

## Jamaicans' Decisions on COVID-19 vaccination: A National Cross-sectional Empirical Survey

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### Abstract

**Introduction:** COVID-19 is a dangerous disease caused by a virus discovered in December 2019 in Wuhan, China. World Health Organization WHO (2021), postulated that safe and effective vaccines are an important tool, in combination with other measures, to protect people against COVID-19. People decide to get a COVID-19 vaccine for a variety of reasons. Some people are skeptical or hesitant to get the vaccine. But many people are having a change of heart and deciding to get a vaccine (Weis, 2021).

**Objective:** This study evaluates issues that influence Jamaicans' decisions to accept the COVID-19 vaccination.

**Materials and Methods:** A web-based and face-to-face explanatory cross-sectional, and correlational research design was used to collect data from vaccinated and unvaccinated Jamaicans. A purposive (non-probability) sampling was used to obtain the data from 1074 sampled respondents across the 14 parishes in Jamaica. The collection of data was from September 20, 2021, to November 30, 2021. It was ensured that confidentiality, privacy, and informed consent were maintained.

**Results:** The findings indicate that the majority of the sampled respondents were vaccinated against COVID-19 (51.9%, n=557) at the time of this research. This means that 13 in every 25 of the sampled respondents were

vaccinated against COVID-19. Whereas, 12 in every 25 (48.1%, n=517) were not vaccinated against COVID-19.

**Conclusion:** The COVID-19 pandemic demands that Jamaicans remain vigilant in their daily lives as they return to everyday activities.

**Keywords:** COVID-19 vaccine, vaccine acceptance, vaccine hesitancy, gender, age, employment status.

## Introduction

According to the Center for Diseases Control and Prevention (CDC, 2021a), Coronavirus disease 2019 (COVID-19) is a dangerous disease caused by a virus discovered in December 2019 in Wuhan, China. It is very contagious and has quickly spread around the world. Most people who contract COVID-19 have mild symptoms, but some people become severely ill. Older adults and people who have certain underlying medical conditions are at increased risk of severe illness from COVID-19. Hundreds of thousands of people have died from COVID-19 in the United States. World Health Organization (WHO, 2021), postulated the best way to prevent and slow down transmission is to be well informed about the disease, get vaccinated and follow local guidance. Safe and effective vaccines are an important tool, in combination with other measures to protect people against COVID-19, save lives and reduce wide scale social disruption.

Through the COVAX Global Vaccine Facility and other mechanisms, WHO and partners are working with governments to facilitate equitable access to and distribution of an initial allocation of vaccine as quickly as possible". "Managing Jamaica's COVID-19 vaccine rollout digitally" (2021) shared that with a population of under 3 million, Jamaica has registered over 51,000 cases and suffered 1,163 COVID-related deaths to date (as of July 22nd, 2021). With the pandemic having a devastating effect on the well-being of Jamaican children, UNICEF Jamaica was quick to adjust its programming and supported the Ministry of Health and Wellness (MOHW) efforts to combat the spread of the virus. In March 2021, one year after identifying its first COVID-19 case, Jamaica became the first Caribbean country to receive a shipment of COVAX-procured vaccines. World Health Organization WHO (2021) posits millions of people have safely received COVID-19 vaccines. All of the approved COVID-19 vaccines have been carefully tested and continue to be monitored. Like all vaccines, COVID-19 vaccines go through a rigorous, multi-stage testing process, including large clinical trials that involve tens of thousands of people. These trials are specifically designed to identify any safety concerns.

"Understanding Viral Vector COVID-19 Vaccines" (2021), defines mRNA vaccines as a new type of vaccine to protect against infectious diseases. They teach our cells how to make a protein that triggers an immune response which produces antibodies that protect us from getting infected. Whereas the viral vector vaccines provide protection without ever having to risk the serious consequences of getting sick with COVID-19. Nikolovski et al (2021), reported that individual perceptions about vaccines and about COVID-19 can strongly influence the decision to vaccinate

against COVID-19 and are likely more associated with vaccine behaviors than demographics alone. Furthermore, Weis (2021), noted that people decide to get a COVID-19 vaccine for a variety of reasons: to protect their families, to protect their health, and to help society return to normal. Some people are skeptical or hesitant to get the vaccine, but many are having a change of heart and deciding to get vaccinated.

The widespread of COVID-19, has driven many to accept COVID-19 vaccine. Global vaccine development efforts have been accelerated in response to the devastating COVID-19 pandemic. Vaccination forms a critical pillar in the road to recovery from the COVID-19 pandemic. Widespread acceptance of COVID-19 vaccines is crucial for achieving sufficient immunization coverage to end the global pandemic.

According to the Ministry of Health and Wellness (MOH, 2021), there have been no deaths due to vaccinations against COVID-19 in Jamaica, in the six months that the island has been administering doses. Earlier, eleven (11) persons have died after being vaccinated. However, nine (9) of those cases were found to be due to other causes, making their vaccination coincidental. The other two deaths have been classified as indeterminate temporal, which means that while they occurred after the persons were vaccinated, there is no established link to their vaccination. Up to 1:00 pm on October 1, 2021, the island had administered 787,602 doses of vaccines. Of that number, 507,832 were first doses, 250,579 were second doses and 29,191 were single doses. The Ministry continues to encourage Jamaicans to get vaccinated to prevent serious illness, hospitalization, and/or death associated with COVID-19.

This study will improve awareness of the importance of COVID-19 vaccination among Jamaicans as it seeks to answer these research questions. 1. What are the factors that influence the decision of Jamaicans to accept the COVID-19 vaccination? 2. How have the factors influenced Jamaicans to accept the COVID-19 vaccination?

Those with insufficient awareness regarding vaccination need to be targeted to maintain and improve vaccination coverage. The results obtained from this study can be a helpful source of information for other researchers who wish to gain further knowledge on this topic.

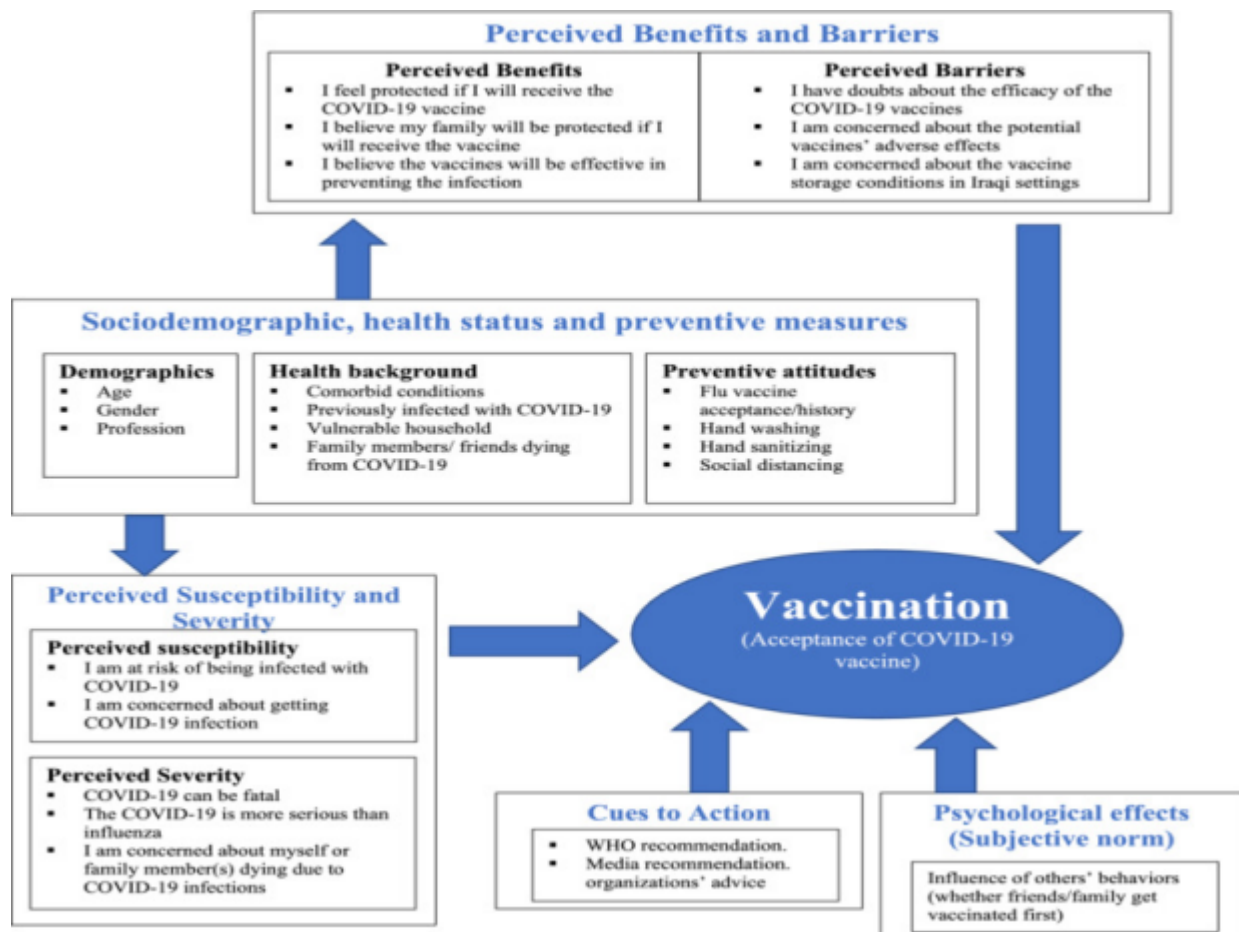
## **Theoretical framework**

The Health Belief Model by Rosenstock et. al was developed in the 1950s and postulated that an individual's willingness to change a health behaviour is primarily due to their health perceptions (Urich, 2017; Boskey, 2020). In fact, an individual's belief about health and health conditions or illnesses plays an important role in determining health-related behaviours. Health experts often look for ways that such a Health Belief Model can impact the actions people take, including the behaviours that have an impact on both individual and public health (Boskey, 2020). Today, the Health Belief Model is one of the most widely applied theories of health behaviour; therefore, this model can be applied to the context of the COVID-19 vaccination (Jones et. al, 2014). Al-Metwali et. al (2021) concluded that this theoretical framework is useful in exploring the

variables that have the potential to influence an individual’s acceptance to receive the COVID-19 vaccine.

Additionally, Ulrich (2017) suggested that the model has been used to develop effective interventions to change health-related behaviours by targeting various aspects of the model’s key constructs. Interventions based on the Health Belief Model aim to promote health education and health promotion to improve the general health and well-being of many individuals during the COVID-19 pandemic. According to LaMorte (2019), the Health Belief Model posits that six major constructs predict health behaviour, which includes: perceived susceptibility (individual’s subjective perception of the risk of acquiring an illness), perceived severity ( an individual’s feelings on the seriousness of contracting a disease or illness), perceived benefits (an individual’s perception on the effectiveness following an action), perceived barriers (obstacles that may influence an individual’s action), cues to action (the stimulus needed to trigger the decision making process to accept a recommended health action) and self- efficacy (refers to the level of one’s confidence in the ability to successfully perform a behaviour).

The health belief model was selected for this research study due to its ability to address and determine the factors influencing Jamaica’s decision to accept the COVID-19 vaccination.



**Figure 1. Health Belief Model domains and variables that have the potential to influence individual’s acceptance of receiving the COVID-19 vaccine (Al- Metwali et. al, 2021.)**

## Literature Review

The COVID-19 outbreak has become a potential threat to global public health. Indeed, this pandemic highlights the need for effective therapeutics for SARS-CoV-2 infections that can improve patients' clinical conditions (Peng, 2020). With that said, vaccination is one of the effective strategies to control the pandemic, but its acceptance should be high enough to achieve herd immunity in the community. Widespread acceptance of COVID-19 vaccines is crucial for achieving sufficient immunization coverage to end the global pandemic (Solís Arce et al., 2021).

The World Health Organization identifies vaccine hesitancy as one of the 10 threats to global health in 2019. It is defined as the "delay in acceptance or refusal of vaccination despite availability of vaccination services" by the Strategic Advisory Group of Experts on immunization and involves a complex interaction of time, place, context, and vaccine specific factors (Aw et al., 2021). Vaccines have been a key strategy for improving health outcomes and life expectancy by controlling and preventing infectious diseases, such as smallpox, polio, and plague. Due to the increase rate in morbidity and mortality associated with COVID-19, the development of a safe and effective COVID-19 vaccine is a crucial step to halt the pandemic. As of December 23, 2020, there were 61 COVID-19 vaccine candidates awaiting clinical evaluation and 172 candidate vaccines in preclinical evaluation (Alqudeimat Y, et al). However, misinformation and conspiracy theories surrounding COVID-19 vaccines can highly influence vaccine uptake once available.

Several countries have been experiencing a decrease in vaccine coverage due to safety concerns, the effectiveness of vaccines, misinformation, religious beliefs, and level of income. (Kamal et al, 2021). It is found that among the active social media users within the Caribbean, most people are willing to take the COVID-19 vaccine. It is believed that vaccine hesitancy is a serious issue within the Caribbean as knowledge about COVID-19 vaccine was associated with the decision in accepting the vaccine (The Jamaica Gleaner, 2021). According to CARPHA, and the Johns Hopkins Centre for Communication Programs 72% of Jamaicans and 59% of persons living in Trinidad and Tobago would not accept a COVID-19 vaccine, if it were made available to them. Although there is some data regarding vaccine hesitancy from a few countries in the Caribbean Community, each country has different socio-economic, political, and cultural circumstances which may lead to different factors affecting vaccination uptake and coverage. Many fear the possible side effects of the vaccine, others do not have enough information on the vaccine and some do not trust the manufacturers. The question of one's vaccination status is becoming increasingly relevant. With the majority of people returning to work after months of working from home, there are a growing number of jobs and sectors which are now requiring people to be fully vaccinated against COVID-19 (Ellyatt, 2021).

The Jamaica Gleaner titled "COVID Jab Fear-Resistance from Frontline Staff could Hurt Vaccine Campaign", reported doubt was common among a variety of workers at The University Hospital of the West Indies (UHWI) and the Kingston Public Hospital (KPH) (Cross, 2020). It

further states that healthcare workers have expressed their concern of vaccine side effects and needed more information about the COVID-19 vaccine.

Cross (2020) postulated that Front-line staff may complicate what could be a nightmare for the Government as doctors, nurses, porters, guards, and others in the hospital and health center network interact with patients and present the greatest threat as transmitters or victims of viral outbreak (The Jamaica Gleaner, 2020). Ellyatt(2021) also posit that as vaccination drives roll out, the remaining sections of society which include mainly young adults who are not yet vaccinated and decided to stay unvaccinated could find it very difficult to return to work, or find employment in some businesses and companies. Many employers are now reviewing their COVID-19 vaccination guidelines as the corona pandemic continues. Some employees are being fired while others are being placed on unpaid leave. Other employers are requesting unvaccinated workers to submit a weekly test and take other safety precautions (Allen Smith, 2021). Reports have also emerged that some workers in the local tourism sector in Jamaica have been threatened that they will lose their jobs if they do not take the COVID-19 vaccine. The employer is required to provide a safe system or place of work for its employees due to the fact that the COVID-19 infection gives rise to a disease that is deleterious to the health and could even lead to death (World Health Organization, 2020; Centers for Disease Control and Prevention, 2021b).

To prevent such, employers have implemented reasonable measures to minimize harm by asking employees to protect themselves by getting vaccinated (The Jamaica Gleaner, 2021). Imega Breese McNab, Executive Director of the Private Sector Organization of Jamaica (PSOJ), explained that the Private Sector Vaccine Initiative (PSVI) is a multi-stakeholder response, and an agent of the Ministry of Health and Wellness, which facilitates the vaccination of the productive sector in Jamaica. She disclosed that the initiative has facilitated more than 14,000 vaccinations of employees and their dependents since July 2021. She also expressed that getting the vaccines will help to preserve lives during the pandemic (Spence, 2021). In addition, WHO (2021) attests that COVID-19 vaccines provide strong protection against serious illness, hospitalization, and death. There is also some evidence that being vaccinated will make it less likely that you will pass the virus on to others, which means your decision to get the vaccine also protects those around you.

## Methods and materials

A web-based and face-to-face explanatory cross-sectional, and correlational research design was used to collect data from vaccinated and unvaccinated Jamaicans, in order to determine the research goal of this study. According to the Statistical Institute of Jamaica (STATIN, 2021), Jamaica's population by 2019 was 2,732,537 at a 95% confidence interval with a 3% margin of error with an actual sample size of 1074 randomly selected respondents. A purposive (non-probability) sampling was used to obtain the data from 1074 sampled respondents across the 14 parishes in Jamaica (Kingston, St. Andrew, St. Thomas, Portland, St. Mary, St. Ann, Trelawny, St. James, Hanover, Westmoreland, St. Elizabeth, Manchester, Clarendon, and St. Catherine). This research takes a quantitative methodology in the form of a survey collected through a

questionnaire consisting of 21 questions carefully structured to garner data necessary to fulfil the objective of this research. Likewise, a standardized survey was distributed via various social media platforms including WhatsApp, Facebook, Instagram, Snapchat and through means of reaching out through the phone.

The researchers ensured information that was retrieved was strictly confidential, privacy maintained, and informed consent was maintained from each respondent. The quantitative data were analyzed by using the statistical quantitative software (SPSS), version 25, where descriptive statistics such as frequency tables, chi-square test, degree of freedom, two-tailed test, and p-value were utilized to convey the findings in the research. The collection of data was from September 20, 2021, to November 30, 2021. The method of the research serves to obtain information to achieve the following research questions: 1) What are the factors that influence the decision of Jamaicans to accept the COVID-19 vaccination? 2) How have the factors influenced Jamaicans to accept the COVID-19 vaccination?

A correlational design was used for this study to test the relationship between two or more variables, and measures of association to verify the existence and strength of any apparent relationships between variables (Rea & Parker, 2014). This approach allowed for cross-sectional data collection from a large group of people of different socio-demographic backgrounds. Creswell (2014) purported that these designs have been detailed into more complex correlations between variables found in methods of structural equation modeling, hierarchical linear modeling, and logistic regression. As such, testing the hypotheses, ‘Gender, age, and career or profession are likely the most common associated factors that influence the acceptance of COVID-19 vaccination among Jamaicans and Gender, age and career or profession are likely the least common associated factors that influence the acceptance of COVID-19 vaccination among Jamaicans.’

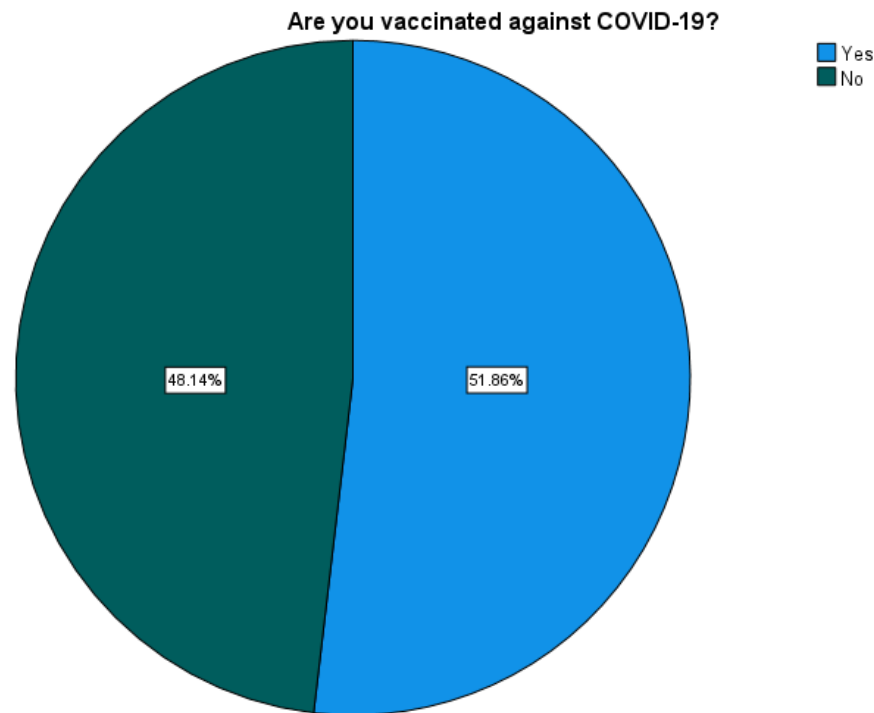
## Findings

Table 1 presents the demographic characteristics of the sampled respondents (n=1074). Of the sampled respondents, the majority were female (75.6%, n=812), within the age range of 18-27 years (50.8%, n=546) and employed (47.1%, n=505).

**Table1. Demographic characteristics of the sampled respondents, n=1074**

Details	%(n)
<b>Gender</b>	
Male	24.4 (262)
Female	75.6 (812)
<b>Age cohort</b>	
18-27 years	50.8 (546)
28-37 years	20.6 (221)
38-47 years	14.4 (155)
48-57 years	8.1 (87)

58-67 years	4.4 (47)
68 and over	1.7 (18)
<b>Employment status</b>	
Employed	47.1 (505)
Unemployed	39.4 (423)
Self-employed	13.5 (145)



**Figure 2. COVID-19 Vaccination Status**

The respondents were asked, 'Are you vaccinated against COVID-19?' Their responses are depicted in Figure 2. The majority of the sampled respondents were vaccinated against COVID-19 (51.9%, n=557) at the research time. This means that 13 in every 25 of the sampled respondents were vaccinated against COVID-19, were as 12 in every 25 of the sampled respondents were unvaccinated.

H<sub>1</sub>: Gender, age, and career or profession are likely the most common associated factors that influence the acceptance of COVID-19 vaccination among Jamaicans.

H<sub>2</sub>: Gender, age, and career or profession are likely the least common associated factors that influence the acceptance of COVID-19 vaccination among Jamaicans.

Table 2 shows that majority of employed respondents were vaccinated against COVID-19, which accounts for 57.6%. While 50.3% of self-employed respondents were also vaccinated against COVID-19, compared to 49.7% of the respondents not vaccinated. However, 54.4% of the unemployed respondents were hesitant to accept the COVID-19 vaccine. Table 2 presents a



cross-tabulation between one's COVID-19 vaccination status and employment status. Based on the cross-tabulation, there is a statistical association between the aforementioned variable ( $\chi^2 = 13.437, P = 0.001 < 0.05$ ).

**Table 2.A cross-tabulation of 'Are you vaccinated against COVID-19?' and 'What is your employment status?'**

Are you vaccinated against COVID-19?	What is your employment status?			Total % (n)
	Employed	Unemployed	Self-employed	
	% (n)	% (n)	% (n)	% (n)
Yes	57.6 (291)	45.8 (193)	50.3 (73)	51.9 (557)
No	42.4 (214)	54.4 (230)	49.7 (72)	48.1 (516)
Total	505	423	145	1073

Table 3 presents a cross-tabulation between one's COVID-19 vaccination status and career or profession. Based on the cross-tabulation, there is no statistical association between the two aforementioned variables ( $\chi^2(2) = 14.319, P = 0.001 > 0.05$ ). Simply put, irrespective of one's career or profession, his/her COVID-19 vaccination status is the same.

**Table 3.A cross-tabulation of 'Are you vaccinated against COVID-19?' and 'What is your career/ profession?'**

Are you vaccinated against COVID-19?	What is your career /profession?'			Total % (n)
	Essential	Non-essential	N/A	
	% (n)	% (n)	% (n)	% (n)
Yes	58.8 (253)	48.7 (154)	45.9 (150)	51.9 (557)
No	41.2 (177)	51.3 (152)	54.1 (177)	48.1 (516)
Total	430	316	327	1073

Table 4 presents a cross-tabulation between one's COVID-19 vaccination status and being at great risk. Based on the cross-tabulation, there is no statistical association between the two aforementioned variables ( $\chi^2(2) = 3.412, P = 0.065 > 0.05$ ). Simply put, irrespective of one being at great risk, his/her COVID-19 vaccination status is the same.

**Table 4.A cross-tabulation of 'Are you vaccinated against COVID-19?' and 'Do you think you are at great risk for contracting COVID-19?'**

Are you vaccinated against COVID-19?	Do you think you are at great risk for contracting COVID-19?		Total % (n)
	Yes	No	
	% (n)	% (n)	% (n)
Yes	54.9 (477)	49.2 (280)	51.9 (557)
No	45.1 (228)	50.8 (289)	48.1 (517)
Total	505	569	1074

Table 5 presents a cross-tabulation between one's COVID-19 vaccination status and willingly accepting the COVID-19 vaccine. Based on the cross-tabulation, there is no statistical association between the two aforementioned variables ( $\chi^2(2) = 666.546, P = 0.001 > 0.05$ ). Simply put, irrespective of one's willingness to accept the COVID-19 vaccine, his/her COVID-19 vaccination status is the same.

**Table 5.A cross-tabulation of 'Are you vaccinated against COVID-19?' and 'Did you willingly accept the COVID-19 vaccine?'**

Are you vaccinated against COVID-19?	Did you willingly accept the COVID-19 vaccine?			Total
	Yes	No	N/A	
	% (n)	% (n)	% (n)	% (n)
Yes	88.8 (502)	22.1 (38)	5.0 (17)	51.9(557)
No	11.2 (63)	77.9 (134)	95.0 (320)	48.1 (517)
Total	565	172	337	1074

Table 6 presents a cross-tabulation between one's COVID-19 vaccination status and believing the COVID-19 vaccine is necessary. Based on the cross-tabulation, there is no statistical association between the two aforementioned variables ( $\chi^2(2) = 382.968, P = 0.001 > 0.05$ ). Simply put, irrespective of one's belief that the COVID-19 vaccine is necessary, his/her COVID-19 vaccination status is the same.

**Table 6.A cross-tabulation of 'Are you vaccinated against COVID-19?' and 'Do you believe the COVID-19 vaccine is necessary for you?'**

Are you vaccinated against COVID-19	Do you believe the COVID-19 vaccine is necessary for you?		Total
	Yes	No	
	% (n)	% (n)	% (n)
Yes	74.2 (511)	11.9 (46)	51.9 (557)
No	25.8 (178)	88.1 (339)	48.1 (517)
Total	689	385	1074

Table 7 presents a cross-tabulation between one's COVID-19 vaccination status and believing the COVID-19 vaccine is safe. Based on the cross-tabulation, there is no statistical association between the two aforementioned variables ( $\chi^2(2) = 434.603, P = 0.001 > 0.05$ ). Simply put, irrespective of one's belief that the COVID-19 vaccine is safe, his/her COVID-19 vaccination status is the same.

**Table 7.A cross-tabulation of ‘Are you vaccinated against COVID-19?’ and ‘Do you believe COVID-19 vaccine is safe?’**

Are you vaccinated against COVID-19?	Do you believe COVID-19 vaccine is safe?			Total % (n)
	Yes % (n)	No % (n)	I don’t know % (n)	
Yes	85.7 (419)	8.5 (15)	30.1 (123)	51.9 (557)
No	14.3 (70)	91.5 (162)	69.9 (285)	48.1 (517)
Total	489	177	408	1074

Table 8 presents a cross-tabulation between one’s COVID-19 vaccination status and COVID-19 vaccine is more likely to be taken. Based on the cross-tabulation, there is no statistical association between the two aforementioned variables ( $\chi^2(2) = 121.186, P = 0.001 > 0.05$ ). Simply put, irrespective of one’s decision of COVID-19 vaccine is more likely to be taken, his/her COVID-19 vaccination status is the same.

**Table 8.A cross-tabulation of ‘Are you vaccinated against COVID-19?’ and ‘Which COVID-19 vaccine are you more likely to take?’**

Are you vaccinated against COVID-19?	Which COVID-19 vaccine are you more likely to take?			Johnson and Johnson % (n)	N/A % (n)	Total % (n)
	Astra Zeneca % (n)	Pfizer % (n)	Moderna % (n)			
Yes	72.8 (236)	50.3 (257)	34.2 (13)	32.4 (24)	21.3 (27)	51.9 (557)
No	27.2 (88)	49.7 (254)	65.8 (25)	67.6 (50)	78.7(100)	48.1 (517)
Total	324	511	38	74	127	1074

## Discussion

COVID-19 is very contagious and has quickly spread around the world. Global vaccine development efforts have been accelerated in response to the devastating COVID-19 pandemic. Vaccination forms a critical pillar in the road to recovery from the COVID-19 pandemic. This study explores the factors influencing Jamaican’s decisions to accept the COVID-19 vaccination and how the factors influenced Jamaicans to accept the COVID-19 vaccination. The research hypothesis states that gender, age, and career or profession are likely the least most common associated factors that influence the acceptance of COVID-19 vaccination among Jamaicans. The aforementioned variables were accepted through statistical analysis. The Health Belief Model provides some context for this work, and the discussion in this study is anchored by such a theoretical framework. Enrolled in this study were 1074 participants from Jamaica. A study of the latest Gallup COVID-19 tracking survey finds 36% of U.S. employees saying their employer is requiring all its workers without a medical exemption to be vaccinated against COVID-19. (Jones, 2021)

The current cross-sectional study reveals that only 51.9% of respondents were vaccinated against COVID-19 and 48.1% were not vaccinated. This highlights the statistics from COVID vax indicating that there have been approximately 1,165,557 vaccine doses administered for COVID-19 in Jamaica on December 13, 2021. That is about 39.2 doses per hundred people (~2.97 million). There are approximately 698,028 people vaccinated or 23.5% of the population vaccinated against COVID-19. Whereas 18.2% (540,671) of the population have completed vaccination. In a recent study, reports have also emerged that some workers in the local tourism sector in Jamaica have been threatened that they will lose their jobs if they do not take the COVID-19 vaccine. (The Jamaica Gleaner, 2021) In yet another study it revealed that some employees are being fired while others are being placed on unpaid leave. Other employers are requesting unvaccinated workers to submit a weekly test and take other safety precautions. (Allen Smith, 2021) With the majority of people returning to work after months of working from home, there are a growing number of jobs and sectors which are now requiring people to be fully vaccinated against COVID-19 (Ellyatt, 2021).

Likewise, more than 500 persons had pre-registered to receive doses of the Pfizer or AstraZeneca vaccines at the event held at the Red Stripe Brewery. Participating entities were Red Stripe, Pepsi-Cola Jamaica, Celebration Brands Limited, Jamaica Biscuit Company and Massy Distributors. “However, vaccination is nothing new to us. It helps to build our immune system, so everybody should just get it,” said the Red Stripe employee (Spence, 2021). Human Resource Manager at Jamaica Biscuit Company, Sharon Laidlaw, told JIS News that 70 of the company’s team members registered for the vaccination blitz (Spence, 2021). The results from this study seem consistent with previous research on similar topics. Cross postulated that Frontline staff may complicate what could be a nightmare for the Government as doctors, nurses, porters, guards, and others in the hospital and health center network interact with patients and present the greatest threat as transmitters or victims of a viral outbreak (The Jamaica Gleaner, 2020).

Table 2 shows that the majority of employed respondents were vaccinated against COVID-19, which accounts for 57.6%. While 50.3% of self-employed respondents were also vaccinated against COVID-19. Comparatively, persons who are employed and self-employed in Jamaica are more likely to accept the COVID-19 vaccine than those that are unemployed. However, the refusal of vaccination among the unemployed (45.6%) despite the availability of the vaccine are due to misinformation, conspiracy theories surrounding COVID-19 vaccines, the concern of vaccine side effects, and the need for more information about the COVID-19 vaccine. In the United States of America most workers hold strong opinions on vaccination requirements as employers communicate clearly and often with employees and help them understand how vaccinations will make for a safer workplace (Jones & Agrawal, 2021). Prime Minister, the Most Hon. Andrew Holness, is encouraging businesses to dialogue with workers to obtain vaccine acceptance before deciding to embark on a mandatory exercise. This will help in creating greater awareness about the safety and effectiveness of the vaccines and increasing COVID-19 acceptance and adherence. (Angus, 2021).

Table 4 did not reveal any statistical association between the respondents at risk for contracting COVID-19 and those not at risk for both vaccinated and unvaccinated ( $\chi^2(2) = 3.412, P = 0.065 > 0.05$ ). There was no statistical association between the respondents who were vaccinated against COVID-19 and those who were willing to accept the COVID-19 vaccine ( $\chi^2(2) = 666.546, P = 0.001 > 0.05$ ) as depicted in table 5. There was no statistical association between the respondents who were vaccinated and those who believe the COVID-19 vaccine is necessary ( $\chi^2(2) = 382.968, P = 0.001 > 0.05$ ) and also those who believe COVID-19 is safe ( $\chi^2(2) = 434.603, P = 0.001 > 0.05$ ). As much as the majority of the vaccinated against COVID-19 are more likely to take AstraZeneca (72.8%), there was no statistical association between the two aforementioned variables ( $\chi^2(2) = 121.186, P = 0.001 > 0.05$ ).

## Conclusion

The study findings concluded that the current study has shown that multiple factors contributed to Jamaicans' decision to accept the COVID-19 vaccination; while employment status is one of them, it accounts for a majority percentage of their decision. With the new insight this research has given, it is evident that further research is needed to determine other factors that contribute to Jamaican's decision to accept the COVID-19 vaccination. With that being said, employment status falls under the heading of career or profession has a significant association. As such, the COVID-19 pandemic demands that Jamaicans remain vigilant in their daily lives as they return to everyday activities. They can each take some simple steps to protect themselves, their families, and their communities. One of these measures is to get vaccinated to help combat the spread of the virus.

Health personnel have agreed that vaccines are safe and effective. In spite of this, many people are choosing not to get vaccinated as anti-vaccination myths are almost certainly contributing to this trend. In order to address the issues for Jamaican's decision to accept the COVID-19 vaccination, long term initiatives must be implemented to promote health promotion and health education. This will improve the well-being of individuals during the COVID-19 pandemic. This research study sets a foundation for future researchers to explore this area of interest or similar context of the research study.

## References

1. Abu-Hena Mostofa Kamal, Tonmoy Sarkar, Mohammed Moniruzzaman Khan, Sajal K. Roy, Sazzad Hossain Khan, S M Murshid Hasan, Mohammad Shakhawat Hossain, Colleen Anne Dell, Holly Seale, Md Saiful Islam (October 14, 2021) *Factors affecting willingness to receive COVID-19 vaccine ...* (n.d.). Retrieved December 7, 2021, from <https://journals.sagepub.com/doi/pdf/10.1177/09735984211050691>.
2. Allen Smith, J. D. (2021, December 9). Employers react to workers who refuse a COVID-19 vaccination. SHRM. Retrieved December 10, 2021, from <https://www.shrm.org/ResourcesAndTools/legal-and-compliance/employment-law/Pages/if-Workers-Refuse-a-COVID-19-Vaccination.aspx?linktext=Employers-React-to-Workers-Wh>.

3. Al-Metwali, B., Al-Jumaili, A., Al-Alag, Z. (2021) Exploring the acceptance of COVID-19 vaccine among healthcare workers and general population using health belief model. *National Center for Biotechnology Information, U.S. National Library of Medicine*. Retrieved 8 October 2021 from, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8242385/>
4. Alqudeimat Y; AleneziD; AlHajriB; AlfouzanH; AlmokhaizeemZ; AltamimiS; AlmansouriW; AlzalalahS; Ziyab AH; (n.d.). Acceptance of a COVID-19 vaccine and its related determinants among the general adult population in Kuwait. *Medical principles and practice : international journal of the Kuwait University, Health Science Centre*. Retrieved December 1, 2021, from <https://pubmed.ncbi.nlm.nih.gov/33486492/>.
5. Aw, J., Seng, J. J. B., Seah, S. S. Y., & Low, L. L. (2021, August 13). *Covid-19 vaccine hesitancy- a scoping review of literature in high-income countries*. *Vaccines*. Retrieved September 29, 2021, from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8402587/>.
6. Boskey, E. (2020) The Health Belief Model. *Very wellmind*. Retrieved 8 October 2021 from, <https://www.verywellmind.com/health-belief-model-3132721>
7. *Carpha study finds High vaccine acceptance*. News | Jamaica Gleaner. (2021, August 27). Retrieved October 5, 2021, from <https://jamaica-gleaner.com/article/news/20210827/carpha-study-finds-high-vaccine-acceptance>.
8. Centers for Disease Control and Preventions. COVID-19: (2021a). COVID-19: Basics of COVID-10. <https://www.cdc.gov/coronavirus/2019-ncov/your-health/about-covid-19/basics-covid-19.html>.
9. Centers for Disease Control and Preventions. COVID-19: (2021b). Guidance for Businesses and Employers Responding to Coronavirus Disease 2019 (COVID-19). <https://www.cdc.gov/coronavirus/2019-ncov/community/guidance-business-response.html>.
10. Covid Jab Fear-resistance from front-line staff could hurt vaccine campaign. COVID JAB FEAR-Resistance from front-line staff could hurt vaccine campaign | Lead Stories | Jamaica Gleaner. (2020, December 14). Retrieved December 7, 2021, from <https://jamaica-gleaner.com/article/lead-stories/20201214/covid-jab-fear-resistance-front-line-staff-could-hurt-vaccine-campaign>.
11. Creswell, J. (2014). *Research Design. Qualitative, Quantitative, and Mixed Methods Approaches* (4th ed.). 2455 Teller Road, Thousand Oaks, California 91320: SAGE Publication, Inc.
12. Ellyatt, H. (2021, September 14). More workers are facing mandatory Covid vaccination or no job. CNBC. Retrieved December 10, 2021, from <https://www.cnbc.com/2021/09/14/many-workers-are-facing-compulsory-covid-vaccination-or-no-job.html>.
13. Jones, C., Smith, H., Llewellyn, C. (2014) Evaluating the effectiveness of health belief model interventions in improving adherence: a systematic review. *National Center for Biotechnology Information, U.S. National Library of Medicine*. Retrieved 8 October 2021 from, [https://pubmed.ncbi.nlm.nih.gov/?term=Jones+CJ&cauthor\\_id=25053213](https://pubmed.ncbi.nlm.nih.gov/?term=Jones+CJ&cauthor_id=25053213).
14. Jones, J.M. & Agrawal, S. (2021). Workers have strong views on vaccine mandates; more in favor. <https://news.gallup.com/poll/353825/workers-strong-views-vaccine-mandates-favor.aspx>.

15. LaMorte, W. (2019) The Health Belief Model. Boston University School of Public Health. Retrieved 8 October 2021 from, <https://sphweb.bumc.bu.edu/otlt/MPH-Modules/SB/BehavioralChangeTheories/BehavioralChangeTheories2.html>.
16. Lawyer: Jab-or-no-job policy could have merit. Lead Stories | Jamaica Gleaner. (2021, April 18). Retrieved December 9, 2021, from <https://jamaica-gleaner.com/article/lead-stories/20210418/lawyer-jab-or-no-job-policy-could-have-merit>.
17. Live COVID-19 vaccination tracker-see vaccinations in real time! Retrieved December 14, 2021, from <https://covidvax.live/location/jam>.
18. Managing Jamaica's COVID-19 vaccine rollout digitally. (2021). Retrieved 8 October 2021, from <https://www.unicef.org/jamaica/stories/managing-jamaicas-covid-19-vaccine-rollout-digitally>.
19. MoghadasSM; VilchesTN; ZhangK; WellsCR; ShoukatA; SingerBH; MeyersLA; NeuzilKM; L angleyJM; FitzpatrickMC; Galvani AP; (n.d.). *The impact of vaccination on covid-19 outbreaks in the United States*. Clinical infectious diseases: an official publication of the Infectious Diseases Society of America. Retrieved September 29, 2021, from <https://pubmed.ncbi.nlm.nih.gov/33515252/>.
20. Naming the coronavirus disease (COVID-19) and the virus that causes it. (2021). Retrieved 11 February 2020, from [https://www.who.int/emergencies/diseases/novel-coronavirus-2019/technical-guidance/naming-the-coronavirus-disease-\(covid-2019\)-and-the-virus-that-causes-it](https://www.who.int/emergencies/diseases/novel-coronavirus-2019/technical-guidance/naming-the-coronavirus-disease-(covid-2019)-and-the-virus-that-causes-it).
21. Nikolovski, J., Koldijk, M., Weverling, G. J., Spertus, J., Turakhia, M., Saxon, L., Gibson, M., Whang, J., Sarich, T., Zambon, R., Ezeanochie, N., Turgiss, J., Jones, R., Stoddard, J., Burton, P., & Navar, A. M. (2021). Factors indicating intention to vaccinate with a COVID-19 vaccine among older U.S. adults. *PLOS ONE*, 16(5). <https://doi.org/10.1371/journal.pone.0251963>.
22. No vaccination deaths in Jamaica. (2021, October 1). Retrieved October 13, 2021, from <https://www.moh.gov.jm/updates/coronavirus/covid-19-vaccination-tracker/>.
23. NPR. (2021, April 18). More women are getting the coronavirus vaccine than men. NPR. Retrieved December 10, 2021, from <https://www.npr.org/2021/04/18/988483542/more-women-are-getting-the-coronavirus-vaccine-than-men>.
24. Peng, M. (2020, July 04). Outbreak of covid-19: An emerging global pandemic threat. Retrieved December 13, 2021, from <https://www.sciencedirect.com/science/article/pii/S0753332220306922>.
25. Rea, L. M., & Parker, R. A. (2014). *Designing and conducting survey research: A comprehensive guide*. Jossey-Bass.
26. Safety of COVID-19 Vaccines. (2021). Retrieved 8 October 2021, from <https://www.who.int/news-room/feature-stories/detail/safety-of-covid-19-vaccines>.
27. Solís Arce, J., Warren, S., Meriggi, N., Scacco, A., McMurry, N., Voors, M., Omer, S. (2021, July 16). Covid-19 vaccine acceptance and hesitancy in low- and middle-income countries. Retrieved October 06, 2021, from <https://www.nature.com/articles/s41591-021-01454-y>.

28. Spence, C. (2021). Worker overcomes hesitancy to take covid-19 vaccine. Jamaica Information Service. Retrieved December 14, 2021, from <https://jis.gov.jm/features/worker-overcomes-hesitancy-to-take-covid-19-vaccine/>.
29. Understanding Viral Vector COVID-19 Vaccines. (2021). Retrieved 13 October 2021, from <https://www.cdc.gov/coronavirus/2019-ncov/vaccines/different-vaccines/viralvector.html>
30. Urich, A. (2017) The Health Belief Model- Methods for Stress Management. PennState. Retrieved 8 October 2021 from, <https://psu.pb.unizin.org/kines082/chapter/the-health-belief-model>.
31. Weis, J. (2021, May 12). Why Did These Vaccine-Hesitant People Decide to Get the COVID-19 Vaccine? Salud America. <https://salud-america.org/why-did-these-vaccine-hesitant-people-decide-to-get-the-covid-19-vaccine/>
32. World Health Organization. (2020). Coronavirus disease (COVID-19): Health and safety in the workplace. Washington DC: WHO. <https://www.who.int/news-room/questions-and-answers/item/coronavirus-disease-covid-19-health-and-safety-in-the-workplace>.
33. World Health Organization. (n.d.). Coronavirus disease (covid-19): Vaccines. World Health Organization. Retrieved December 13, 2021, from [https://www.who.int/news-room/questions-and-answers/item/coronavirus-disease-\(covid-19\)-vaccines](https://www.who.int/news-room/questions-and-answers/item/coronavirus-disease-(covid-19)-vaccines).