

Original Research Article

An assessment of knowledge, attitudes and perceptions of Great Zimbabwe University students towards COVID-19 vaccination

Nyasha Mabika*

Department of Livestock, Wildlife and Fisheries, Great Zimbabwe University, Zimbabwe

Received: 17 July 2022

Accepted: 08 August 2022

***Correspondence:**

Dr. Nyasha Mabika,

E-mail: nyashamabika2020@yahoo.com

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ABSTRACT

Background: Vaccination is one of the most effective measures to prevent the spread of COVID-19. However, the knowledge, attitudes and perceptions of the intended population towards vaccination is important for successful implementation of the exercise. Therefore, the objective of the study was to assess the knowledge, attitudes and perceptions of Great Zimbabwe University students towards COVID.

Methods: An online survey was conducted from 01 November to 17 December 2021 by requesting students to complete a questionnaire which was set up using Google forms. The generated link was shared on student portals.

Results: The most common source of information on COVID-19 vaccination was social media. The majority of the respondents demonstrated their knowledge of how COVID-19 is transmitted and indicated that they would take the COVID-19 vaccine if it is available. Most respondents indicated that they would encourage family/ friends/relatives to get vaccinated. About 87% were worried about being infected with COVID-19 and 26.4% were hesitant to get COVID-19 vaccine. Over 68 % perceived that vaccination would stop the spread of COVID-19. About 81% feared that there was a high risk of getting infected with COVID-19 at the university.

Conclusions: The majority of university students intended to get the COVID-19 vaccine; The sources of information cited by the students should be prioritized in disseminating COVID 19 vaccination information. These findings can help the Ministry of Health plan for future efforts to increase vaccine uptake that may eventually lead to herd immunity against COVID-19.

Keywords: COVID-19, Vaccination, Great Zimbabwe University

INTRODUCTION

The novel corona virus (COVID-19) disease was first confirmed in the city of Wuhan, China on 7 January 2020. In a very short period of time, the virus had spread to 159 countries around the world including all 54 African countries.¹ As of November 6, 2020; there were 48,196,862 total cases, with 1,226,813 total deaths.² Since there were no approved vaccines and few broadly applicable proven effective treatments for COVID-19, the best method of controlling the virus was widespread adoption of preventive measures such as social distancing, mask, wearing when in public, and frequent hand washing.³ An approved COVID-19 vaccine was

perceived as one of the requirements for truly “opening up” societies around the world on a more permanent basis. As of late summer, 2020, more than 150 COVID-19 vaccines were under development worldwide with several in phase 3 clinical trials.⁴ However, even considering the unusually rapid development, most experts estimated that an approved COVID-19 vaccine would take time to be available to the general public. However, by early 2021 several vaccines had been approved against COVID-19 and distributed globally in different regions of the world.⁵ Globally, there are now more than 125 vaccine candidates, 365 vaccine trials ongoing, and 18 vaccines against COVID-19 approved by at least one country.⁶

Further to that, the World Health Organization's (WHO) promised to support every country to vaccinate at least 10% of its population by the end of September 2021, at least 40% by the end of 2021, and 70% by the middle of the following year. However, by August 2021, just over half of countries had fully vaccinated 10% of their population, less than a quarter of countries had vaccinated 40%, and only 3 countries had vaccinated 70%. Most of the public research cites concerns about the safety of vaccines against COVID-19, including the rapid pace of vaccine development, as one of the primary reasons for its low acceptance.⁷

University students make up a significant portion of the local communities in which they reside and because of that are an essential part of achieving herd immunity through vaccination.⁸ The perceptions of young adults as a subsection of the general public are important to understand because they have fewer co-morbidities and less overall concerns about their health, which leads to a fundamentally different understanding of disease risk than is seen in older adults.⁹ Previous investigations of university-aged students and vaccines have found low seasonal flu vaccine uptake and low vaccine knowledge.^{10,11} Regarding COVID-19, an Australian study found that younger age (18-29 years) were associated with low engagement in health protective behaviours.¹² On the other hand, nearly two-thirds of young adults aged 18 to 40 years in West India were unaware of the COVID-19 vaccines' availability.¹³ Therefore, unique perceptions and experiences of university students during the COVID-19 pandemic has the potential to be an interesting social phenomenon that could prove useful for institutions such as universities, governments, and public health experts.⁸

The university students were targeted for this study because; (i) many existing studies on COVID-19 vaccination focus on samples composed of various age groups or healthcare providers; therefore there is a dearth of empirical evidence to explore perceptions of university students towards COVID-19 vaccination (ii) most of them live with roommates in apartments or residence provided by the university and this challenge is made harder when roommates do not share the same perception of what is safe and what safety measures should be taken within the household as a result (iii) even though there may be some travel restriction policies, the students have the needs to travel between their homes and university, which makes them be more exposed to risk of infection.

Only few studies have been published concerning university student perceptions towards the COVID-19 vaccines.¹⁴ More so, of these few studies have mainly focused on students in the health sciences (medicine, dentistry, pharmacy, nurses) for the reason that they would be the next generation of health leaders.¹⁵ In contrast, little is known about perceptions towards COVID-19 vaccine among students in other disciplines such as arts, gender, education, commerce, social studies, agriculture and natural sciences. In addition, no studies to

date have examined the perceptions of COVID-19 vaccination among Zimbabwean university students. With this backdrop, this micro-study aimed to assess the knowledge, attitudes and perceptions of students towards COVID-19 vaccination at Great Zimbabwe University. Understanding the perceptions towards COVID-19 vaccination by university students is crucial for understanding how communities can address vaccine hesitancy and barriers to vaccination. Additionally, understanding college students' experiences during the pandemic can help colleges and universities understand how they can better support students moving forward, as the impacts of COVID-19, and the structural changes that have been set in motion because of it, are likely to continue impacting higher education.

METHODS

Study area

Great Zimbabwe University is an institution of higher learning in the city of Masvingo, Zimbabwe. It is currently situated on the Masvingo teachers' college campus seven km east of Masvingo town.

Data collection

A descriptive cross-sectional study was conducted using a structured questionnaire to solicit responses from students. Inclusion criteria for subject selection was that respondents were registered students with the university. The exclusion criteria were unregistered students and those who were not willing to participate in the study. Respondents were reached and recruited by posting the survey link on their portals. The purpose of study, confidentiality and voluntary nature of the survey were explained to potential respondents. The survey was open for data collection from 01 November to 17 December 2021. Questions required mandatory response in order to proceed to the next item of the survey. No sample size calculation method was employed because, the readiness of respondents to make time and use their data in filling through the survey was a major considering factor that determined the number of participants. The questionnaire had five sections; a) demographic profile; b) source of information; c) knowledge about COVID 19-vaccination; d) attitudes and c) perceptions.

Reliability and validity issues

In order to detect any problems that could be encountered during the study, a pilot study of 10 participants was undertaken. However, the results of the pilot study were not used in the final survey.

Data analysis

Microsoft excel was used for data cleaning, editing, sorting, and coding. Descriptive statistics (i.e., frequencies, percentages) was used to analyze the data.

RESULTS

Demographic characteristics

A total of 398 students responded to the questionnaire. Half (50.3%) of the students were above 25 years, 2.7% were in the 17-19 age group, 28.9% in the 20-22 age group and 18.1% in the 23-25 age group. Fifty one percent of the study population were males and most of the respondents (82.7%) came from urban areas. Fifty three percent of the respondents had medical aid and almost all (95%) of the respondents were Christians. School of Commerce had largest number (40.2%) of respondents followed by school of Social Sciences (22.9%), Education (15.3%), Arts, Culture and Heritage studies (11.6%) and Natural Sciences (7%). School of Law, Gender and Agriculture had least respondents. No students were recorded from Medicine and Health Sciences because the school had not yet enrolled. Almost all (96%) of respondents had at one time received vaccination in their lifetime (Table 1).

Table 1: Demographic characteristics of the study population.

Variables	Category	N (%)
Age (years)	17-19	2.7
	20-22	28.9
	23-25	18.1
	>25	50.3
Gender	Male	51
	Female	49
Place of residence	Urban	82.7
	Rural	17.3
Medical aid	Yes	53
	No	47
Religion	Christianity	95
	Traditional	2
	Islam	2
	None	1
School	Agriculture	1.6
	Natural sciences	7
	Gender	0.9
	Law	0.5
	Education	15.3
	Commerce	40.2
	Arts, Culture and Heritage Studies	11.6
	Medicine and Health Sciences	0.0
	Social Sciences	22.9
Received any vaccine in their lifetime	Yes	96
	No	4

Source of COVID-19 vaccination information

The most common source of information on COVID-19 vaccination was social media (54.5%), followed by TV

(43.5%), radio (30.9%), family and friends (30.2%) and official international health website (28.1%). Newspaper, official government website and training/educational programmes were the least preferred sources of COVID-19 information (Figure 1).

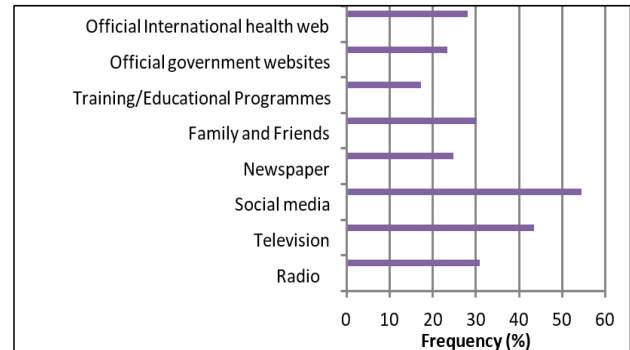


Figure 1: Sources of COVID-19 vaccination information.

Knowledge about COVID-19 vaccination

As indicated in Table 2, the majority (76.9%) of respondents knew that COVID-19 can be transmitted by touching droplets on surface or objects, while 51.3% revealed that the vaccines have some potential side effects. Over 52% knew that COVID-19 vaccination may not protect other people who do not receive the vaccine, while 25.4% indicated that COVID-19 vaccination may protect other people who do not receive vaccine. Most respondents (81.2%) demonstrated knowledge that persons with COVID-19 can transmit the virus if they do not have fever. The majority (85.9%) of the respondents indicated that an asymptomatic person (not showing symptoms) can transmit the virus.

Table 2: University students' knowledge about COVID-19 vaccination.

Questions	Yes (%)	No (%)	Not sure (%)
COVID-19 can be transmitted by touching droplets on surface or objects	76.9	8.0	15.1
Vaccines have some potential side effects	51.3	16.3	32.4
COVID-19 vaccination may protect other people who do not receive the vaccine	25.4	52.5	22.1
Do you think persons with COVID-19 can transmit the virus if they do not have fever?	81.2	14.1	4.7
Asymptomatic person can transmit virus	85.9	3.8	10.3

Attitude towards COVID-19 vaccination

As for attitude (Table 3), the majority (85.9%) of the respondents indicated that they would take the COVID-19 vaccine if it is available and would encourage family/friends/relatives to get vaccinated. Over 61% of the respondents indicated that they were not hesitant to get COVID-19 vaccine because they were not concerned about the potential side effects. However, 26.4% of the respondents were hesitant to take the vaccines because they were concerned about the potential side effects. The majority (92.2%) also indicated that they avoided crowded places and would wash their hands or sanitize them before touching face or eyes after returning home. About 83% preferred to visit the hospital for the test and treatment should they see symptoms, while 86.9% worried about being infected with COVID-19.

Table 3: University students’ attitude towards COVID-19 vaccination.

Questions	Agree (%)	Disagree (%)	Not sure (%)
I will take the COVID-19 vaccine if it is available	85.9	6.1	8
I will encourage family/friends/relatives to get vaccinated	86.4	6.1	7.5
I am hesitant to get COVID-19 vaccine because I am concerned about the potential side effects	26.4	61.6	12.1
I try to avoid over-crowded places	92.2	3.1	4.7
I wash my hands or sanitize them before touching face or eyes after returning home	91.7	3.4	4.9
I prefer to visit the hospital for the test and treatment when I see symptoms	82.9	11.8	5.3
I worry about being infected with COVID-19	86.9	9	4.1

Perception towards COVID-19 vaccination

Table 4 shows the perception of the respondents towards COVID-19 vaccination. The majority (97.2%) indicated that the vaccine should be administered free of charge in Zimbabwe, while 73.4% revealed that they would not afford the vaccine at their own expense if it was not provided free by the government. However, 26.6% of the respondents indicated that they would afford the vaccine at their own expense if the government does not offer it for free. Over 68% perceived that vaccination would stop the spread of COVID-19, while 31.7% did not believe that vaccination would stop the spread of COVID-19. A

great majority (92.5%) revealed that scary information about COVID-19 vaccination was rampant on social media. About 71% were worried about the adverse effects of the virus and almost 81% feared that there was a high risk of getting infected with COVID-19 at the university. When it comes to trust in the measures taken by the government to contain the epidemic, 70.1% were satisfied with the government policy towards COVID-19 vaccination program, while 29.9% were not satisfied by the government’s response.

Table 4: University students’ perceptions towards COVID-19 vaccination.

Questions	Yes (%)	No (%)
Do you think the vaccine should be administered free of charge in Zimbabwe?	97.2	2.8
Would you afford the vaccine at your own expense if it was not provided free by the government?	26.6	73.4
Do you think that vaccination will stop the spread of COVID-19?	68.3	31.7
Scary information about COVID-19 vaccines are rampant on social media	92.5	7.5
Are you worried about the adverse effects of the virus?	71.1	28.9
There is a high risk of getting infected with COVID-19 at the University	80.9	19.1
Are you satisfied with the government policy towards COVID-19 vaccination program?	70.1	29.9

DISCUSSION

The current study is the first one in Zimbabwe to assess the knowledge, attitudes and perceptions of COVID-19 vaccination among university students. A total of 398 students responded to the questionnaire and half of the respondents were over 25 years. The majority (82.7%) of the respondents came from the urban areas. This observation could probably indicate that the results of the study represent the knowledge, attitudes and perceptions of urban university students at Great Zimbabwe University. More so, the school of Commerce had the largest number (40.2%) of respondents and this could probably imply that most of these urban students who participated in the study are from the school of commerce.

The most common source of information was social media (54.5%), followed by television (43.5%), radio (30.9%), family and friends (30.2%). Newspapers, official government website and training/educational programmes were generally shunned by the students. This observation agrees with the findings by, who reported that medical students in Jordan, where medical students had more trust in social media sources compared to the Ministry of Health and International Organization

such as WHO.¹⁶ In Hong Kong, college students also held the highest level of trust towards health-related evidence provided on social media.¹⁷ One of the reasons cited was that politicians have appeared in these media (newspapers, official government websites) forms more often than scientists during the COVID-19 pandemic.¹⁸ Consequently, students believe that these media have been polarized and politicized by politicians and therefore tend to avoid them. However, the observation in this study contradicts the results of a similar study in Kuwait where university students trusted official government sources and information obtained from health workers.¹⁵ This meant that there was less trust in information obtained from social media or family and friends. According to these scholars, this may reflect the education level of participants and their initiative in seeking information regularly as well as due to the regular dissemination of information by the government communication channel. However, it can be argued that the level of education may not have a bearing on choosing a source of information since all these contradictory results are reported from university students. With the advent of the 4th industrial revolution, it has been noted that most college students use mobile phones on a daily basis and is therefore assumed to be the reason as to why their primary sources of information is the social media. This finding implies that there is need to develop educational and awareness programmes aimed at guiding students to reliable student-centered sources of information about COVID-19 vaccination.

The majority (76.9%) of the respondents knew that COVID-19 can be transmitted by touching droplets on surface or objects. Most of the respondents demonstrated knowledge that persons with COVID-19 can transmit the virus if they do not have fever and that an asymptomatic person (not showing symptoms) can transmit the virus. These observations may indicate the level of awareness of the respondents to COVID-19 transmission and this can assist in reducing transmission rates. Over 52% of the respondents knew that COVID-19 vaccination may not protect other people who do not receive the vaccine, while 25.4% believed that COVID-19 vaccination may protect other people who do not receive the vaccine. The latter (25.4% group) is of concern since this may fuel false sense of security and may increase the transmission rate.

In the current study, 51.3% revealed that the vaccines had some potential side effects and 32.4% were not sure. This figure is much lower than that observed in Bangladesh in which 89% of the participants assumed that the recently discovered COVID-19 vaccines could have some side-effects and this was similar to a study in the US.¹⁹ In China, it was reported that 48% of the respondents postponed vaccination before confirmation of the safety of the vaccine, which shows their doubt regarding vaccine safety.²⁰ Worryingly, the exceptionally rapid pace of vaccine development, the skepticism of certain

groups of science and health experts might elevate doubt about COVID-19 vaccine.²¹

The majority of the respondents indicated that they would take the COVID-19 vaccine if it is available and would encourage family/friends/relatives to get vaccinated (85.9% and 86.4% respectively). Compared to results in Chinese college students (76.3%) and Malta (44.2%) by respectively, our findings were higher.^{22,23} However, our findings were almost the same compared to college students in Italy whose vaccine acceptance rate was 86.1%.¹⁴ Apart from the different socio-demographic factors, possible reasons for the discrepancy between these studies include the different levels of health literacy particularly with regard to immunization.²⁴ A study in the UK also found that common concerns about COVID-19 vaccine safety and efficacy were the main determinants of vaccine acceptance.²⁵ Studies in healthcare workers in Belgium and Canada found that lack of acceptance was mostly driven by vaccine safety concerns.²⁶ All these findings suggest that public education on the efficacy and safety of the COVID-19 vaccine is important for future widespread use of the vaccine.

Over 61% of the respondents indicated that they were not hesitant to get COVID-19 vaccine because they were not concerned about the potential side effects. However, 26.4% were hesitant to get COVID-19 vaccine because they were concerned about the potential side effects. Our results were slightly lower than a survey of Italian university students which reported that 86.1% of the respondents would be willing to take the COVID-19 vaccine, but higher than a survey of Maltese university students, in which only 57.3% agreed to take the vaccine.^{14,24} However, the fact that the majority of respondents in this study were willing to take the vaccine is an important finding as far as attaining herd immunity is concerned. Further to that, most of the respondents followed the basic recommended precautionary guidelines by the WHO.² For example, 92.2% and 91.7% of the respondents indicated that they avoided crowded places and would wash their hands or sanitize them before touching face or eyes after returning home respectively. Since these students represent a particular segment of the community, they are more likely to adhere to guidelines compared to the general public.¹⁵

The majority (97.2%) indicated that the vaccine should be administered free of charge in Zimbabwe, while 73.4% revealed that they would not afford the vaccine at their own expense if it was not provided free by the government. This observation is also in agreement with a study in Bangladesh in which 95% participants reported that the vaccine should be free for people. However, our findings are inconsistent with a previous study in Indonesia, where most of the respondents were willing to pay for the COVID-19 vaccine.²⁷ Another survey in Ecuador also showed that 85% of the respondents were willing to pay for COVID-19 vaccination.²⁸ These differences from the various countries may reflect the

financial conditions of the respective countries.²⁹ When it comes to trust in the measures taken by the government to contain the epidemic, 70.1% were satisfied with the government policy towards COVID-19 vaccination program. This is contrary to a study by at Oregon State University in which all the respondents reported their frustrations at Oregon State University with a government entity on the topic of COVID-19, whether it was local, state, or federal.³⁰ The majority of the students indicated that their frustration was most focused on the response of the federal government to the pandemic. The significant distrust surrounding the government to create the right response seems to be linked to the idea that public health has become politicized. In this way, perceptions of politicians' care for politics and votes are linked to growing distrust among the students.

About a third (31.7%) of the respondents in the current study perceived that vaccination will not stop the spread of COVID-19. This negative perception is of major concern as such students are not likely to fully observe the COVID-19 safety protocols the university. This puts them and their colleagues at increased risk of acquiring the virus. This could be probably the reason why 80.9% of the students feared that there was a high risk of getting infected with COVID-19 at the university.

Limitations

The study had three main potential biases that are common in cross-sectional survey studies. Firstly, selection bias due to non-probability sampling method used in the study (i.e., convenience sampling) that could lead to non-representative sample of the target populations. This type of sampling was employed since no sampling frame (a list of the students) was available to conduct a probability-based sampling method. Secondly, a recall bias could occur if certain participants could recall certain information because of their previous exposure to COVID-19 and differently than those who were not exposed. In addition, respondents voluntarily participated, so some students could decide not to participate, while other participants did not complete the questionnaire.

CONCLUSIONS

Despite the limitations highlighted in this study, the findings provide useful insight about students' knowledge, attitude and perceptions towards COVID-19 vaccination. This information could be useful to the university authority to make decisions to stop the spread of the disease among students. However, it is important to caution readers for any attempt to generalize the findings of the study as our sample is not representative of all the universities in the country. Further research should be conducted with more universities in Zimbabwe to see how these findings fair across the country. The importance of increasing vaccination in this population cannot be understated as increased rates of vaccinated

individuals on college campuses, coupled with other preventive behaviors will likely result in lower rates of community transmission and may ultimately play an important role in achieving herd immunity and safe return to normalcy on college campuses. Administrators may take such information into account when determining if COVID-19 vaccination will be required of students, faculty and staff at their institutions. Partnering with local health officials and public health experts at the universities, local health departments and organizing logistical support, i.e., scheduling system for students, may be important next step for administrators as they develop formal vaccinations plans.

ACKNOWLEDGMENTS

Author would like to thank the Great Zimbabwe University Registrar, Mrs. S. Gwatidzo for granting us the permission to carry out this study. Prof. Chinyoka is acknowledged for her invaluable tips and assistance during the preparation of this manuscript. I am grateful to Mr. Washaya from the IT Department who assisted in the administration of the questionnaire to the students.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: The study was approved by the institutional ethics committee

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Cite this article as: Mabika N. An assessment of knowledge, attitudes and perceptions of Great Zimbabwe University students towards COVID-19 vaccination. *Int J Sci Rep* 2022;8(10):284-90.