

FACTORS INFLUENCING THE UPTAKE OF THE COVID-19 VACCINE AMONG NURSING STUDENTS AT BISHOP STUART UNIVERSITY. A CROSS-SECTIONAL STUDY.

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Abstract

Background

Coronavirus disease (COVID-19) is a highly contagious respiratory disease caused by a newly discovered coronavirus. The government of Uganda indicated a low uptake of the COVID-19 vaccine in the country, this aimed at assessing the factors influencing the uptake of the COVID-19 vaccine among nursing students at BSU.

Methods

A cross-sectional study was conducted using quantitative data collection methods, enrolling 139 participants who were selected using a simple random sampling method. Self-administered questionnaires were used to collect data which were checked for completeness, cleaned, and entered into SPSS for further analysis. Data analysis was conducted using descriptive statistics and a chi-square test to show the association between variables.

Results

Of 138 participants, the majority (36.0%) were aged between 21-23 females (64.0%) who were single (72.7%) and Anglicans (48.2%). Most of them were BNS students (61.2%) in their first year (36.7%) living in urban areas (74.1%) and were unemployed (65.5%). Bivariate analysis indicated that sex (p-value 0.021), program of study (p-value 0.031), desire to protect self, desire to protect friends and family, desire to travel freely within and abroad, compulsory in the workplace, concern about the side effects of the vaccine, myths, and conspiracy plan to wait and take it later, a program of study, level of education and prevalence were all significant variables.

Conclusion

Generally, the findings highlighted a high uptake of COVID-19 vaccination among nursing students at BSU and also general good knowledge of nursing students towards COVID-19 vaccination.

Recommendations

The government through the Ministry of Health should also expand its mass COVID-19 immunization campaign to reach local areas. Immunization services should also be incorporated into the health care package given as part of outpatient services in government health facilities.

Responsible stakeholders in curriculum design should formulate topics teaching about the benefits of immunization against COVID-19

Keywords: Coronavirus, COVID-19 vaccine, Bishop Stuart University

Submitted: 2023-12-02 Accepted: 2024-03-07

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Background of the study

In Uganda, just 22.6% of the population has completed all the COVID-19 vaccine dosages, which is less than the Ministry of Health's aim of 70% by the middle of 2022. (Multilateral Leaders Task Force on COVID-19). To preserve proper operating practices and, most crucially, immunization for all teachers and students, it was necessary, according to Uganda's Ministry of Health, to open the economy, including the country's educational institutions. However, there has been a low uptake of the COVID-19 vaccination in Uganda's higher educational institutions, including among medical students (Kanyike et al., 2021).

Despite this low uptake of the COVID-19 vaccine, few studies have been done regarding the factors influencing the uptake of the COVID-19 vaccine among students in higher intuitions of learning. A study done on the Acceptance of the COVID-19 vaccine in 10 medical schools in Uganda indicated low uptake of the COVID-19 vaccine among the students (Kanyike et al., 2021). At Bishop Stuart University there is no documented study on factors affecting the uptake of COVID-19 among nursing students, thus, this study aimed to assess the factors influencing the uptake of the COVID-19 vaccine among nursing students at Bishop Stuart.

Methodology

The methodology described is similar to be one published by Anyjukire, Rogers & Andrew, Natwijuka. (2024).

Study Design

The study was cross-sectional in design and used quantitative data collection techniques. This design was chosen since it is quick and ensures that the data collection process is uninterrupted.

Study setting

The study was carried out at Bishop Stuart University, which is situated in Kamukuzi Division, Mbarara City. The Christian University Bishop Stuart University's Ruharo campus offers a variety of programs, including bachelor's degrees in nursing science, nursing completion, nursing science diplomas, and nursing extension diplomas. BSU has a maximum enrollment of 250 students each academic year. Ruharo Mission Hospital and Mbarara Regional Referral Hospital are the two locations where nursing students at Bishop Stuart University can get the COVID-19 vaccine.

Study Population

The study was conducted among nursing students of Bishop Stuart University Ruharo campus and recruited students doing the programs of BNS, BNC, DNE, and DNS in all years of study.

Sample Size

The sample size was calculated using Taro Yamane's (1970) formula which states that

$$n = \frac{N}{1 + N(e)^2}$$

n= sample population

N=Total population/target population (214)

e= Desired margin of error (0.05)2

Thus
$$\frac{214}{1 + 214 (0.05)^2}$$

= 139 Respondents were selected for the study.

Selection Criteria

Inclusion Criteria

The study included the university nursing students of Bishop Stuart University during the time of study who consented to participate.

Exclusion Criteria

Nursing students who did not consent to take part in the research study and those who were absent at the time of data collection.

Sampling Procedure

A simple random sampling method was used to choose participants, the researcher chummed papers of the same size, color, and shape into a box, and participants who met the inclusion criteria were allowed to pick papers and those who picked yes were considered for the study until when the required sample was reached.

Data Collection Instrument

A semi-structured questionnaire which was developed based on the literature review was used to collect data. The questionnaire consisted of three sections A, B, and C where section A contained the social demographic characteristics of the participant, section B contained individual factors for the COVID-19 vaccine Uptake, and C contained knowledge of nursing students towards COVID-19 vaccination.

Validity of the Instrument

The study instrument was validated by checking for clarity, consistency, and coherence with the conceptual framework and objectives of the study and the statement of the problem by the research supervisor. The content validity index (CVI) was used in addition to the researchers' assessment. That is, the total number of valid items is divided by the total number of items.

According to Kothari (2011), the research instrument is considered valid if the CVI is above 0.60.

Reliability of the Research Instrument

To assess the usefulness and accuracy of the tool, the questionnaire was pretested on 10 research participants. Before beginning the real data collection, the tool underwent any necessary adjustments.

Data Collection Procedure

The approval letter was obtained from the head of the Department of Nursing Science at Bishop Stuart University for authorization. The purpose of the study was explained to the target group, and those who qualified for the study were individually interviewed using the self-administered questionnaire which they would fill out within 3 days. The questionnaires were then collected and kept by the researcher.

Data management

After data collection, the questionnaires were kept safely and properly for privacy and confidentiality purposes. The questionnaires were kept in a locked box with a key and only the researcher was allowed to access them. No names were put on the questionnaires.

Data Analysis

Data was entered into Excel and then exported to SPSS, coded and categorized into useful and relevant data, and exported for analysis. Data collected from questionnaires were entered and analyzed using a statistical package for social scientists (SPSS). Then tables,

frequency, distribution, percentages, and graphs will be used where necessary to present results.

Ethical Considerations

An approval letter was obtained from the head of the Department at Bishop Stuart University. Informed consent was obtained from willing Nursing students by signing the written consent first, the aims objectives, and benefits of the study were explained to the respondents before filling out the questionnaire. Participants were free to withdraw their participation at any time during data collection. Confidentiality was ensured and respected throughout the study.

Results

The majority (36.0%) of the 138 participants who completed the surveys were between the ages of 21 and 23. The research study had a higher percentage of female participants (64.0%) than male participants (36.0%). The majority of participants (72.7%) were single. 48.2%, a significant portion, were Anglicans. BNS students made up the majority of the participants (61.2%). The majority (36.7%) were beginning their first year of study. According to Table 1 below, most of the participants (74.1%) resided in cities and the majority (65.5%) were unemployed.

Table1 : Social demographic characteristics of the participants.

| VARIABLE | CATEGORY | N (%) |
|----------------|----------------------|------------------|
| Age | (18-20) years | 17(12.2) |
| | (21-23) years | 50(36.0) |
| | (24-26) years | 36(25.9) |
| | (27 and above) years | 36(25.9) |
| Sex | Male | 50(36.0) |
| | Female | 89(64.0) |
| Marital status | Single | 101(72.7) |
| | Married | 36(25.9) |
| | Separated | 2(1.4) |
| Religion | Anglican | 67(48.2) |
| | SDA | 5(3.6) |
| | roman catholic | 40(28.8) |
| | Muslim | 9(6.5) |
| | Pentecostal | 18(12.9) |

| | | |
|-------------------|-------------------|------------------|
| Program of study | DNS | 6(4.3) |
| | DNE | 10(7.2) |
| | BNS | 85(61.2) |
| | BNC | 38(27.3) |
| Year of Study | Year 1 | 51(36.7) |
| | Year 2 | 28(20.1) |
| | Year 3 | 41(29.5) |
| | Year 4 | 19(13.7) |
| Area of residence | Urban | 103(74.1) |
| | Rural | 36(25.9) |
| Employment status | Employed | 48(34.5) |
| | Unemployed | 91(65.5) |

Uptake And Factors Influencing the Uptake of the COVID-19 vaccine.

77.0% of the participants had received a COVID-19 vaccination, compared to 33.0% who had not. The desire to protect oneself (71.2%), the desire to protect friends and family (66.9%), the desire to travel freely within and abroad (51.1%), and compulsory in the workplace (11.5%) were reported by those who received the COVID-19 vaccine. Those who did not receive the COVID-19 vaccine cited the following reasons as barriers to vaccination: concern about

the vaccine's side effects (18.7%), concern about its safety (15.8%), plan to wait and take it later (10.1%), lack of trust in the institutions that produce the vaccines (10.1%), and myths and conspiracy about the vaccines (15.1%).

Relationship Between The COVID-19 vaccine Uptake and Social Demographic Variables.

Results of the study indicated significant relationships between sex $\chi^2(df=1)=5.353$, p value=0.021, a program of study $\chi^2(df=2)=5.233$, p-value 0.031 with the prevalence of COVID-19 vaccination uptake.

Table: Showing uptake and the factors influencing the uptake of the COVID-19 vaccine.

| VARIABLE | OPTIONS | N(%) |
|---|---|------------------|
| Vaccination uptake | Yes | 107(77.0) |
| | No | 32(23.0) |
| Factors for accepting to be vaccinated | desire to protect self | 99(71.2) |
| | desire to protect friends and family | 93(66.9) |
| | desire to travel freely within and abroad | 71(51.1) |
| | compulsory in the workplace. | 16(11.5) |
| Factors for not accepting to be vaccinated. | concern about the side effects of the vaccine | 26(18.7) |
| | concern about the safety of the vaccine | 22(15.8) |
| | plan to wait and take it later | 14(10.1) |
| | myths and conspiracy about the vaccine. | 21(15.1) |

Table2: Showing the relationship between prevalence and social demographic variables.

| Variable | Category | Are You Vaccinated Against COVID-19? | | Chi-Square Value | Df | P-Value |
|-------------------|----------------------|--------------------------------------|----------|------------------|----|--------------|
| | | Yes | No | | | |
| Age | (18-20) Years | 13(12.1) | 4(12.5) | 0.733 | 3 | 0.866 |
| | (21-23) Years | 40(37.4) | 10(31.2) | | | |
| | (24-26) Years | 26(24.3) | 10(31.2) | | | |
| | (27 And Above) Years | 28(26.2) | 8(25.0) | | | |
| Sex | Male | 44(41.1) | 6(18.8) | 5.353 | 1 | 0.021 |
| Marital status | Female | 63(58.9) | 26(29.2) | 1.113 | 2 | 0.573 |
| | Single | 77(72.0) | 24(75.0) | | | |
| | Married | 29(27.1) | 7(21.9) | | | |
| Religion | Separated | 1(0.9) | 1(3.1) | 4.556 | 4 | 0.336 |
| | Anglican | 55(51.4) | 12(37.5) | | | |
| | SDA | 5(4.7) | 0(0.0) | | | |
| | Catholic | 29(27.1) | 11(34.4) | | | |
| Program of study | Muslim | 6(5.6) | 3(9.4) | 5.233 | 2 | 0.031 |
| | Pentecostal | 12(11.2) | 6(18.8) | | | |
| | DNS | 4(3.7) | 2(6.2) | | | |
| Year of Study | DNE | 7(6.5) | 3(9.4) | 1.923 | 3 | 0.589 |
| | BNS | 69(64.5) | 16(50.0) | | | |
| | BNC | 27(25.2) | 11(34.4) | | | |
| | Year 1 | 36(33.6) | 15(46.9) | | | |
| | Year 2 | 23(21.5) | 5(15.6) | | | |
| Area of residence | Year 3 | 33(30.8) | 8(25.0) | 2.915 | 1 | 0.088 |
| | Year 4 | 15(14.0) | 4(12.5) | | | |
| | Urban | 83(77.6) | 20(62.5) | | | |
| | Rural | 24(22.4) | 12(37.5) | | | |
| Employment status | Employed | 35(32.7) | 13(40.6) | 0.683 | 1 | 0.409 |
| | Unemployed | 72(67.3) | 19(59.4) | | | |

Relationship Between Uptake and Factors Influencing The COVID-19 vaccine Uptake.

The results of the study indicated significant relationships between the desire to protect self $\chi^2(df=1)=102.886$ p

value=0.000, the desire to protect friends and family $\chi^2(df=1)=76.376$ p-value 0.000, the desire to travel freely within and abroad $\chi^2(df=1)=43.404$ p value=0.000, compulsory in the workplace $\chi^2(df=1)=5.407$ p value=0.002 with factors influencing The COVID-19 vaccine uptake.

Also, there were significant relationships between concern about the side effects of the vaccine $\chi^2(df=1)=106.941$ p value=0.000, concern about the safety of the vaccine $\chi^2(df=1)=87.395$ p value=0.000, plan to wait, and take it

later $\chi^2(df=1)=52.056$ p value=0.000, myths and conspiracy about the vaccine $\chi^2(df=1)=82.715$ p value=0.000 with the prevalence of COVID-19 vaccination uptake for those who were not vaccinated against COVID-19

Table 3: Showing the relationship between Uptake and factors influencing the COVID-19 vaccine uptake.

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| Variable | Options | are you vaccinated against COVID-19? | | Chi-square value | Df | p-value |
|---|---|--------------------------------------|----------|------------------|----|---------|
| | | Yes | No | | | |
| Factors For Accepting To Be Vaccinated | Desire To Protect Self | 99(92.5) | 0(0.0) | 102.886 | 1 | 0.000 |
| | Desire To Protect Friends And Family | 92(86.0) | 1(3.1) | 76.376 | 1 | 0.000 |
| | Desire To Travel Freely Within And Abroad | 71(66.6) | 0(0.0) | 43.404 | 1 | 0.000 |
| | Compulsory In The Work Place. | 16(15.0) | 0(0.0) | 5.407 | 1 | 0.002 |
| Factors For Not Accepting To Be Vaccinated. | Concern About The Side Effects Of The Vaccine | 0(0.0) | 26(81.2) | 106.941 | 1 | 0.000 |
| | Concern About The Safety Of The Vaccine | 0(0.0) | 22(68.8) | 87.395 | 1 | 0.000 |
| | Plan To Wait And Take It Later | 0(0.0) | 14(43.8) | 52.056 | 1 | 0.000 |
| | Myths And Conspiracy About The Vaccine. | 0(0.0) | 21(65.5) | 82.715 | 1 | 0.000 |

DISCUSSIONS.

The COVID-19 vaccine Uptake

Participants in this study who had already gotten the COVID-19 vaccination outnumbered those who had not, and the majority of them were 25 years of age or younger. Because the participants were nursing students, most of them had already received the COVID-19 vaccination and were aware of its advantages and hazards. Since more participants had received vaccinations than the typical number, the findings of this study were consistent with those of a Canadian university study in which the majority of participants were younger than 25 and willing to receive the COVID-19 vaccine (Madalein et al., 2021).

The study's findings also indicated that females received more COVID-19 vaccinations than males. This is because the majority of the study's participants were female and generally fell within the 25 and under age range. These findings contrast with those of a study on the likelihood of COVID-19 vaccination among subgroups in the US, in which males were more likely than females to say they were likely to get vaccinated (Szilagyi et al., 2021).

Factors influencing the uptake of COVID-19 vaccination.

Factors for being vaccinated.

The uptake of the COVID-19 vaccine was found to be strongly correlated with a desire to protect oneself. This was attributed to the fact that many individuals perished from COVID-19 during the pandemic's onset; hence, the majority of participants never desired to contract the disease themselves. This was consistent with a different study on the factors influencing the uptake of the COVID-19 vaccine that was conducted among community members in Hong Kong. In that study, the majority of the participants had already received at least one dose of the COVID-19 vaccine, with a significant number of them having received two doses.

Most participants had their COVID-19 vaccinations out of a desire to protect their family and friends as well. The participants, who were one of the groups at risk of contracting COVID-19, agreed to get immunized against it to protect their relatives and friends because COVID-19 was easily transmitted from person to person. The findings were in line with a study conducted among community members in Hong Kong on the factors influencing the uptake of the COVID-19 vaccine, in which

most participants had received at least one dose of the COVID-19 vaccine and a significant number had received two doses, with the protection of friends and family being one of the most important factors that influenced them to do so.

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The government required that everyone show a vaccination certificate before getting into a taxi, thus some participants who wanted to travel freely both domestically and internationally chose to get vaccinated against COVID-19. This allowed them to travel without interruption. However, the number of participants in this study was slightly less than that of a similar study conducted among younger women in rural Australia, where the researcher discovered that two-thirds of respondents who intended to travel freely and safely throughout Australia thought getting the COVID-19 vaccine would be of paramount importance (Carter et al., 2021).

Factors For Vaccine Hesitance/ Not Vaccinated.

The results of the study indicated that a significant portion of the participants who were not vaccinated against COVID-19 had concerns about the side effects of the vaccine. This was because of the reported side effects the people who were already vaccinated against COVID-19 like pain at the injection site, fatiguability, headache, muscle pain, and many others. These results were in line with those of a cross-sectional study done on Perceptions and experiences of The COVID-19 vaccines' side effects among healthcare workers at an Egyptian University Hospital where most participants were worried about thrombotic side effects of the vaccines like AstraZeneca (Orebi et al., 2022).

Another significant majority had plans of first waiting and then taking the COVID-19 vaccine. This was because most of them wanted to first observe for at least a year to see what would happen to those who took the vaccine. These results were in line with those of the survey done by Seraphina, 2021 on People Who Still Want to 'Wait and See' Before Getting the COVID-19 vaccine where a significant portion of the public wants to take a "wait and see" approach—meaning they'd like to "wait until [the COVID-19 vaccine] has been available for a while to see how it is working for other people" before getting vaccinated themselves.

Myths and conspiracy theories about The COVID-19 vaccine were another reported factor by the participants. These results were in line with those of the study done on Conspiracy theories and misinformation about The COVID-19 vaccine in Nigeria where the leading claim was that COVID-19 was not real, and politicians took advantage of the situation and misused funds. People believed certain claims based on distrust of the government,

their understanding of Christian scripture, or their lack of personal experience with COVID-19 (Wonodi et al., 2022)

Strength and Limitations.

Participants had equal chances of participation hence no biased information. Sampled participants were representative of the study population. Quantitative research methods were employed, and data were analyzed using appropriate statistical tests to minimize errors.

Conclusion

Generally, this study's findings indicated that there is a high uptake of COVID-19 vaccination among nursing students at Bishop Stuart University and also generally good knowledge of nursing students towards COVID-19 vaccination. This is so vital since nursing students are future health workers who will be able to recommend that people take up the vaccination.

Recommendations

To The Government

The government through the Ministry of Health should also expand its mass COVID-19 immunization campaign to reach local areas. Immunization services should also be incorporated into the health care package given as part of outpatient services in government health facilities.

To Nursing Research

Because this study employed a cross-sectional study design and used quantitative measures, I recommend future researchers apply other study designs on nursing students to determine the factors influencing their uptake of COVID-19 vaccination.

To Nursing Education

The study results highlighted some gaps and some factors influencing the uptake of the COVID-19 vaccine, I, therefore, recommend that responsible stakeholders in curriculum design should formulate topics teaching about the benefits of immunization against COVID-19.

Acknowledgment

I humbly thank the Almighty God for the blessings, protection, guidance, and knowledge He has given me since the first day of this journey.

I want to sincerely thank my Mum and Aunt for always being there for me. May God continue to richly bless them.

Last, I want to express my sincere gratitude to my mentor, MR Andrew, who has tirelessly worked to mentor me during this research journey.

Source of funding

Page | 8 The study was not funded.

Conflict of interest


There was no conflict of interest.

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