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Determinants of COVID-19 Vaccine Acceptance Among Medical Students at Kampala International University Western Campus, Bushenyi District, Western Uganda

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ABSTRACT

This study aimed to determine factors affecting the acceptability of COVID-19 vaccination among medical students at Kampala International University Western Campus Bushenyi district, Uganda. The study involved cross-sectional data collection using a questionnaire administered to students pursuing various medical courses. The majority of participants were males (63%), single (87%), of Anglican religion (31%), pursuing an MBChB degree (81%), and in their fourth year of study (26%). The majority (63%) were not willing to be vaccinated, 37% had a neutral view about the effectiveness of vaccines, 66% had a poor attitude towards vaccines, and all participants were 100% aware of the vaccine. The study concluded that the acceptance of COVID-19 vaccination was low, with participants lacking knowledge about vaccines and poor attitudes towards them. To address this, the Ministry of Health, the university held internal training programs, and responsible stakeholders should rectify myths about vaccines.

Keywords: COVID-19, Vaccination, Acceptability, Medical students, Ministry of Health.

INTRODUCTION

The severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) related pneumonia was discovered by the WHO on December 31, 2019, in Wuhan, China [1]. It was classified as a pandemic illness on March 26, 2020 [2], Africa the virus was reported on the continent on February 14, 2020, and in Uganda on March 21, 2020 [3]. Coronavirus disease 2019 (COVID-19) is a respiratory disorder caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) [4]. COVID-19 illness is spread by contact with an infected person's respiratory droplets and its clinical presentations range from asymptomatic cases, and moderate upper airway infection and then to severe and deadly cases with pneumonia and abrupt respiratory failure [5]. Because of no known definitive cure for the disease countries relied on a combination of non-pharmaceutical interventions (NPIs) like face coverings and physical separation, as well as policy measures like strict restrictions on public gatherings, temporary closure of institutions, and working from home (WFH) policies before the development of the COVID-19 vaccine and effective experimental treatments [6]. The process of vaccine production was then initiated with speed because immunization against COVID-19 had shown to be a key tactic for containing the COVID-19 pandemic by reducing the mortality among those infected with SARS-CoV-2 [7] and medical professionals believed that widespread use of secure and efficient vaccines will quickly bring the COVID-19 pandemic under control [3]. Governments of low- and middle-income countries failed to secure adequate doses of these vaccinations for their populations, whereas governments of high-income countries pre-ordered them. The COVAX project was started to address this requirement with the intention of swiftly obtaining and distributing doses of a licensed, effective vaccine for equitable distribution globally [8]. Uganda under the COVAX project initiated its nationwide COVID-19 immunization program on March 10, 2021, joining a

slew of African countries that have begun vaccination campaigns giving priority to healthcare workers and those at risk of severe COVID-19 and death. Uganda's Ministry of Health intends to vaccinate at least 49.6% of its population (21,936,011) with the Oxford University-AstraZeneca COVID-19 vaccine at various stages [3]. Medical students who are also part of the healthcare workers who are always on the frontline in the fight against pandemics, are thought of being a perceptive, intelligent, and medically knowledgeable populace [9]. Additionally, they stand in for the next medical experts, who are expected to react rapidly to problems involving public health [10].

The core benefit of vaccination against COVID-19 was the reduction of mortality among people infected with COVID-19 [5]. Globally more than 3.3 million people have perished as a result of the severe acute respiratory coronavirus-2 (SARS CoV-2), a new coronavirus and the cause of COVID-19 [6] and in sub-Saharan Africa, there were over 4.5 million confirmed cases and over 121,000 fatalities with 3,630 fatalities being for Uganda [11]. One of the major steps that were taken by different governments including Uganda was to vaccinate priority groups including healthcare workers where medical students are included against COVID-19 as a key factor in the reduction of COVID-19-related mortality among people that are affected [6]. Despite these efforts when the AstraZeneca COVID-19 vaccine was released in Uganda on March 10, 2021 only roughly 400,000 individuals were immunized by May 10, 2021which was not near the projected number of 49.6% of the target population to be vaccinated [6]. However, the acceptability of COVID-19 vaccination rate among medical students at Kampala International University Western Campus has not yet been established in which this study will focused on.

METHODOLOGY

Study design

A quantitative cross section study approach was conducted in order to assess the factors associated with acceptability of covid-19 vaccination among medical students at Kampala International University Western Campus Bushenyi District, Western Uganda.

Area of Study

The study was conducted at Kampala International University Western Campus Bushenyi District, Western Uganda.

Study population

The study was conducted among medical students at Kampala International University Western Campus Bushenyi District, Western Uganda.

Inclusion criteria

It included all among medical students at Kampala International University Western Campus Bushenyi District, Western Uganda that were available at the time of collecting data and willing to participate in the study.

Exclusion criteria

Those who declined to participate in the study.

Sample size determination

The sample size (n) is determined using Kish-Leslie formula for cross-sectional studies (Kish, 1965).

Where no = estimated sample size, Z= Z-score for 95% confidence interval equal to 1.96, e = Absolute error between the estimated and true population who have received their full dose is 5%.

p= assumed true population. A recent analysis indicated that the prevalence of people who haven't had their dose stands at 8,400,000 out of target group 22,000,000 (38.182%). So, P=0.3818 %, 45% received their first dose (excluded)

The percentage of those fully vaccinated 3,700,000 (16.82%) q=0.1682

Source: ministry of health vaccination updates Uganda.

Therefore, n= [(1.96)2 ×0.3818×0.1682]/ (0.05)2

=98.67 participants

For effective and sufficient data to represent the whole sample population, the researcher included more 50 respondents to make 150 participants.

Sampling procedure

A simple random and purposive sampling technique was used to choose

respondents to participate in the study, from which data was collected.

Dependent variables

Acceptability of COVID-19 vaccine

Independent variable

The independent variables include sociodemographic factors, knowledge and practices towards COVID-19.

Data Management

Data was collected using an interviewer-administered questionnaire. The researcher met with the targeted respondents that took part in the study, after obtaining permission for data collection from respondents. Each participant was required to give an informed consent before enrolling in the study. The researcher assisted the respondents in filling the questionnaires by explaining to the respondents for clarifications. The properly filled questionnaires were then collected and data was taken for analysis. The researcher used a structured questionnaire and participants were asked similar questions and from options, they picked the best alternative.

Data entry and cleaning

The data in the questionnaire was checked for completeness, cleaned and sorted to eliminate obvious inaccuracies and omissions. The data was then coded and entered into a computer.

Data analysis

The quantitative data collected was statistically analyzed and documented using Microsoft Excel and Word version 2019 which was then analyzed. The analyzed data was presented in form of tables and graphs which formed a basis for discussion and conclusions and recommendations.

The acceptability of COVID-19 vaccination was graded as low less 50% of the participants and high more or equal to 50% of the participants in relation to studies from Italy and South Carolina [12]; [13] and also Egypt [14]. The knowledge of the participants was rated as not knowledgeable with a frequency of less 80% and knowledgeable with a frequency of 80% and above participants with reference to a study in Egypt [10]

The attitude of the participants was regarded as poor with a frequency of less than 50% and good with a frequency of participants more or equal to 50% in references to studies in Egypt [10], Malta, South Carolina, Michigan and India [15]-[21].

Quality control

To ensure quality control the researcher conducted a pre-test using 10 questionnaires in the target population and data was collected before the actual study to help in reconstruction of the questionnaire where necessary.

Ethical considerations.

Participants were given information regarding the research to seek consent. Each participant's choice to participate or not was respected and data collected from participants was kept confidential.

Privacy protection.

The participants' names were not included while filling out the questionnaire to maintain privacy.

Confidentiality

It was clearly communicated that the information obtained from the participants would be kept under lock and key to only be used for research purposes.

RESULTS

Socio-demographic Characteristics of Participants (n=150)

Table 1: Socio-demographic characteristics of participants

Demographics	Frequency	%
Age		
≤25	92	61
>25	58	39
Sex		
Male	94	63
Female	56	37
Marital status		
Single	130	87
Married	19	12
Separated	1	1
Religion		
Anglican	45	30
Roman Catholic	42	28
Muslim	26	17
Pentecostal	23	15
Other	9	6
SDA	5	4
Orthodox	0	0
Year of study		
Year 1	23	15
Year 2	20	14
Year 3	33	22
Year 4	39	26
Year 5	35	23
Academic program		
Bachelor of Biomedical laboratory technology	1	1
Bachelors of Medicine and Surgery	122	81
Bachelors of Nursing	21	14
Bachelor of pharmacy	6	4

A total of 150 medical students completed the survey. The majority were males (63%), single (87%), of Anglican religion (31%), pursing MBChB degree (81%) and in their fourth year of study (26%). Meanwhile, the least (14%) number of participants were in year 2 of study. Table 1 above summarizes the socio-demographic characteristics of the participants.

Table 2: Acceptability of COVID-19 vaccination, knowledge and attitude about COVID-19 vaccines among medical students

Acceptability of the COVID-19 Vaccine	Frequency	%
Are you aware of a vaccine for COVID-19?		
Yes	150	100
No	0	0
What is your attitude towards COVID-19 vaccines?		
Good	51	34
Poor	99	66
COVID-19 vaccine may be effective in protecting me from COVID-19		
Strongly agree	19	13
Agree	50	33
Neutral	55	37
Disagree	14	9
Strongly disagree	13	9
Will you accept to get vaccinated with the approved COVID-19 vaccine?		
Yes	56	37
No	94	63

The majority of the participants (63%) were not willing to be vaccinated against COVID-19, 37% had a neutral view about the effectiveness of covid-19 vaccines, 66% had a bad attitude towards COVID-19 vaccines and all the participants 100% were aware of the COVID-19 vaccine. The details are in table 2 above.

DISCUSSION

Acceptance of COVID-19 vaccination

This study found out that the acceptance of COVID-19 vaccination was low. This can be attributed to many factors including fast development of the vaccines, no known established side effects of the vaccines, cultural and personal beliefs among others. A study with similar findings was a study in Egypt which found out the acceptance level of COVID-19 vaccination was low [10]. This similarity may also be attributed to a number of factors that consists of similarity in the study design, similar target population and also cultural beliefs among others. Studies in Italy and South Carolina found that the acceptance of COVID-19 vaccination was high [12],[13] which is centrally to the findings of this study. The discrepancies in this study can as well be attributed to a number of factors including better education about the benefits of vaccinating against COVID-19 and accessibility to vaccines with known better efficacy as well as side effects.

Knowledge of medical students about COVID-19 vaccines

This study found out that the medical students at Kampala International University Western Campus were not knowledgeable about Covid-19 vaccines. This finding can be majorly attributed to scarcity of comprehensive literature about the effectiveness of the different COVID-19 vaccines and availability of information about different vaccines for COVID-19. The only available study was found to be contradicting with this findings and that is a study in Egypt

which found out that its participants were knowledgeable about different COVID-19 vaccines [10]. This discrepancy can be attributed mostly to the availability of information about different COVID-19 vaccines to the study population among others.

Attitude of medical students about COVID-19 vaccines

Medical students at Kampala International University Western Campus had poor attitude towards COVID-19 vaccines. This finding may be strongly as a result of the short interval that has been taken to produce different COVID-19 vaccines and lack of sufficient information about different COVID-19 vaccines. Other available studies including studies from Egypt [10], Malta, South Carolina, Michigan and India [15]-[18] found out the same finding of poor attitude about different COVID -19 vaccines. This similarity in the findings can also be attributed to incomprehensive literature about different COVID-19 and the availability of information to them about the different forms of COVID-19 vaccines.

CONCLUSION

i. The acceptability of COVID-19 vaccination was low among medical students at Kampala International University Western Campus.
ii. Medical students at Kampala International University Western Campus were not knowledgeable about COVID-19 vaccines.
iii. Medical students at Kampala International University Western Campus had poor attitude about poor attitude about COVID-19 vaccines.

Recommendations

- The Ministry of Health of Uganda should sensitize to the public about the benefits of vaccinating against COVID-19 and also making the vaccines available to people to increase their acceptability of COVID-19 vaccination.
- Kampala International University Western Campus should hold Internal training programs about COVID-19 to enhance the knowledge of the students about COVID-19.
- Ministry of health of Uganda should produce a comprehensive document rectifying the different myths about different COVID-19 vaccines so as to improve the attitude of people about them.

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