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A Comparative Analysis of The Behavior of Vaccinated and Unvaccinated Jamaicans Against the COVID-19 Virus

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ABSTRACT

COVID-19 pandemic has affected the world on a global scale. In order to prevent the spread of the Coronavirus disease, manufacturing of COVID-19 vaccines has become a focal point. Vaccination hesitancy is one of the significant obstacles to global health. This study seeks to examine the perception of those vaccinated and unvaccinated against Coronavirus disease (COVID-19) in Jamaica. A quantitative survey research was designed to collect data from Jamaicans across the 14 parishes of Jamaica. Non-probability sampling was used to obtain the data from 1073 respondents. A standardized survey was created in Google forms to collect the data (web-based) in the form of a questionnaire containing fifteen (15) closed-ended questions. The data was converted from Google Forms using the Statistical Packages for the Social Sciences (SPSS) for Windows, Version 25.0, with 95% confidence interval. The survey was distributed face to face, and via various social media platforms in all 14 parishes of Jamaica. Using a population size of 2,727,503 as of 2018, a confidence interval of 95%, and a margin of error of 3% the sample size was determined to be 1073. Findings revealed that, the majority of the respondents were female (55.9%, n=600), while the minority were males (44.1%, n=473). The majority of respondents (20.0%, n=215) were from Kingston and St. Andrew, and 15.1% of the respondents from St. Catherine. This study has shown that Jamaicans are indecisive when it comes to taking the COVID-19 vaccination.

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Introduction

Coronavirus Disease 2019 or COVID-19 is caused by a newly discovered coronavirus, known as SARS- CoV-2 [1-3]. It is a zoonotic virus of unknown origin that causes acute respiratory illness that can lead to severe damage to the body, or even death. This new infection is believed to have emerged from Wuhan City, Hubei Province, China in December 2019 [1]. On March 11 2020, the World Health Organization (WHO) declared COVID-19 as a pandemic. According to Machingaidze and Wiysonge (2021) as of June 29, 2021 there had been more than 181 million reported infections with SARS-CoV-2 and nearly 4 million reported deaths from COVID-19 and [4]. indicated that as of January 24, 2022, the figure had reached 349,641,119 confirmed cases and 5,592,266 deaths.

The rate of infection has not seemed to slow down in the majority of the affected countries, and varying degrees of lockdowns have been used in an effort to contain the spread of the virus. The COVID-19 pandemic has affected the world at large and all aspects of daily lives. To offer protection from the virus, the world is racing to create and manufacture COVID-19 vaccines. Developing a vaccine against COVID-19 is considered an integral step to ending the pandemic. In May 2020, the 73rd World Health Assembly issued a resolution recognizing the role of extensive immunization as a global public-health goal for preventing, containing and stopping transmission of SARS-CoV-2.

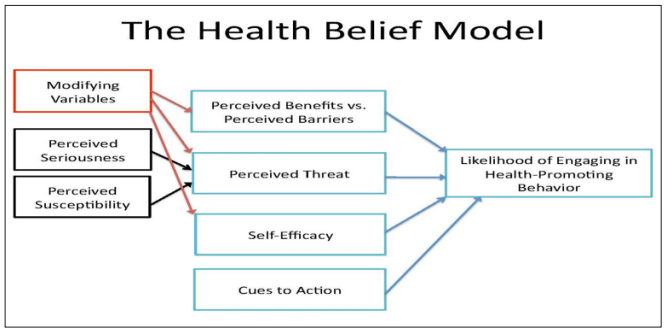
Globally, there are now more than 125 vaccine candidates, 365 vaccine trials ongoing, and 18 vaccines against COVID-19 approved by at least one country. However, it is believed that public acceptance is based on individuals' perceptions toward the vaccines [5,6]. A review of the literature unearthed no study in the Caribbean that has compared the perspectives of the vaccinated and

the unvaccinated peoples. Therefore, this study seeks to evaluate the perception of vaccinated and unvaccinated Jamaicans to the COVID-19 disease. Data collected were analyzed to determine if there is a significant difference between these viewpoints. This research aims to provide a framework to better understand the varying viewpoints of Jamaicans as it relates to COVID-19, and to help provide necessary information to various groups and stakeholders about the same.

Theoretical Framework

The Health Belief Model (HBM) is a tool that scientists use to try and predict health behaviors. The model is based on the theory that a person's willingness to change their health behaviors is primarily due to their health perceptions [7-10]. The Health Belief Model is used to predict the likelihood of individuals engaging in risk reduction or disease prevention. According to this model, one's health behaviour is influenced by perceived susceptibility, perceived benefits, perceived barriers, perceived severity, and self-efficacy (see Figure 1).

Figure 1: Health Belief Model
Source:[11].



This includes one's beliefs surrounding personal susceptibility to disease, seriousness of the disease, benefits of taking action, and barriers to behavioral change (see Figures 1 & 2). The particular action undertaken is determined by the evaluation of the possible alternatives [10]. empirically examined the Health Belief Model, and the statistical associations are shown in Figures 1 & 2.

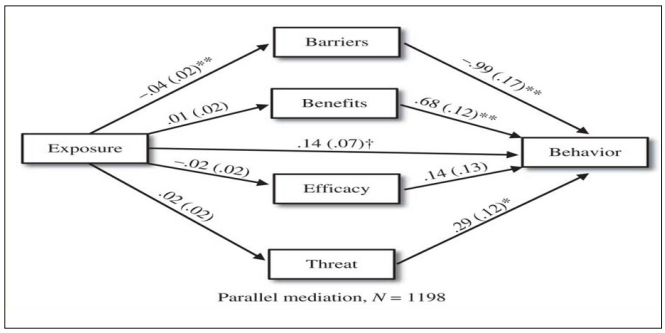


Figure 1: The Health Belief Model as an explanatory framework

Parallel mediation model. Significant differences: †p < .10, *p < .05, **p < .01
Source:[10].

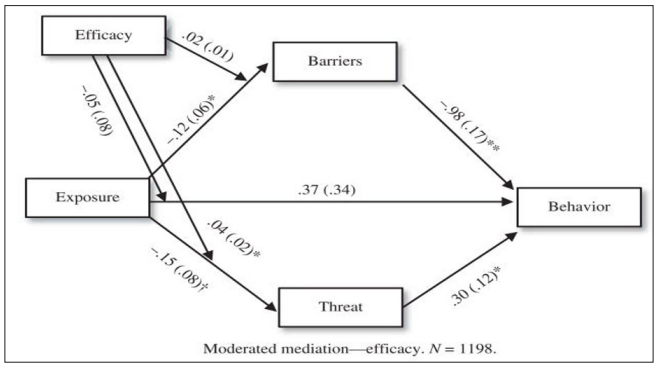


Figure 2: The Health Belief Model as an explanatory framework

Moderated mediation model with self-efficacy as a moderator. Significant differences: †p <. 10, *p < .05, **p < .01).
Source: [10].

Hence, individuals are likely to follow a particular health behavior if they believe themselves to be susceptible to a particular condition or illness which they consider to be serious, and believe the benefits of the behavior undertaken to counteract the condition or illness outweigh the costs. As such, this theory is aptly fitting to explain the behavior of those who are vaccinated and unvaccinated against the COVID-19 virus in Jamaica.

Literature Review

This research aims to analyze the comparison of the perception of those vaccinated and unvaccinated against the COVID-19 disease. The COVID-19 pandemic is currently the most pressing global health issue. The disease has led to 1.75 million deaths worldwide , and exerted an unprecedented impact across every aspect of life globally [12]. Effective interventions are key to controlling COVID-19 spread, and vaccinations are considered a routine and effective measure for controlling infectious diseases [13,14]. Wang, Yang, Jin, & Lin (2021). It is very contagious and has quickly spread around the world. COVID-19 most often causes respiratory symptoms that can feel much like a cold, a flu, or pneumonia. COVID-19 may attack more than your lungs and respiratory system [15].

Perception is a subjective process; therefore, different people may perceive the same environment differently based on what particular aspects of the situation they choose to selectively absorb, how they organize this information and the manner in which they interpret it to obtain a grasp of the situation [16]. With COVID-19 cases flooding emergency rooms and deaths on the rise among the unvaccinated, Northeastern researchers wanted to know why a sizable portion of the United States remained wary of or flat-out opposed to vaccines [17].

The first issue of the unimmunized people is the wide range of concern on the potential risk of the vaccines, including possible effects such as blood clots and heart inflammation, were the top reasons given by more than half (56%) of the unvaccinated people who participated in a study. 15 percent of unvaccinated respondents reported a deep mistrust of government and other institutions that vouch for the safety of vaccines followed by 10% who do not believe the coronavirus poses risk to them. The reasons that some respondents gave were as follow. "I don't always trust what the government says". "I do not trust the government as a Black woman, they are pushing a little too hard for people to take this when other infectious diseases are treated as cash cows" [17].

In all, more than 1,000 people both vaccinated and unvaccinated participated in the national survey; 33 percent of which said they had not yet received their shots. Most of those (18 percent) responded with a hard and fast "no" when asked if they would get inoculated; 15 percent said they were at least open to the idea. The survey was conducted over the summer, weeks before the Food and Drug Administration gave full approval to Pfizer's vaccines. But the FDA action isn't expected to trigger a rush to get shots, says David Laser, university distinguished professor of political science and computer sciences at Northeastern, and one of the researchers who conducted the study [17].

An article from the Jamaica Gleaner published in December 2020 stated, it is emerging that the Ministry of Health and Wellness might be facing anti-vaxxer pushback from front-line staff who are one of the key groups first to be inoculated. Front-line staff might complicate what could be a logistical nightmare for the Government as doctors, nurses, porters, guards, and others in the hospital and health centre network interact with patients and present the greatest threat as transmitters or victims of viral outbreak. Dr Gareth Fairclough of the University Hospital of the West Indies (UHWI) has already made up his mind to take the vaccine. He took the position based on the fact that the vaccine has been passed by the World Health Organization (WHO) and the United States Food and Drug Administration (FDA). "Some people complain of side effects, but everything has side effects. There is a side effect profile for every medication," Fairclough told The Gleaner. "Some people react differently, but it has been cleared to say that it works and can be distributed." But the thought of a vaccine was not so easily accepted among others. One administrator at the UHWI, who wished to remain anonymous, said he didn't trust the vaccine and wouldn't take it for fear of undesirable side effects [18].

A wide array of factors may influence the perceptions of individuals, and influence their willingness to take the COVID-19 vaccine. A study conducted in Bangladesh on 13 October 2021 found that the knowledge of more than half of the respondents regarding the COVID-19 vaccination was low [19]. Additionally, the study showed that respondents who indicated a higher educational level tended to be more knowledgeable about the vaccine. In addition, a study conducted in Malaysia in December 2020 found that 62% of their respondents were found to have poor knowledge about the COVID 19 vaccine [20]. The study found that individuals with a higher educational background, as well as females, and individuals who fall within a lower age group. The lack of knowledge about the vaccination may have an impact on individuals' perception of the COVID-19 vaccine, and willingness to get vaccinated. In a separate study conducted among healthcare workers in Egypt, it was found that a major reason for vaccination hesitancy in the sampled respondents was the absence of enough clinical trials, as well as a fear of the believed side effects [21].

Method and Materials

This research employed an explanatory research design, using convenience sampling or non-probability sampling. Inclusion criteria was: individuals over the age of 18 that can give informed consent and are Jamaicans. Exclusive criteria were: individuals under the age of 18 and who are not Jamaicans. The research was conducted to do a comparative analysis of the perceptions of those vaccinated and unvaccinated against COVID-19 disease in Jamaica. A standardized cross-sectional method was employed, utilizing a web-based survey. Data was collected through questionnaires containing fifteen (15) closed-ended questions.

The survey was distributed face-to-face, and via various social media such as WhatsApp, Email, Facebook and Instagram. Using a population size of 2,727,503 as of 2018, a confidence interval of 95%, and a margin of error of 2.99%, the sample size was determined to be 1074. Anonymity and confidentiality were maintained, as no identifiable personal information was required from the respondents. Before the data was collected for this study, a team of data collectors was assembled and trained. In addition, each team member had to successfully complete a course in Ethics from The Global Health Network before s/he was eligible to collect data.

Data was collected across the 14 parishes of Jamaica. Each research team member was assigned selected parishes in Jamaica, and s/he was responsible for collecting data across various communities in those parishes. Data was collected by way of a web-based and a face-to-face approach. In order to collect data from vaccinated Jamaicans, the team members visited the 'Blitz [vaccination] site' across the island. Some vaccinated Jamaicans were located at their home, and they also provided data for this study.

In the description of the survey distributed, it was indicated that submission of the questionnaire conveyed consent to use the data for this purpose. The Statistical Packages for the Social Sciences (SPSS version 25.0 software for windows) was used to analyze, and evaluate the findings, presenting them in a diagrammatic format. The statistical tools utilized were 1) percent, 2) cross tabulations, and 3) tables. The level of significance for this research was determined to be 5%.

Findings and Analysis of Results

Table 1 presents demographic characteristics of the sampled respondents (n=1073). The majority of the respondents were females (55.9%, n=600), between the ages of 18-24 years (31.8, n=341), and resided in Kingston and St. Andrew (20.0%, n=215).

Table 1: Demographic Characteristics of the Sampled Respondent, n= 1,073

Details	% (n)
Gender	
Male	44.1(473)
Female	55.9 (600)
Age Cohort	
18-24	31.8 (341)
25-34	21.7 (233)
35-44	17.5 (188)
45-54	15.0 (16.1)
55-64	7.2 (77)
65 and over	6.8 (73)
Area of Residence	
Kingston & St. Andrew	20.0 (215)
St. Mary	6.0 (64)
St. Thomas	11.1 (119)
Portland	4.1 (44)
St. Elizabeth	14.1(151)
Westmoreland	5.3 (57)
Hanover	3.1 (33)
Manchester	8.5 (91)
St. James	5.6 (60)
Trelawny	2.3 (25)
St. Ann	1.2 (13)
Clarendon	3.6 (34)
St. Catherine	15.1 (162)

Table 2 presents the perception of vaccinated and unvaccinated individuals on matters relating to the COVID-19 disease of the sampled respondents, n =1073. Majority of the respondents indicated that the COVID-19 disease exists (79.1%, n=849), COVID-19 vaccination of humans is effective (56.1%, n=602),the data shows that for those who have not been vaccinated against COVID-19 they represent (40.9%, n=439), and reported that they are not afraid of taking the COVID-19 vaccine (43.2%, n=464).

Table 2: Perception of vaccinated and unvaccinated of the sampled respondents, n=1,073

Details	% (n)
Do you think COVID-19 disease exists?	
Yes	79.1 (849)
Unsure	11.6 (125)
No	9.2 (99)
Do you believe the overall COVID-19 vaccination of humans is effective?	
Yes, Fully	56.1 (602)
Yes, Partially	22.2 (238)
No	21.7 (233)
Have you been vaccinated for the COVID-19 disease?	
Yes, fully	38.7 (415)
Yes Partially	20.4 (219)
No	40.9 (439)
Are you afraid to take the COVID-19 vaccine because of its side effects?	
Yes	36.6(268)
No	63.4(464)

Table 3 presents the perception on matters relating to COVID-19 vaccination among a group of sampled respondents, n=1073. The majority of the respondents indicated that their religious belief had nothing to do with taking the COVID-19 vaccine (82.8%, n=728), 35.6%(385) do not trust the information provided by the Government compared to 37.4%(402) who do trust the information provided by the government, while 26.7%(286) of respondents are unsure, 48.7% (523) do not believe the COVID-19 vaccine is causing people to die, and 85.3%(915) do not believe it is the mark of the beast.

Table 3: Perception on matters relating to COVID-19 vaccination for the sampled respondent, n=1,073

Details	% (n)
Have your religious beliefs discouraged you from taking the COVID-19 vaccine?	
Yes	17.2 (151)
No	82.8 (728)
How much do you trust the information provided by the Government about COVID-19 disease?	
Distrust: 1 – least	26.2 (281)
2	9.7(104)
Unsure: 3	26.7(286)
Trust: 4	17.5(188)
5- highest	19.9(214)
Do you believe you require more information about the COVID-19 disease and its vaccine before getting vaccinated?	
Yes	46.6 (358)
No	53.4 (410)
Do you believe that the COVID-19 disease does more harm to the body than good?	
Strongly Agree	13.8 (148)
Agree	9.0 (97)
Neutral	29.6 (318)
Disagree	23.0 (247)
Strongly Disagree	24.5 (263)
Do you think people who are vaccinated spread the COVID-19 disease more than the unvaccinated?	
Strongly Agree	12.6 (135)
Agree	8.3 (89)
Neutral	27.2(292)
Disagree	24.8 (266)
Strongly Disagree	27.1 (291)
Do you feel safe around people who are not vaccinated?	
Yes	67.6 (725)
No	32.4 (348)
Do you believe taking the COVID-19 disease is causing people to die?	
Yes	25.1 (269)
Unsure	26.2 (281)

No	48.7 (523)
Do you believe COVID-19 is the mark of the beast?	
Yes	14.7(158)
No	85.3(915)

Table 4 presents a comparative analysis of those vaccinated and unvaccinated for COVID-19 disease among a group of sampled respondents, n=1073. 81.7% (339) of people who are fully vaccinated believe COVID-19 vaccine is effective compared to 21.6% (95) of those who are unvaccinated.

Table 4: Comparative analysis of those vaccinated and unvaccinated for COVID-19 disease of the sample respondents n=1,073

Details	Vaccinated and unvaccinated People			Total % (n)	χ2; P-value
	Yes, Fully	Yes, Partially	No		
	%(n)	%(n)	%(n)		
Gender					5.991; 0.012
Male	42.2 (175)	53.0 (116)	41.5 (182)	44.1 (473)	
Female	57.8 (240)	47.0 (103)	52.5 (257)	55.9 (600)	
Age Cohort					30.359; 0.001
18-24 years	34.2 (142)	24.7(54)	33.0 (145)	31.8 (341)	
25-34 years	18.1 (75)	21.0 (46)	25.5 (112)	21.7 (233)	
35-44 years	14.7 (61)	26.5 (58)	15.7 (69)	17.5 (188)	
45-54 years	15.4 (64)	16.4 (36)	13.9 (61)	15.0 (161)	
55-64 years	8.7 (36)	5.5 (12)	6.6 (29)	7.2 (77)	
65+ years	8.9 (37)	5.9 (13)	5.2 (23)	6.8 (73)	
Parish of Residence					77.628; 0.001
Kingston and St. Andrew	22.4 (93)	30.6 (67)	12.5(55)	20.0(215)	
St. Mary	6.3(26)	7.8(17)	4.8(21)	6.0(64)	
St. Ann	1.0(4)	1.8(4)	1.1(5)	1.2(13)	
Clarendon	2.9(12)	4.1(9)	4.1(18)	3.6(39)	
St. Catherine	16.4(68)	6.8(15)	18.0(79)	15.1(162)	
St. Thomas	7.2(30)	11.9(26)	14.4(63)	11.1(119)	
Portland	3.9(16)	3.2(7)	4.8(21)	4.1(44)	
St. Elizabeth	15.2(63)	16.4(36)	11.8(52)	14.1(151)	
Westmoreland	4.8(20)	4.6(10)	6.2(27)	5.3(57)	
Hanover	2.2(9)	4.6(120)	3.2(14)	3.1(33)	
Manchester	9.6(40)	4.6(10)	9.3(41)	8.5(91)	
St. James	5.8(24)	0.9(2)	7.7(34)	5.6(60)	
Trelawny	2.4(10)	2.7(6)	2.1(9)	2.3(5)	
Do you think COVID-19 disease exists?					151.377; 0.001
Yes	94.2(391)	85.4(187)	61.7(271)	79.1(849)	
No	2.7(11)	2.7(6)	18.7(82)	9.2(99)	
Unsure	3.1(13)	11.9(26)	19.6(86)	11.6(125)	
Do you believe the overall COVID-19 vaccination of humans is effective?					384.874; 0.001
Yes	81.7(339)	76.7(168)	21.6(95)	56.1(602)	
No	7.5(31)	3.7(8)	44.2(194)	21.7(233)	
Unsure	10.8(45)	19.6(43)	34.2(150)	22.2(28)	
Do you believe that taking the COVID-19 vaccine is causing people to die?					358.060; 0.001

Yes	10.8(208)	7.3(16)	47.4(16)	25.1(269)	
No	75.2(312)	64.4(141)	15.9(70)	48.7(523)	
Unsure	14.0(58)	28.3(62)	36.7(161)	26.2(281)	
Have your religious beliefs discouraged you from taking the COVID-19 vaccine?					113.097; 0.001
Yes	7.2(27)	2.5(4)	33.2(120)	17.2(151)	
No	92.4(330)	97.5(157)	66.8(241)	82.8(728)	

Table 5 presents a comparative analysis of those vaccinated and unvaccinated for COVID-19 disease among a group of sampled respondents, n=1073. 24.5% (263) of the respondents strongly disagreed that the COVID-19 vaccine does more harm to the body compared to the 13.8% (148) of respondents who strongly agreed.

Table 5: Comparative analysis of those vaccinated and unvaccinated for COVID-19 disease of the sampled respondents, n=1,073

Details	**Vaccinated and unvaccinated People**			**Total**	**χ2; P-value**
	Yes, Fully	**Yes, Partially**	**No**		
	%(n)	**%(n)**	**%(n)**		
How much do you trust the information provided by the Government about COVID-19 disease?					358.980; 0.001
Mistrust:1- least	8.7(36)	11.0(24)	50.3(221)	26.2(281)	
2	5.5(23)	7.8(17)	14.6(64)	9.7(104)	
Unsure: 3	24.6(102)	32.4(71)	25.7(113)	26.7(286)	
Trust: 4	26.5(110)	20.5(45)	7.5(33)	17.5(188)	
5-highest	34.7(144)	28.3(62)	1.8(8)	19.9(214)	
Do you believe that you require more information about COVID-19 disease and its vaccine before getting vaccinated?					201.898; 0.001
Yes	28.2(81)	15.2(21)	74.6(256)	46.6(358)	
No	71.8(206)	84.8(117)	25.4(87)	53.4(410)	
Do you believe that the COVID-19 vaccine does more harm to the body than good?					455.588; 0.001
Strongly Agree	1.9(8)	5.0(11)	29.4(129)	13.8(148)	
Agree	2.2(9)	2.3(56)	18.9(83)	9.0(97)	
Neutral	21.0(87)	25.6(56)	39.9(175)	29.6(318)	
Disagree	31.3(130)	37.9(83)	7.7(34)	23.0(247)	
Strongly Disagree	43.6(181)	29.2(64)	4.1(18)	24.5(263)	
Do you feel safe around persons who are not vaccinated for COVID-19?					110.021; 0.001
Yes	49.4(205)	71.7(157)	82.7(363)	67.6(725)	
No	50.6(210)	28.3(62)	17.3(76)	32.4(348)	
Do you think people who are vaccinated spread the COVID-19 virus more than the unvaccinated?					327.660; 0.001

Strongly Agree	4.3(18)	4.1(9)	24.6(108)	12.6(135)	
Agree	3.4(14)	2.3(5)	15.9(70)	8.3(89)	
Neutral	18.1(75)	21.5(47)	38.7(170)	27.2(292)	
Disagree	30.6(127)	35.2(77)	14.1(62)	24.8(266)	
Strongly Disagree	43.6(181)	37.0(81)	6.6(29)	27.1(291)	
Are you afraid to take the COVID-19 vaccine because of its side effects?					255.849; 0.001
Yes	13.0(34)	6.5(9)	67.8(225)	36.6(268)	
No	87.0(227)	93.5(130)	32.2(107)	63.4(464)	
Do you believe that the COVID-19 vaccine is the mark of the beast?					82.107; 0.001
Yes	7.7(32)	4.6(10)	26.4(116)	14.7(158)	
No	92.3(383)	95.4(209)	73.6(323)	85.3(915)	

Limitation

Based on the protocols of established by the Ministry of Health and Wellness for COVID-19, the researchers were unable to conduct wide-scale face-to-face probability sample data collection. In addition, data was collector from Jamaicans ages 18 years and older because of ethical issues, and this limits the findings to only people of studied population.

Discussion

The practice of vaccination (immunization) dates back to hundreds of years ago. According to the World Health Organization (2021), vaccination is a simple, safe, and effective way of protecting you against harmful diseases, before you come into contact with them. It uses your body's natural defenses to build resistance to specific infections and makes your immune system stronger. In today's society, infectious diseases can easily cross borders, and infect anyone who is not protected. Therefore, the goal of vaccination is to train your immune system to create antibodies, just as it does when it's exposed to a disease. However, because vaccines contain only killed or weakened forms of germs like viruses or bacteria, they do not cause the disease or put you at risk of its complications [22]. The key reasons to get vaccinated are to protect ourselves and to protect those around us, as not everyone can be vaccinated. Such individuals include very young babies, and those who are seriously ill or have certain allergies. For these reasons, they depend on others being vaccinated to ensure they are also safe from vaccine-preventable diseases.

In this research, vaccination was looked at in order to get an understanding of the perception of those vaccinated and unvaccinated against the COVID-19 disease across Jamaica. Data was collected from 1073 participants. Table one of the sampled respondents n=1073, the majority were females (55.9%, n=600) between the ages of 18-24 years compared to the males (44.1%, n=473), and resided in Kingston and St. Andrew (20.0%, n=215) in Jamaica. Hence, the female data was positively skewed with the goal in mind to investigate the demographic of the perception of those vaccinated and not vaccinated against the COVID-19 disease. Table 2 presents the perception of vaccinated and unvaccinated individuals on matters relating to the COVID-19 disease of the sampled respondents, n =1073. Majority of the respondents indicated that the COVID-19 disease exists (79.1%, n=849), COVID-19 vaccination of humans is effective (56.1%, n=602), have not been vaccinated against COVID-19 (40.9%, n=439), and reported that they are not afraid of taking the COVID-19 vaccine (43.2%, n=464).

Moreover, table 3 presents the perception on matters relating to COVID-19 vaccination among a group of sampled respondents, n=1073. Majority of the respondents indicated that their religious belief had nothing to do with taking the COVID-19 vaccine (82.8%, n=728), 35.6%(385) do not trust the information provided by the Government compared to 37.4%(402) who do, while 26.7%(286) of respondents are unsure, 48.7% (523) do not believe the COVID-19 vaccine is causing people to die, and 85.3(915) do not believe it is the mark of the beast.

While table 4 and 4.1 presents a, cross tabulation showing the comparative analysis of those vaccinated and unvaccinated for COVID-19 disease among a group of sampled respondents, n=1073. 81.7% (339) of respondents who are fully vaccinated believe COVID-19 vaccine is effective compared to 21.6% (95) of those who are unvaccinated. 24.5% (263) of the respondents strongly disagreed that the COVID-19 vaccine does more harm to the body compared to the 13.8% (148) of respondents who strongly agreed. The findings revealed that there is no statistical association with the independent variable ($\chi 2$ critical is 384.874 =, > $\chi 2$ obtained 9.488, P= 0.001). Hence, we reject the null hypothesis. The Theoretical Framework of The Health Belief Model (HBM) is a tool that scientists use to try and predict health behaviors.

It works with the belief that there are specific factors that influence an individual's health seeking behavior. These factors are perceived severity of the condition, perceived susceptibility to an illness, perceived benefits of healthcare seeking behavior, barriers to seeking health care that the individual faces, cues to action that encourage acceptance of healthcare, and self-efficacy. The Health Belief Model (HBM) posits that messages will achieve optimal behavior change if they successfully target perceived barriers, benefits, self-efficacy, and threat [19]. This supports the thought that individuals who are vaccinated believe that the COVID-19 vaccine is effective and the only way to end the pandemic. Since the onset of the Coronavirus disease, the rate of the infection has not slowed down, as a result of this the development and manufacture of vaccines is the focal point in order to deploy safe and effective vaccines to the world at large. Equitable access to safe and effective vaccines is critical to the ending of the COVID-19 pandemic [23]. The research clearly shows that Jamaicans are

indecisive on getting the COVID-19 vaccine.

Conclusion

There is a high COVID-19 vaccine hesitancy among Jamaicans, and this study has provided critical information from the vantage point of vaccinated and unvaccinated peoples. The reality is, 67.8% of unvaccinated believed that the COVID-19 vaccines do have side-effects compared to 13.0% of the fully-vaccinated, and 6.5% of the partially vaccinated Jamaicans. Furthermore, 26. % of the unvaccinated believed that COVID-19 vaccines are the 'Mark of the Beast' compared to 7.7% of the fully-vaccinated, and 4.6% of the partially vaccinated people. In addition, 50.6% of the fully-vaccinated people indicated that they feel unsafe among unvaccinated people compared to 28.3% of those who are partially vaccinated, and 17.3% of the unvaccinated people. The current research has clearly shown that Jamaicans are desirous of being vaccinated against COVID-19; but they are influenced by non-scientific information that are promulgated by some religious sects as well as conspiracy theorists [24].

Recommendations

The findings that emerged from this study can be used by policy makers to directly design social intervention programs to include the engagement of scientists (virologists, medical practitioners, and epidemiologists) based on many of the issues of the study.

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