perceive COVID-19 to severely affect their health are more likely to choose to get vaccinated against COVID-19 as can be observed in the results of this study in Table 4 (Tong et al., 2020).

## Conclusion

In conclusion, the study conducted in Kayunga Police Barracks reveals a concerning trend with only 39.2% of adults having received the COVID-19 vaccine. This falls below the projected minimum level of 50% vaccine uptake, posing a significant challenge in achieving herd immunity within the community. The potential negative impact on public health is highlighted by references to studies emphasizing the importance of reaching higher vaccination rates for effective control of the virus.

## Recommendation

Intensify Community Engagement and Education: Prioritize community engagement and educational campaigns to address vaccine hesitancy and misinformation. Utilize community leaders and health workers to disseminate accurate information about the safety and benefits of COVID-19 vaccination. Emphasize the importance of achieving herd immunity for the overall well-being of the community.

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## List of Abbreviations

| | |
|---|---|
| AEFI | Advanced Effects Following Immunization |
| COVID-19 | Corona Virus Disease of 2019 |
| MTI | Medical Teams International |
| ARDS | Acute Respiratory Distress Syndrome |
| COVID-19 | Corona Virus Disease-19 |
| HCWS | Health Care Workers |
| KAP | Knowledge, Attitudes, and Practice |
| KRS | Kyangwali Refugee Barracks |
| MOH | Ministry of Health |
| OPM | Office of the Prime Minister |
| SAGE | Strategic Advisory Group of Experts |
| UNHCR | United Nations High Commission for Adults |
| VHTs | Village Health Teams |
| WHO | World Health Organization |

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## Conflict of interest

The author declares no conflict of interest.

## Author contributions

Nafuna Lilian was the principal investigator for this study

Hon. Dr. Twa-Twa Mutwalante Jeremiah. Supervised the research study.

## Data availability

Data is available upon request.

## Author Biography

Nafuna Lilian is a graduate of Master of the Public Health, School of Health Sciences, Kampala University.

Hon. Dr. Twa-Twa Mutwalante Jeremiah is a senior lecturer at the School of Health Sciences, Kampala University.

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