Acceptance and Attitudes Towards Covid-19 Vaccines Among Student and Staff in UTHM Pagoh

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Abstract: COVID-19 vaccine has become important during the pandemic outbreak in 2019. It has been developed by researchers in a short period of time which then raises questions about its effectiveness among the Malaysian population. This technical paper is about the acceptance and attitudes towards Covid-19 vaccines among students and staff in Universiti Tun Hussein Onn (UTHM) Pagoh as there are some people who may be reluctant to take the COVID-19 vaccine. The main objective of this study is to find out the percentage of acceptance, evaluate the attitudes and measure the level of knowledge about COVID-19 vaccine among students and staff in UTHM Pagoh. A cross-sectional study of 273 respondents among students and staff of UTHM Pagoh was carried out through a questionnaire in a Google Form consisting of four sections. There is demographic, acceptance, attitude and level of knowledge toward COVID-19. The attitude section in this focus on confidence, complacency and convenience of respondents toward COVID-19 vaccine. The questionnaire was distributed via WhatsApp and Gmail which then were analysed using SPSS software. The result of this study shows that the majority are willing to take the COVID-19 vaccine despite the fact that it has a less testing period compared to other vaccines. Their attitude toward vaccine confidence, importance, and satisfaction is also very positive. Also, they show high level of knowledge in COVID-19 vaccine. Hopefully, this study will be improved in the future based on scope of study and other factors that affect the confidence level among Malaysian populations.

Keywords: Acceptance, Attitude, COVID-19, Knowledge, Vaccine

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1. Introduction

COVID-19 is a respiratory disease caused by Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2), a newly discovered coronavirus species that spreads between humans through respiratory droplets produced from the mouth or nose of an infected person when they cough, sneeze or talk [1]. COVID-19 was declared a pandemic by WHO 71 days after the outbreak began on March 11, 2020. The pandemic has spread to several countries and continents, affecting a large number of people [2]. In order to decrease the disease's transmissibility, most nation used non-pharmaceutical treatment (NPIs) such as imposing mask policies, hand sanitization, social distance, travel restrictions, school closures, and partial or total lockdown [3] but maintaining these actions is not practicable in the long term. Since there is currently no specific treatment for coronavirus infection, a massive portion of the population must be immune to the virus to terminate the pandemic. Vaccination is the safest approach to accomplish this. Vaccines contain antigens that stimulate the immune system and help the body develop immunity to specific infectious illnesses [4].

In less than a year after the pandemic began, several research teams jumped to the challenge and created vaccinations that protect against SARS-CoV-2, the virus that causes COVID-19. Malaysia, as one of the countries affected by the pandemic, is also not left behind in taking measures to curb the spread of COVID-19 disease by implementing the National COVID-19 Immunization Program. Malaysia has recorded approximately 2 million COVID-19 infections as of 15th September 2021, making it one among the most impacted nations in the Western Pacific area. As a result, implementing effective COVID-19 vaccination strategies was a vital step [5].

Vaccination acceptance is also not synonymous with vaccine uptake. Vaccine acceptance is described as an individual's or a group's decision to accept or refuse vaccination when given the option [6-7]. Acceptance can be active (adherence by a well-informed public who recognizes the value and necessity of a vaccination) or passive (compliance by a public that defers to recommendations and societal pressure). The proportion of a population that has gotten a given vaccination is referred to as vaccine uptake. Vaccine uptake does not imply vaccine acceptance since it ignores the option to accept or refuse the vaccine, as well as the reality that some people may choose to vaccinate despite serious questions and concerns. As a result, vaccination uptake rates cannot be used to determine a country's or subgroup's level of vaccine acceptance or reluctance [6].

Also, there is vaccine complacency. Vaccine complacency is referred to the perception of personal risk. Individuals are complacent, believing that if they have a minimal or no risk of contracting, becoming ill, or dying from the virus, there is no need for the vaccine [8]. However, it will affect if one's knowledge is limited. Knowledge about vaccines is crucial since vaccines have been viewed as a key for reducing the burden of infectious disease, as well as it is associated with mortality, morbidity and related health-care. Lack of understanding about the COVID-19 vaccine may have a negative impact on decision-making, indicating the important need to educate the public to enhance their knowledge and awareness of the vaccine [9].

The purpose of this study is to investigate the level of knowledge, attitudes and acceptance of COVID-19 vaccine between staff and students in Universiti Tun Hussein Onn Malaysia (UTHM) Pagoh. The results of this study can also assess the main reasons why students and staff of UTHM refuse or accept the vaccine. It is critical to investigate their understanding, attitudes, and acceptance of the COVID-19 vaccination. Understanding the elements that influence vaccine acceptability is crucial for decision-making, devising varied strategies based on demographic and societal factors, and comprehending the subjectivities that influence vaccination decisions. These data help the government design a more successful strategy for fostering public confidence in the COVID-19 vaccine's safety and effectiveness and removing widespread suspicion of the vaccination. This research is crucial not only for existing vaccines but also for developing future vaccine program strategies.

However, relatively little research on attitudes and acceptance of COVID-19 has been undertaken in Malaysia, parallel with the ongoing national vaccination programs. As a result, the study has been conducted on UTHM students and staff can serve as a model and encouragement for future research.

2. Materials and Methods

This is a cross-sectional descriptive research design in which the conditions and potentially related factors are measured at a particular time for a particular population and the data is organized, summarized and presented in an informative numerical, graphical, and tabular method.

2.1 Materials

This study was conducted using an online tool called 'Google Form' and social media platforms, Whatsapp and Gmail to create and distribute the questionnaire and finally the data was analyzed using IBM SPSS Statistics 26 Version Software. This study has also involved the staff and students of UTHM Pagoh as a population which data can be collected.

2.2 Methods

Figure 1 shows the flowchart of the six steps in implementing this study. The population of this study was determined when the survey was conducted only among students and staff at UTHM Pagoh. The sample was narrowed down by random recruitment from a population that was divided into three stratum groups: 10% of the total staff equivalent to 38 respondents, 5% of the total degree students equivalent to 107 respondents; and 5% of the total diploma students equivalent to 132 respondents. There were 273 respondents in all. This stratified random sampling technique was chosen with the aim that the sampling would be evenly distributed at all levels to ensure that each subgroup in the population received a correct representation in the sample and minimize sample selection bias.
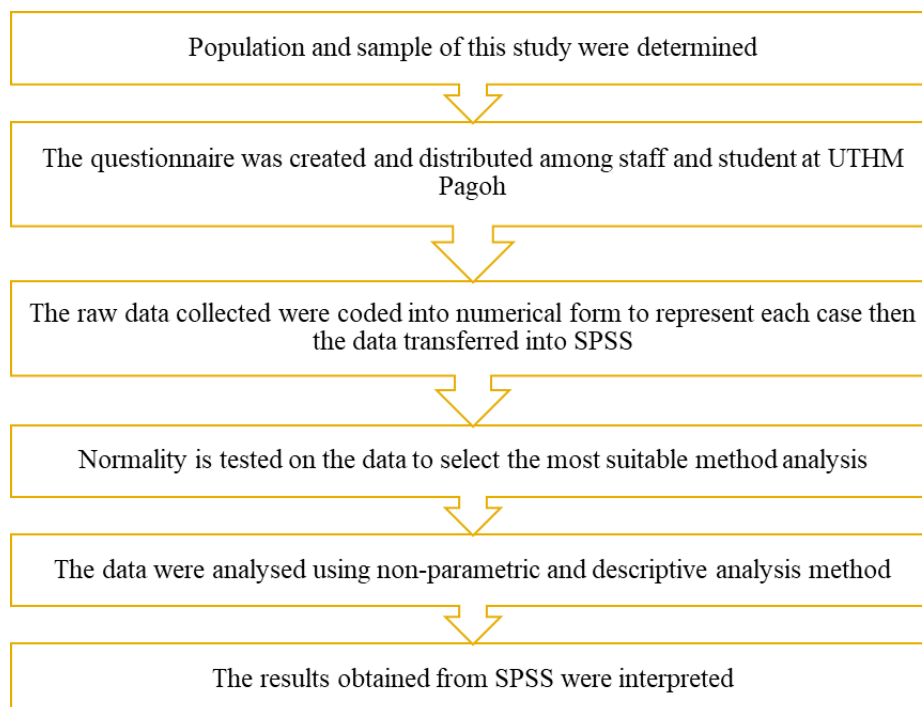

Figure 1: Flowchart of Sampling Analysis.

The set of questionnaires consists of four parts, the first section is to find out the demographic information, the historical background of COVID-19 and vaccination status of the respondents. The second section of the questionnaire is to evaluate the respondents' acceptance of the COVID-19 vaccine which contains five multiple-choice questions to determine whether to accept, doubt, or not accept and one multiple-choice question to find out the main reason respondents take the COVID-19 vaccine. The third section, which is further broken down into three sub-sections, that are confidence, complacency, and convenience that was referred from 3CS model proposed by Strategic Advisory Group of Experts (SAGE) on immunization which the type of question is in interval scale. The first subsection, "Confidence", examines respondents' confidence in the safety and efficacy of the COVID-19 vaccine and their trust in the government's ability to address the COVID-19 virus through the National COVID-19 Immunization Program (PICK). The second subsection, under "Complacency", examines how respondents view the risks posed by the COVID-19 virus and their perception of the value or importance of vaccination. The third sub-section, "Convenience", looks at how satisfied respondents are with the government's facilities for getting the COVID-19 vaccination, which is related to their acceptance and satisfaction with the vaccine. By providing ten true or false statements on the Covid-19 vaccine, the final section tests respondents' degree of knowledge about it. Those who received 0–5 right scores are considered to have poor knowledge, while those who received 6–10 right scores are considered to have good knowledge [10]. The Google Form link of the questionnaire was distributed randomly among students and staff at UTHM Pagoh via WhatsApp and Gmail to be answered until the number of respondents reaches the required sample target for each stratum.

After gathering enough information from the respondents, the raw data was converted into numerical form to represent the values in each case, and the input was then imported into SPSS. Next, using the SPSS computation process, the mean values of data for the same types of questions that fall under the same variable section were combined to generate a new variable for the next phase of the analysis. Then the normality test is conducted on the data for each variable to see if the distribution of data is normal or abnormal and thus determine the appropriate method of analysis carried out on the data, either parametric or nonparametric. Finally, data analysis and output interpretation were performed using nonparametric tests as the data distribution was abnormal. The method of descriptive analysis used is to describe or summarize data points (mean and frequency). The mean is used to determine the average values across all observations of a variable. The frequency is used to find out how often certain values of a variable phenomenon occur.

3. Results and Discussion

3.1 The Demographic Information, Historical Background of COVID-19 and Vaccination Status of The Respondents.

The total respondents were 273 people, consisting of 93 men (35%) and 180 women (66%). 38 people (14%) are staff, 108 people (40%) are degree students, and 127 people (46%) are diploma students. Of those, 31 people (11%) were married, while 242 people (89%) were not married. Only eight people, or 3% of those with chronic diseases, while the status of the vaccine is that all respondents have taken the vaccine, 198 people (73%) have completed 2 doses of vaccine with the booster and only 75 people (27%) have completed 2 doses of vaccine without a booster. 215 or 78.8% of respondents had been infected with COVID-19 or experienced seeing people around them become infected. A total of 96 people, or 35.2%, were still infected with the COVID-19 virus even after being vaccinated, and among them, only 4 people had severe symptoms.

3.2. COVID-19 vaccine acceptance

Table 1: COVID-19 Vaccine Acceptance

Statements	Answers	Frequency	Percentage (%)	Mean, SD
Do you agree to take the COVID-19 vaccine?	Yes	250	91.6	
	I am not sure	18	6.6	1.10, 0.359
	No	5	1.8	
Are you ready to be vaccinated or not?	Yes	244	89.4	
	I am not sure	17	6.2	1.15, 0.465
	No	12	4.4	
Do you take the COVID-19 vaccine on your own volition?	Yes	251	91.9	
	I am not sure	10	3.7	1.12, 0.445
	No	12	4.4	
I am willing to get the COVID-19 vaccine, even if I have to pay for it	Yes	131	48	
	I am not sure	88	32.2	1.72, 0.775
	No	54	19.8	
Do you recommend the COVID-19 vaccine to the community?	Yes	232	85	
	I am not sure	31	11.4	1.19, 0.475
	No	10	3.7	

From **Table 1**, respondents were given five statements in the acceptance section. The highest percentage from each question indicates students and staff of UTHM Pagoh are willing and accepting the vaccination. Nonetheless, some respondents are not sure and not willing to get vaccinated. Although the percentage has shown that 100% of respondents have taken COVID-19 vaccine, there were still respondents who were unsure and disagreed with the vaccination. It is declared that acceptance of the vaccine cannot be measured by vaccination itself. Next, if the vaccination implementation requires payment, there are still those who are willing (48%), unwilling to get the vaccine (19.8%) and not really sure about that (32.2%).

From this, it shows that if respondents agreed to take the vaccine even though they need to pay for the vaccination, it proved that they strongly agreed on vaccination but there are still those who are not willing to pay for the vaccination maybe due to some factor like financial matters or other reasons. In the last question, respondents recommended vaccines to the community (85%). This recommendation shows their strong acceptance on COVID-19 vaccine not only for themselves, but for others too. Overall mean ($\bar{x}$ = 1.2564) of this study shows the acceptance of COVID-19 vaccine among students and staff in UTHM Pagoh are astounding.

Table 2: Reason COVID-19 Vaccine Acceptance

Statements	Frequency	Percentage (%)
To reduce the risk of COVID-19 virus infection	134	49.1
To protect family and loved ones	76	27.8
Because of work demands	7	2.6
To go back to residential college	10	3.7
To cross the state or to go overseas	2	0.7
Hope things return to normal from the COVID-19 pandemic crisis	44	16.1

In this section, respondents are given six statements about the reason of COVID-19 vaccine acceptance. **Table 1** depends on **Table 2**; their acceptance can be presented from the percentage of willingness. The first statement showed the highest as they want to reduce the risk of COVID-19 virus infection (49.1%). This is the main reason why they are willing to take the vaccination. Next, it is also important to take vaccination in order to protect family and loved ones (27.8%) together with the high hope that things will return to normal from the COVID-19 pandemic crisis (16.1%). This section is a multiple-choice question, so that respondents can choose only one answer. There are some staff that take the vaccination because of work demands (2.6%), and students are required to have a vaccination certificate before they go back to residential college (3.7%).

3.3 Attitude regarding COVID-19 vaccine

3.3.1 Confidence

Table 3: COVID-19 Vaccine Confidence

Question	Mean	SD
How confident are you that the COVID-19 vaccine is safe to use?	3.95	0.819
How confident are you in the effectiveness of the COVID-19 vaccine?	3.93	0.815
How much do you trust in the government's ability to address the COVID-19 virus through the National COVID-19 Immunization Program (PICK)?	3.75	0.923

From **Table 3,** respondents were given three questions that must be answered based on a level of 1 to 5 regarding their confidence in the COVID-19 vaccine. The result showed that, on average, most respondents at UTHM Pagoh had great confidence in the safety and efficacy of the COVID-19 vaccine as well as confidence in the government-run PICK program's ability to combat the COVID-19 virus, with mean values of 3.95, 3.93, and 3.75 out of a total of 5 levels. According to the Vaccine Hesitancy Matrix, contextual and issue-specific factors such as personal, political, and community belief systems contributed to the confidence or mistrust of specific vaccine brands. Furthermore, the reasons for the remaining respondents who do not believe in the safety of the COVID-19 vaccine can be shown in **Figure 2**.

Figure 2 shows the highest frequency of the reasons respondents do not believe in the safety of the COVID-19 vaccine is concern about the side effects of vaccination, which is expressed by 56 respondents. According to a WHO statement, predicted vaccination side effects such as headache, weariness, muscle, and joint discomfort, fever and chills, and pain at the injection site are the most often reported adverse events with COVID-19 vaccines. These negative side effects are common, which is in line with what is previously known about vaccinations from clinical studies. Therefore, the authorities, especially the government, need to explain this matter more closely to the community so that they are confident and no longer worry about the side effects of the COVID-19 vaccination.
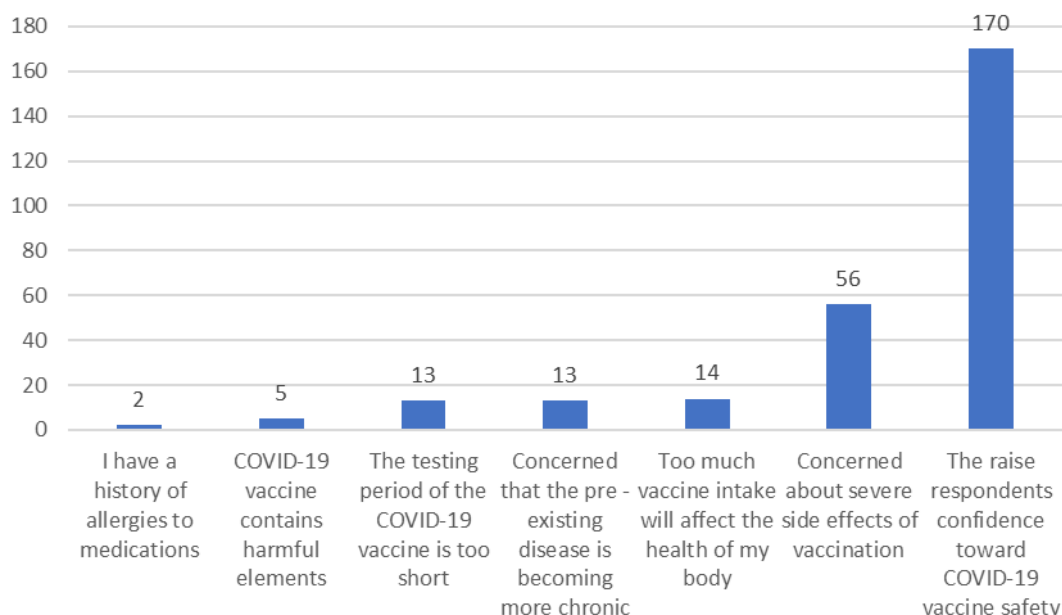

Figure 2: Frequency of the reason respondents are not confident toward COVID-19 safety.

Similarly, other factors that may raise doubts about the safety of the vaccine also need to be clarified. Another illustration is the COVID-19 vaccine, which was developed and tested more quickly than any other vaccine in history. This was made possible by improvements in vaccine technology,

improved scientific knowledge of the immune system's response to viruses, and previously unheard-of cooperation between the government and the private sector. Such information must be better understood by society. However, the frequency graph reveals that the respondents' level of trust in the vaccine's safety is significantly greater than that of the respondents who lack confidence, who total 170 respondents and make up 60.3% of the sample.

3.3.2 Complacency

Table 4: COVID-19 Vaccine Complacency

Statements	Mean	SD
I was worried about my risk and those closest to me getting infected with COVID-19	4.49	0.748
I agree the COVID-19 pandemic had a negative impact on my life and the lives of loved ones.	4.27	0.939
Taking the vaccine is important to reduce my risk and my loved ones of being infected with the COVID-19 virus.	4.38	0.805
Taking the vaccine is my responsibility to the community and the country in order to break the chain of the COVID-19 epidemic.	4.49	0.692

According to statements 1 and 2 in **Table 4**, UTHM students and staff, on average, have a high awareness of the risk of contracting COVID-19 and a high level of agreement that the COVID-19 crisis negatively impacted their lives and the lives of their loved ones, with mean values of 4.49 and 4.27 out of a total of 5. The mean of statements 1 and 2 can be attributed to a high mean for statements 3 and 4, with values of 4.38 and 4.49, respectively, demonstrating that average UTHM students and staff are well aware of the significance and responsibility of getting vaccinations to jointly control the spread of COVID-19. This indicates that people who are worried about the dangers and adverse impacts of COVID-19 will instantly feel obligated to willingly receive the vaccination. Conversely, when they believe the risks are negligible, complacent people typically fail to regard vaccination as a required preventive measure.

3.3.3 Convenience

Table 5: COVID-19 Vaccine Convenience

Statements	Mean	SD
Do you agree that the services provided by the government can make it easier for Malaysians to get vaccinated?	4.24	0.766
Do you agree that the government has provided enough and clear information for the people's understanding of the COVID-19 vaccine?	4.23	0.846
It is easy for you to go to the vaccination centre/clinic at the appointed time to be vaccinated	4.18	0.844

According to **Table 5,** the majority of students and staff of UTHM Pagoh, as shown by the mean value, 4.24 over 5, strongly agreed that the government-run immunization program makes it easier for people to receive the COVID-19 vaccine. The government's initiatives to offer free vaccinations to all Malaysian citizens might be used to support this claim. The MySejahtera application has also simplified the registration process for vaccinations for the general population. The following mean value of 4.23 indicates that respondents agreed that they were given enough information to understand the COVID-19 vaccine. There are numerous government-released information channels about the COVID-19 vaccine that are closer to the public, including official social media, television commercials, and the MySejahtera application. During the COVID-19 pandemic, information dissemination is critical because, when official information about the Malaysian National COVID-19 Immunization Program (NIP) is limited and delayed, communities will educate themselves about the vaccine by disseminating information to one another. Finally, the most important factor under the facility was the ability of the community to go to the vaccination center on time. The respondents in this study showed high agreement with a mean value of 4.18, indicating they were satisfied with this facility.

3.4 Knowledge

Table 6: The Level of Knowledge among Staff and Students UTHM Pagoh

Knowledge Level	Category	Frequency	Percentage (%)	Overall Percentage (%)
Good (6 - 10 marks)	Staff	24	63.16	71.8
	Students	172	73.19	
Poor (0 - 5 marks)	Staff	14	36.84	28.2
	Students	63	26.81	

Based on **Table 6**, respondents managed to get more than six marks which determine that they have a good level of knowledge to answer the questions given (71.8%) when there were incorrect and inaccurate statements regarding the COVID-19 issue. A few of them got less than five marks which disclosed a poor level of knowledge due to lack of understanding or misinterpretation of the questions given (28.2%). This shows that either respondents lack knowledge or they misunderstood the question. 24 staff (63.16%) and 172 students (73.19%) have a good level of knowledge about COVID-19 and its vaccine. The remaining respondents, however, have limited knowledge about it (28.2%). Respondents that get less than five marks are less than 50% which considers that students and staff of UTHM Campus Pagoh are knowledgeable on this pandemic issue. In summary, presented data tells that staff and students in UTHM Pagoh are educated about the COVID-19 vaccine and are capable of answering almost all questions correctly.

4. Conclusion

In conclusion, the COVID-19 vaccine was well received by staff and students at UTHM Pagoh. Their attitude toward vaccine confidence, importance, and satisfaction is also very positive. This is due to the government's efforts to increase public trust in the COVID-19 vaccine, raise public awareness of the importance of vaccination, and solicit public cooperation in developing immunizations and providing facilities that make it easier for people to get vaccinated.

The most important thing is to provide clear and accurate knowledge and understanding to society as a whole so that no false news or doubts affect society and hinder their acceptance of the vaccine. This is demonstrated by the fact that both staff and students are well-versed in the COVID-19 vaccine from this study. With the cooperation of the people and effective government strategies, Malaysia has recorded the fastest vaccination rate in the world, demonstrating the program's success.

Hopefully, this study will be improved in the future based on scope of study and other factors that affect the confidence level among Malaysian populations. It is suggested that other methods are required so that Malaysians are more confident with the vaccines released by doing more study which can be conducted more comprehensively in the community with various demographic and age differences to improve the reliability of the study results.

Acknowledgement

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