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Original Research

TO TAKE OR NOT TO TAKE: DETERMINANTS OF STUDENT'S PREPAREDNESS TO TAKE COVID-19 JABS IN GHANA

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ABSTRACT
The decision to take Covid-19 jabs is a critical concern in the midst of the pandemic. The study examined the determinants of students' preparedness to get vaccinated. The quantitative approach guided the explanatory research design to obtain data from 230 University of Cape Coast students who were randomly selected for the study. Although students have knowledge about the vaccines via television and radio stations, the study concluded that a larger proportion of them have not taken the jab. The overarching reason was the side effects of taking the vaccine. Students shared similar attitudes toward taking the Covid-19 vaccine regardless of their socio-demographic characteristics and differences. The study depicted that taking the jab was based on fair distribution of vaccines across region and preference for local medication. The study recommended that the Ghana Health Service should mount more vaccine centres closer to students' residents to promote easy accessibility.

Keywords: Covid-19, Vaccination, Attitudes, Socio-cultural, Determinants
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1.0 INTRODUCTION

It is a common knowledge that the coronavirus (Covid-19) infection has affected many countries across the globe (World Health Organization [WHO], 2020). The coronavirus transformed from a local outbreak into a global pandemic with many people suddenly living in quarantine (Cohen & Kupferschmidt, 2020). As a result, nations were compelled to employ non-pharmaceutical interventions (NPIs) to slow down the spread of the virus (WHO, 2020). These interventions included the use of face masks, social separation, lockdowns, closure of borders and hand-sanitisation (Ilesanmi, Oguntoye & Afolabi, 2020; Ilesanmi, Ariyo & Afolabi, 2020). But the most viable option that limited the spread of Covid-19 was to rely on medical technology such as vaccines (Nicola, Alsafi, Sohrabi, Kerwan, Al-Jabir, Iosifidis & Agha, 2020).

Vaccination has reduced the prevalence of fatal infectious diseases like polio, rabies, measles, malaria, Ebola and yellow fever (Chukwuocha, Okorie, Iwuoha, Ibe, Dozie & Nwoke, 2018; Doherty, Buchy, Standaert, Giaquinto & Prado-Cohrs, 2016; Rao, Schreiber & Lee, 2017). For instance, manufacturing malaria vaccine aided the fight against malaria in Nigeria and Ghana (Ojakaa, Ofware, Machira, Yamo, Collymore, Ba-Nguz & Bingham, 2011). Similarly, the invention of Ebolavirus disease (EVD) vaccines has decreased the spread of the EVD (Ojakaa et al., 2011; Huo, Shi, Li, Lai, Deng, Xu, Chen, Wei, Samba & Liang, 2016). It can be deduced that production of vaccines has been the solution since they are often perceived as effective, safe and less expensive during pandemics; hence the need to develop Covid-19 vaccines.

The preceding studies imply that countries hit by pandemics and are without vaccines go through challenges. These challenges may escalate especially in underdeveloped nations where health facilities, food, nutrition, housing and other social amenities are limited (Huo et al., 2016). According to Ogboghodo, Omuemu, Odijie and Odaman (2017), the vaccine preventable diseases (VPDs) have reduced because of vaccination. In addition, vaccination has lowered the cost of healthcare of patients and the healthcare system (Ogboghodo et al., 2017). The fact that VPDs have steadily decreased due to the invention of vaccines confirms its significant influence on peoples' lives. In effect, VPDs which were lethal to the health of mothers and children under the age of 59 months are also waning.

Ghana, with a population of about 30 million, began to witness a sudden rise of Covid-19 cases in May 2020 (WHO, 2020). The country was subsequently characterised with the highest incidence rate of Covid-19 infection in West Africa (Worldometer, 2021). Ghana reported 160,819 confirmed cases and 1,445 deaths as at 21st March, 2022 (WHO, 2022). Following this development, the government instituted lockdown measures in major parts of the country. In furtherance, the Ministry of Health in collaboration with the Ghana Health Service distributed Astra Zeneca and Johnson and Johnson vaccines to the populace in March and August 2021 respectively. Currently, a total of 13,800,000 vaccine doses have been administered with 4,870,000 Ghanaians fully vaccinated (WHO, 2022). Thus, 15.7 percent of the population have been fully vaccinated. Globally, 11billion doses have been administered with 4.5billion fully vaccinated. Thus, 57.7 percent of the population have been fully vaccinated (WHO, 2022).

Coming to terms with the impact Covid-19 has on the lives of Ghanaians is one thing to deal with. But the biggest puzzle in all these is the real time decision to go through with the vaccination process, a phase which has become an enigma to many. Since the government of Ghana spent money to secure Covid-19 vaccines, it is necessary to explore whether citizens were prepared to take them. The study generates new understanding of the behaviour of Ghanaians with respect to their preparedness to take the jabs in future pandemics. Moreover, it serves as a benchmark for which health experts and social researchers can observe, understand, record and measure the social behaviour of people in pandemic epochs; provides the baseline information on the factors that inform the decision to take a jab or not. Suffice it to say, the study provides support services to Ghanaian students who are perturbed about taking jabs especially in the era of pandemics. The study is also relevant to meeting the Sustainable Development Goal 3 which seeks to make health care universal and vaccination effective by 2030.

1.1 Purpose of the Study

The study explored the determinants of student's preparedness to take or not to take the Covid-19 jab among students in the University of Cape Coast (UCC). Specifically, it sought to:

1. Explore students' level of knowledge towards Covid-19 jabs.
2. Explore the attitudes and beliefs of students that influence their decision to take the Covid-19 jabs.
3. Examine the socio-cultural factors that influence people to take the Covid-19 jabs.

2.0 THEORETICAL FRAMEWORK

The study is grounded by the knowledge-attitude-behaviour model also known as the social cognition model propounded by Albert Bandura in 1986. The model opines that knowledge is vital and influences behavioural differences. In other words, knowledge is acquired through learning (Liu, Liu, Wang, An & Jia, 2016). According to their model, health-related behaviour may be divided into three phases. That is, acquiring knowledge, belief and behaviour formation. There is often a positive relationship between one's knowledge, attitude and behaviour (Liu et al., 2016). To begin with, people are likely to put up an attitude when they have knowledge about a situation. Attitude is also linked with behaviour. Consequently, a change in attitude will likely lead to a change in behaviour. Relating the theory to the study, it can be argued that knowledge acquired on Covid-19 vaccines might affect beliefs and attitudes toward taking the jab, which can ultimately influence their behaviour.

3.0 METHODOLOGY

Guided by the quantitative approach, the study utilized an explanatory research design. The study population comprised both male and female students from the University of Cape Coast, Ghana. The simple random sampling technique (web/online survey-listed based sampling

frame) was employed to select 230 students who responded to questions. Copies of questionnaire were used for data collection. Data gathered from questionnaire were compiled, sorted, edited, classified and coded into the Statistical Product for Service Solution (SPSS) software version 21.0. The data were analysed using descriptive and inferential statistics. Specifically, the knowledge levels of students on Covid-19 vaccines were analysed descriptively with the use of graphs and tables. The data gathered from respondents on their beliefs and attitudes as well as socio-cultural factors of taking the vaccines were analysed using independent samples-T-Test and logistic regression model.

4.0 RESULTS AND DISCUSSION

4.1 Background Characteristics of Students

The socio-demographic characteristics of 230 students covered their sex, age, marital status, programme of study, religious denomination and ethnic background. Their socio-demographic characteristics are captured in Table 1.

Table 1: Stuents' Socio-Demographic Characteristics

Characteristics	Frequency (n=230)	Percent
Sex		
Male	129	56.1
Female	101	43.9
Age		
17-21yrs	79	34.3
22-26yrs	138	60.0
27-31yrs	12	5.2
32-36yrs	1	4
Marital Status		
Single	202	87.8
Married	15	6.5
Separated	4	1.7
Cohabiting	9	3.9
Programme of Study		
College of Humanities and Legal Studies	92	40.0
College of Education Studies	70	30.4
College of Distance Education	3	1.3
College of Health and Allied Sciences	25	10.9
College of Agriculture and Natural Sciences	40	17.4
Residence		
Rural	105	45.7
Urban	125	54.3
Religion		
Christian	174	75.7
Moslem	46	20.0
Traditional	7	3.0
Others	3	1.3
Ethnic Background		
Akan	108	47.0
Ga	44	19.1
Ewe	34	14.8
Dagomba	20	8.7
Guan	8	3.5
Others	16	7.0

Source: Field work (2021)

Subject to the sex of students, 129(56.1%) and 101(43.9%) were males and females respectively which was an indication that a greater proportion of the study participants were males. As far as marital status was concerned, an overwhelming majority of students (87.8%) were single vis-à-vis their ages where the majority (60%) fell below 26 years with an average age of 23 years. It has been spotted that the place of residence and religious beliefs of people could influence their decisions to get vaccinated. It was therefore, imperative to ascertain data on their location at home and religious denomination. In response to this, 45.7 percent of the students came from rural areas while 54.3 percent of them stayed in urban areas. A closer look at the findings depicts that a little above three-fourth of the sampled students were Christians whereas a little below one-fourth were Muslims. The socio-demographic dynamics could be placed within the spectrum of ethnic lines. From an ascending order, 34(14.8%) and 44(19.1%) students were Gas and Ewes respectively, followed by 108(47%) students who were Akans. It can therefore, be deduced that most of the students were Akans.

4.2 Students' Knowledge on Covid-19 Vaccine

The study elicited data from students on whether they have heard about Covid-19 vaccines. The rationale for this objective was to find out from respondents whether their knowledge level persuaded them to get vaccinated. From their responses, almost all the sampled students [221(96.1%)] have heard of the Covid-19 vaccines. This is displayed in Figure 1.

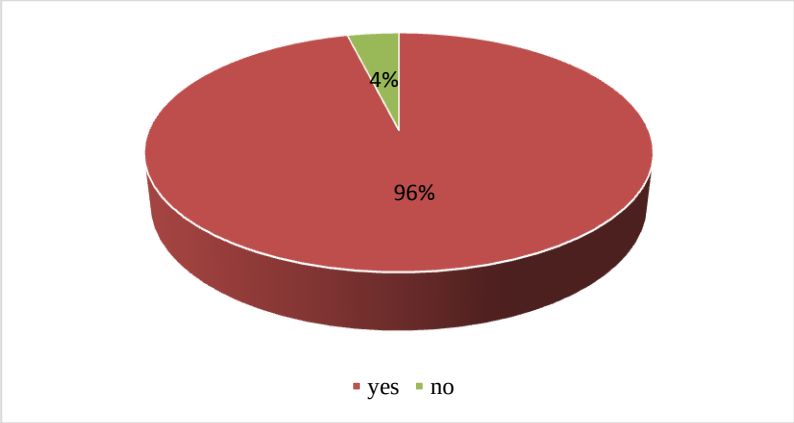

Figure 1: Heard of Covid-19 vaccine

Source: Field work (2021)

This implied that overwhelming respondents knew about Covid-19 vaccines based on the information gathered from varied sources. To obtain further information on students' knowledge on Covid-19, the study sought to find out their initial source of information. This is shown in Table 2.

Table 2: Initial Source of Information about Covid-19 Vaccine

Sources	Frequency (n=221)	Percent (96.1%)	Intent to know	Frequency (n=9)	Percent (3.9%)
	Yes			No	
Television	105	45.7			
Radio	40	17.4			
Newspaper	25	10.9	Yes	3	1.3
Social media/internet	35	15.2			
Family members	6	2.6			
Government official statement	4	1.7			
Health care providers	3	1.3	No	6	2.6
Scientific articles	3	1.3			

Source: Field work (2021)

Table 2 showed that the first-hand source of information about the vaccine for most students was via television (45.7%) and radio (17.4%) stations. These two media outlets provided students with regular and somewhat secure edifice of knowledge on Covid-19 vaccination. More so, their roles served as a catalyst for Ghana's vaccination drive. The reason could be that radio and television stations are easily accessible to Ghanaian students in addition to its competitive advantage over the other sources, in terms of possessing the highest audience and reach in Ghana. This confirms Park, Massey and Stimpson's (2021) finding that conventional news media, such as radio and television, remained the dominant outlets for sharing information on vaccine in U.S.A. According to the findings of Piltch-Loeb, Savoia, Goldberg, Hughes, Verhey, Kayyem, Miller-Idriss and Testa (2021), the traditional media were major information channels among the U.S.A. population.

As far as the data was concerned, students also gathered information from other sources such as the social media, newspapers, family members, government official statements, health care experts and scientific articles, albeit its insignificant consumption. The findings of the current study contradicted Park's et al. (2021) assertion that health care providers in the U.S.A. shared major information concerning the vaccination. From the nine students who have not heard about the vaccine, one-third was ready to learn more about it while two-thirds had no intention of learning.

Obtaining knowledge on Covid-19 vaccine through different sources appears to be necessary condition to ensure one's protection from the virus. But the sufficient condition to ensure one's security is to get vaccinated per the recommendation by the World Health Organisation (2020). Of interest to this study therefore, was to find out whether students have

vaccinated. Contrary to the expectation, as high as 202(87.8%) students had not vaccinated, with just 28(12.2%) receiving the Covid-19 jab as displayed in Figure 2. This finding contradicted Suuk's (2021) report that Covid-19 vaccination has increased in Ghana where people are already waiting up to get vaccinated. Although Suuk's study population were not students, he argued that the tide seems to be turning in Ghana's vaccination drive.

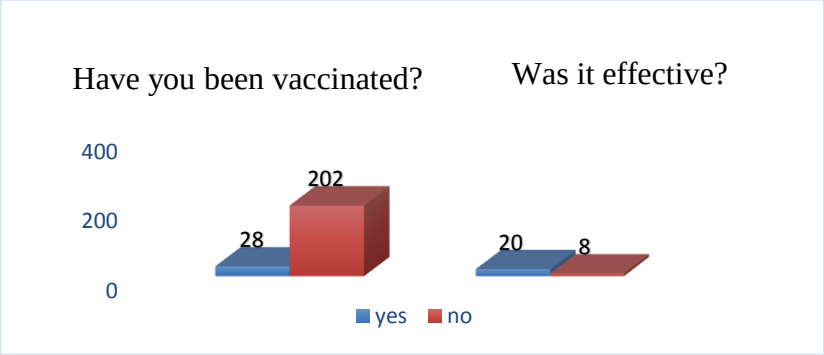

Figure 2: Vaccination and Effectiveness

Source: Field work (2021)

A paradox was pictured in the strong connection between students' knowledge on the Covid-19 vaccine and actually getting vaccinated. Thus, although they have heard about Covid-19 vaccine, students have not gone for the jab. This contradicts the assertion that there is a positive relationship between one's knowledge and attitude on vaccination and observed actions (Liu et al., 2016). Out of 28 students who vaccinated, 20(71.4%) stressed that the vaccine was effective while eight stated otherwise. The Center for Disease Control and Prevention (2021) conducted a study to evaluate individual protection from immunization in real-life situations in which they stated that Covid-19 vaccines were safe and effective. Comparing the differences in Covid-19 vaccines, Katella (2021) argued that the vaccines were to a larger extent effective. The 202(87.8%) students who have not vaccinated identified a number of reasons that influenced their decisions. Their responses were recorded on a Likert scale using the terms; Strongly Disagree (SD), Disagree (D), Agree (A), and Strongly Agree (SA), as well as their respective means and the mean of all means in Table 3.

Table 3: Reasons for not Vaccinating

Statements	SD(%)	D(%)	A(%)	SA(%)	Mean
I have concerns about the side effects	22(9.6)	12(5.2)	105(45.6)	63(27.4)	3.55
Not eligible to receive one yet	20(8.7)	46(20)	116(50.5)	20(8.7)	2.88
There has not been enough testing of the vaccine	14(6.1)	17(7.4)	132(57.4)	39(17)	3.46
I will not be given the vaccine I prefer	15(6.5)	30(13)	134(58.3)	23(10)	3.12
If I get vaccinated, I will regret it	26(11.3)	37(16.1)	109(47.4)	30(13)	2.98
I don't think the vaccines are effective	15(6.5)	30(13)	119(51.7)	38(16.5)	3.30
I am pregnant	64(27.8)	117(50.9)	14(6.1)	7(3)	2.25
I have a medical reason	53(23)	109(47.4)	26(11.3)	14(6.1)	2.53
Average Mean					3.00*
How long will it take to finally get vaccinated					4.84

Source: Field work (2021)

Four major reasons stood out strongly as hindrances to getting vaccinated. These included the side effects of taking the Covid-19 jab, limited test runs on the current vaccine, ineffectiveness of the vaccine and been deprived of preferred vaccine. However, the mean value of 3.55* indicated that the side effects of receiving the jab wielded more influence on the majority of the students as far as the major reason for not taking the jab was concerned. This confirms arguments made by several scholars and health institutions that the different types of vaccines have rare or common side effects that deter many people from taking the jab (Center for Disease Control and Prevention [CDCP], 2021; Katella, 2021; World Health Organisation, 2021). Contrary to the findings of the aforementioned studies, there were no side-effects after receiving the jab in other studies (Kapp, 2003; Löwer, 2008; Lorenz & Khalid, 2012).

A general outlook of the data depicted that more than half of the sampled students agreed that they were concerned about the side effects of the vaccine, they were not eligible to receive the vaccine, they believed that the vaccine has not been adequately tested, they would not be given their preferred vaccine, they will feel regrets after taking the vaccine and that the vaccine will not be effective. All these reasons accounted for the decision not to take the Covid-19 vaccine. The majority of students argued that their decision had little to do with their health conditions. In as much as students stated several reasons for not getting vaccinated within the cross-sectional period, it should be emphasised that it would take approximately five months for

them to finally get vaccinated. Perhaps, at the end of the fifth month, they would be well informed about the risks and safety of the vaccine before taking a rational decision.

4.3 Beliefs and Attitudes toward Covid-19 Vaccination

The intent to vaccinate largely depends on people's beliefs and attitudes toward vaccination. People have beliefs and they tend to value what they believe in. Once they hold onto their beliefs, they are likely to subconsciously or consciously put on certain attitudes. Attitudes, which are often sets of beliefs, emotions and feelings of people, can be directed towards an object, event or a thing in a form of behaviour, which apparently can be observed, recorded and measured. Similarly, the zeal to take a Covid-19 jab could be related to people's beliefs and attitudes on taking the jab. This is presented in Table 4.

Table 4: Beliefs and Attitudes toward Vaccination

Statements	SD(%)	D(%)	A(%)	SA(%)
The vaccine is safe and trusty	42(18.3)	134(58.3)	36(15.7)	18(7.8)
I believe the vaccine will help me	42(18.3)	136(50.4)	52(22.6)	20(8.7)
Vaccine made in USA and Europe is safer than what we have in Africa	38(16.5)	28(12.2)	134(58.2)	30(13)
Willing to pay to get the vaccine	47(20.4)	137(59.6)	33(14.3)	13(5.7)
I have low confidence in how the government handled the pandemic	15(6.5)	32(13.9)	59(25.7)	124(54)
I have not vaccinated because I stay far away from the centre	37(16.1)	32(13.9)	138(60)	23(10)
Africans can survive Covid-19 without vaccination	29(12.6)	132(57.4)	40(17.4)	29(12.6)
If the vaccine test is continuously made available for free, I will get vaccinated	35(15.2)	47(20.4)	127(55.2)	21(9.1)
I am not up for the vaccination because I don't like injections	38(16.5)	147(64)	25(10.9)	20(8.7)

Source: Field work (2021)

Generally, UCC students [161(70%)] believed that Africans need vaccines if they are to survive the Covid-19 pandemic. It was however, interesting to note that the idea that Covid-19 vaccines are safe and trusty diverges from the findings of the study; this is confirmed by a little above three-fourth (76.6%) of the sampled students. Their belief contradicts the assertion that vaccination is safe (CDCP, 2021). A large proportion of students [147(71.2%)] in Table 4 lamented that vaccines produced overseas especially in the U.S.A. and Europe were more

reliable and much safer than the ones imported to Africa; for that matter 68.7 percent of them believed that the vaccine will not help them.

As seen in Table 4, students [148(64.3%)] were quick to mention that they will eventually vaccinate so far as the test is continuously made available for free and not paid for. The one way to facilitate vaccination was to mount vaccination centres closer to their hostels or homes. However, the study revealed that most of these centres were sited far away from students' place of residence. This verifies a study conducted in Bangladesh that when a person stays closer to a health facility, he or she can easily vaccinate (Breiman, Streatfield, Phelan, Shifa, Rashid & Yunus, 2004). Similar people in Mozambique were reluctant to vaccinate because of the distance to vaccination facilities. This resulted in long queues and hours of operation (Bingham, Gaspar, Lancaster, Conjera, Collymore & Nguz, 2012).

It can be inferred from the study that easy access to the place of vaccination might motivate people to go for the vaccine. Beyond these, it appeared students had lost confidence in how the government has managed the pandemic so far. All these could have influenced their attitudes toward taking the Covid-19 jab. In order to measure the differences in the beliefs and attitudes of students across their socio-demographic characteristics, the study employed the independent-samples t-test as shown in Table 5.

Sex, religion, marital status, place of residence, level of students and age were considered as independent variables while beliefs and attitudes were the dependent variables. Table 5 displays the results of the independent samples t-test on beliefs and attitudes of two different groups of randomly selected Ghanaian students concerning Covid-19 vaccinations.

Table 5: Independent Samples T-Test on Beliefs and Attitudes toward Covid-19 Vaccine

		N	Mean	SD	t	df	Sig (1-tailed)
Sex							
	Males	129	25.8682	4.46406			
	Females	101	26.0990	5.02296	-.368	228	0.3565
Age							
	26 years and below	217	25.9401	4.69546	-.387	228	0.3495
	27 years and above	13	26.4615	5.09273			
Marital Status							
	Single	202	26.0545	4.71179	.734	228	0.232
	Married	28	25.3571	4.72358			
Place of Residence							
	Rural	105	25.6952	4.78605	-.809	228	0.2095
	Urban	125	26.2000	4.64897			
Level of Students							
	Undergraduates	218	26.0046	4.78043	0.480	228	0.316
	Postgraduates	12	25.3333	3.20038			
Religion							
	Christians	174	26.0920	4.56332	0.694	228	0.244
	Non-Christians	56	25.5893	5.15849			

Source: Field work (2021)

As shown in Table 5, comparing the means suggested that male students (mean=25.8682) were less likely to get immunized than female students (mean=26.0990). Students who were single, lived-in urban areas, undergraduates, Christians and those below 27 years old were more likely to get vaccinated than those who were married, lived in rural areas, post-graduates, non-Christians and 27 year and above. However, the independent-samples t-test was conducted to determine the statistically significant difference between the means. First, the test revealed no statistically significant difference on beliefs and attitudes of males and females (t= -0.368, df=223, p=0.3565) toward taking the Covid-19 jab. Therefore, the hypothesis that females were more likely to have different beliefs and attitudes towards Covid-19 vaccine from males was rejected. Rather, the study failed to reject the null hypothesis that beliefs and attitudes of male students will not be statistically significantly different from female students.

In a similar vein, there was no statistically significant difference in beliefs and attitudes of students who were single and married (t= .734, df=228, p=0.232), lived in rural and urban

areas (t= -.809, df=228, p=0.2095), undergraduates and post-graduates (t= .480, df=228, p=0.316), Christians and non-Christians (t= .694, df=228, p=0.244) and finally those below 27 years and 27 years and above (t= -.387, df=228, p=0.3495). The study failed to reject the null hypothesis that beliefs and attitudes of students who were single, lived-in urban areas, undergraduates, Christians and below 27 years old were not statistically significantly different from those who were married, lived in rural areas, post-graduates, non-Christians and 27 year and above respectively.

It can therefore, be deduced that the sampled students, regardless of their socio-demographic characteristics and differences, shared similar beliefs and attitudes toward taking the Covid-19 vaccine. The fact that students have obtained knowledge about Covid-19 vaccine from different sources relates to their beliefs and attitude towards taking the jab fits the social cognition theory by Bandura (1986). The theory argued that knowledge accumulated about an object, event or thing (in this case Covid-19 vaccine) through cultural and social backgrounds can affect the attitude directed towards taking the jab, and that can ultimately affect the behaviour of the individual. Linking this to the health belief model, it can be argued that the uptake of Covid-19 vaccine could be influenced by perceived susceptibility to and severity of the virus as well as the safety and efficacy of the vaccine (Omer, Orenstein & Koplan, 2013).

4.4 Socio-Cultural Determinants of taking Covid-19 Jabs

The social and cultural factors that shape people's perceptions of the risks or perceived vulnerabilities can affect the uptake of vaccination services (Kahan et al., 2016). Aspects for these factors comprise the appreciation of local rural culture which includes adhering to social norms, values and practices of the people (Thomas, Strickland, DiClemente, Higgins & Haber, 2012). Moreover, the social ecology model asserts that one's health is shaped largely by the environment (Busza Walker, Hairston, Gable, Pitter, Lee & Mpofu, 2012). Social and cultural factors may therefore, compromise vaccine jabs. Table 6 presents the socio-cultural factors of taking the jab.

Table 6: Socio-Cultural Factors of taking the Vaccine

Statements	SD(%)	D(%)	A(%)	SA(%)	Mean
My culture has not allowed me to take the vaccine	82(35.7)	115(50)	16(7)	17(7.4)	2.3
I prefer the local herbs than the vaccine	32(13.9)	44(19.1)	120(52.1)	34(14.8)	2.97*
I will take the vaccine if it is distributed fairly to all regions	21(9.1)	142(61.7)	44(19.1)	23(10)	2.99*
I prefer natural immunity than to take the vaccine	24(10.4)	36(15.7)	138(60.4)	31(13.5)	3.13*
My community/family member will not relate well with me	58(25.2)	140(60.9)	14(6.1)	18(7.8)	2.43
I trust that God will naturally heal me	34(14.8)	148(60)	35(15.2)	23(10)	2.87*
I'm not confident in the expertise of our health workers to deliver the right dosage of vaccine	28(12.2)	38(16.5)	128(55.6)	36(15.7)	3.03*
Average Mean					2.81*

Source: Field work (2021)

The culture and traditions (85.7%), their families and community relations (86.1%) permitted students to take the jab. These non-material social facts served as positive reinforcement to taking the Covid-19 jab as there were no social norms, values and customs that restricted students from taking the test. These findings supported other studies where culture influenced people's decisions to vaccinate to the extent that they believed experts who shared similar cultural background as theirs (Hu, Chen & Qi, 2013; Kahan, Braman, Cohen, Gastil & Slovic, 2010).

Regardless, a larger proportion of students (66.9%) preferred the use of local herbs to fight the virus. To many, using these traditional methods were the best. This confirms a study by Regmi (2014) on the socio-cultural influence on vaccination, which revealed that community members visited traditional healers for traditional herbs and medication instead of going to take the vaccine. They had the belief that medicines prescribed by traditional healers works better. It confirms their response that they were not prepared to take the jab even when the vaccines were fairly and equally distributed across regions. Students further disputed the perception that the belief in the Supreme Being will save them from the virus; neither do they trust health workers in

expertly delivering the right dosage of vaccine to them. The highest mean value (3.13*) suggested that students, among other things, preferred the natural immunity over taking the jab.

This is because the target population's (students) were at their youthful age and as a result, their immune system was stronger and able to produce antibodies to fight the virus. From the above analysis, it appeared that the cultural practices, traditions and social relations of the communities students lived, including their socialisation processes, which apparently is in support of government's initiative of getting every citizen vaccinated, have provided the gateway for them to take the Covid-19 jab. This supports Regmi's (2014) findings that the community has a favourable view towards the vaccination programme.

The family, community and religious leaders often supported the programme. Students were however ready to opt for traditional medicine to cure them especially those who were not naturally immune to the virus. To test the descriptive data above, the study performed a direct binary logistic regression to assess the extent to which the decision to take or not to take the vaccine were affected by natural immunity, religious beliefs, preference of local herbs, attitudes and beliefs toward vaccine and fair distribution of vaccines across regions. Table 7 found that the model was statistically reliable (χ^2=47.932, df=5, p<0.000) in the sense that it showed a difference between students who took the vaccine and those who did not.

Table 7: Logistic Regression of Vaccination as a Function of Natural Immunity, Religious Beliefs, Preference to Local Herbs, Attitudes and Beliefs and Fair Distribution of Vaccines across Regions

Variables	B	Wald	Sig	Odd ratio (B)	95%CI for exp(b) Lower	Upper
Religious beliefs	-.283	.230	.632	.753	.236	2.401
Prefer local herbs	-1.453	5.480	.019	.234	.069	.789
Fair distribution of vaccines across regions	1.480	7.534	0.006	**4.392**	1.527	12.636
Natural immunity	-.143	.57	.811	.867	.270	2.787
Attitudes and beliefs toward vaccines	-.115	4.034	.045	.891	.796	.997
Constant	5.4					

Source: Field work (2021)

The Nagelkerke R square of 0.34 suggested that natural immunity, religious beliefs, preference to local herbs, attitudes and beliefs and fair distribution of vaccines across regions explained 34 percent of the variance in vaccination. The model also showed that the Wald test of

preference for local herbs (χ^2=5.480, df=1, p=0.019), fair distribution of vaccines across regions (χ^2=7.534, df=1, p=0.006) and attitudes and beliefs toward vaccines (χ^2=4.034, df=1, p<0.045) reliably affected the decision to take the vaccine. When the effects of preference for local herbs, attitudes and beliefs toward vaccination and equitable distribution of vaccines across regions were controlled for, it meant that religious denomination (χ^2=.23, df=1, p=0.632) and natural immunity (χ^2=.57, df=1, p=0.811) were not significant predictors. The Hosmer and Lemeshow's goodness of fit test for all the predictors in the model showed a good fit with χ^2=11.463, df=8, p=0.117.

Table 7 depicted that the most reliable predictors of student vaccination were fair distribution of vaccines across region, preference for local herbs and attitudes and beliefs toward vaccines. In addition, the odd ratio values indicated that the odds in favour of taking the jab increases by a multiplicative factor of 4.392 for a one unit change in fair distribution of vaccines across regions. The decrease in taking local herbs and negative beliefs and attitudes toward the vaccine would increase the need to take the vaccine slightly (.234) and (.891) respectively. The ability of the model to correctly satisfy students' preparedness to vaccination was very high (90%). The model also correctly explained that 28.6 percent of students who had taken the vaccine were correctly classified as well as 98.5 percent of students who had not taken the vaccine were correctly classified.

5.0 CONCLUSION

The study concluded that UCC students have requisite knowledge about Covid-19 vaccines. The information was generally acquired from television and radio stations. Although students have knowledge about the existence of vaccines, the larger proportion of them has not taken the jab. They were worried about the side effects of vaccination. Students, who had not been vaccinated, indicated that they will need approximately five months to be fully prepared to take the vaccine. The study further concluded that students shared similar beliefs and attitudes toward taking the Covid-19 vaccine regardless of their socio-demographic characteristics and differences. In relation to socio-cultural factors that influenced their preparedness to take the jab, the study depicted that the most reliable predictors, in accordance to their effects, were fair distribution of vaccines across region, preference for local herbs and attitudes and beliefs toward vaccines.

6.0 RECOMMENDATIONS

- The study therefore, recommended that the Ghana Health Service in collaboration with community leaders should mount more vaccine centres closer to the community members and hostels of students in order to bridge the distance gap and promote easy accessibility.

- The Ministry of Health should also instruct health care providers, as a way of enhancing publicity, to visit households across the regions of Ghana and educate its members about the relevance of Covid-19 vaccination.

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