

# The Relationship between Awareness and Preventive Practice of COVID-19 and the Intention of Taking Vaccination among Batu Pahat Residents

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DOI: <https://doi.org/10.30880/rmtb.2024.05.01.004>

## Article Info

Received: 31 March 2024

Accepted: 30 April 2024

Available online: 30 June 2024

## Keywords

Awareness, Preventive practice, Intention of taking vaccination, COVID-19

## Abstract

Many other countries had researched how the citizens' attitudes about the COVID-19 vaccine acceptance or intention. The problem recently was the booster vaccine receive rate was low in Malaysia. This study will identify the level of awareness about COVID-19, the level of preventive practice about COVID-19, and the level of intention to take vaccination, and identify the relationship between these variables among Batu Pahat residents. A close-ended quantitative questionnaire had been developed with Google Forms will be used for gathering the necessary information. A total of 138 respondents contributed to the result of the study. From the descriptive analysis, there is a high level of awareness, poor level of preventive practice, and poor level of intention of taking vaccination. The result shows that one of the hypotheses has achieved at correlation coefficient analysis – Spearman's rho test, another is rejected. The preventive practice has a positive moderate association with the intention of taking vaccination with significance. Awareness about COVID-19 then no significant connection with the intention of taking vaccination.

## 1. Introduction

To prevent the impacts brought by the Coronavirus disease (COVID-19), the vaccine has been invented and released in various countries for their residents. Although the disease has been identified as a common disease like other illnesses, however, the effect when infecting this disease will have a chance to cause permanent damage to someone. However, people nowadays gradually change their norms to the ordinary before the disease spreads. Yet, the COVID-19 disease has not disappeared or been immunized fully by the people. So, it also has a chance to infect someone and spread again.

### 1.1 Research Background

There is much research done in other countries about people's intention to take the booster vaccination. There are also some studies that have investigated the acceptance of people about the vaccine booster doses. The factors that will influence the intention, acceptance, and willingness of people to get the booster vaccine are various. This study also will test other factors to identify the relationship. It is used to identify the underlying reasons for the occurrence of problems, resulting in the situation in Malaysia today.

## 1.2 Problem Statement

People in Malaysia get their booster doses low in total percentages when compared to the first and second doses. It will be a waste of resources where spent by the government. Besides, when people ignore the impact brought by COVID-19 also becomes a hazard to a country. And, there are studies showing the effectiveness of booster doses. The use of booster vaccines has shown significant effectiveness in resisting the harm caused by diseases. However, the number of people receiving vaccinations is very low, which will also result in a higher risk of being affected by the disease. This not only affects the subsequent lives of the people but also poses a considerable threat to the country, including its economic situation.

Therefore, to achieve the research objectives level of awareness and preventive practice about COVID-19 and the level of intention of taking vaccination among the Batu Pahat resident are determined. Consequently, the relationship between level of awareness and preventive practice about COVID-19 and the intention of taking vaccination among Batu Pahat resident is identified.

## 1.3 Research Scope

The research scope of this study will focus on a certain population which is Batu Pahat residents. The total population who live in Batu Pahat is about 495,338 residents where according to the OpenDOSM under the Department of Statistics Malaysia (2023). The sample size will be estimated by using the software G\*Power. 138 respondents have been calculated by the G\*Power software.

## 1.4 Significance of Study

This study can provide a general view of the Batu Pahat residents. The result of this study can be used to estimate the intention and willingness of taking vaccination of other Batu Pahat residents. The summary of this study also can know the awareness of Batu Pahat residents toward COVID-19 nowadays. And, this study can know the Batu Pahat residents' attitude towards the preventive practice for COVID-19 nowadays. This study also can find the relationship between awareness and preventive practice and intention of taking vaccination among the Batu Pahat residents.

## 2. Literature Review

The purpose of this chapter is to describe the literature related to the relationship between awareness and preventive practice regarding COVID-19 toward the intention of vaccination among Batu Pahat residents. The variables of this study will include two elements, which are the independent variable and the dependent variable. The independent variables in this study are preventive practice about COVID-19 and awareness about COVID-19. While dependent variable in this study is the intention of taking the vaccination. There are similar studies done in other countries have shown the awareness and preventive practices of people on COVID-19 can influence their intention to take their vaccination. When the issue comes to Malaysia, is there Malaysians will have the same result and the same point of view as other countries. Thus, this study will figure out the response of Malaysians, but the target will focus on Batu Pahat residents.

### 2.1 Intention

Intention has a meaning as the plan, desire, and expectation to carry out an action. It determines the probability of a person to involved or participating in a behavior (Chen, 2023). The power of intention represents the want of a person to do something, such as a person with a strong intention means to have a strong ambition to do something. The intention also determines the action performed by a person and influences the desire of a person to act something. It also leads a person to behave in something that comes from his mind.

#### 2.1.1 Intention of taking vaccination

The meaning of intention to take vaccination is like the meaning of the separated word, the strength of intent of a person to have their vaccination. There are few researchers who have studied this element and shown different results. A study in the United States has researched the intention and acceptance of Americans about vaccination (Malik *et al.*, 2020). The study explaining the intent of Americans will affect and shift to the actual act. The study also stated that the intention of a person to take the vaccination can be affected by the information gathered by themselves. Another study in Jordan stated that the intention of a person to take a vaccine may be influenced by misinformation and disinformation, the intent of the person will reflect the willingness to have the vaccination (Abujilban *et al.*, 2021).

A study done in Ghana stated some theories that can determine the factors that influence the intention of a person (Twum *et al.*, 2021). One of the theories stated in that study mentioned the intention to perform something for a person can be influenced by available resources and opportunities. Another theory stated in the

study mentioned how much weight and effort a person will apply to perform the behavior, which explains the intention of a person will be different when facing different things. When the theories applied to the intention of people to take the vaccination, it also showed the effects that people affected as the theories stated.

A person's intention also can relate to hesitancy since it is the opposite side of it. A study has researched the hesitancy of a person to have the vaccination, where the acceptance of the vaccine of a person is refused or delayed. It is showing the unintended of a person to have the vaccination (Ghorbanzadeh, 2023).

## 2.2 Awareness

Awareness can be defined as an internal condition, a preference, a gnosis, and a resource a person has (Klussman *et al.*, 2022). Awareness may have a similar essence in certain fields, but a study stated that the direction of awareness is more leaning toward the self, like personalization which can depend on oneself and the concern of a person or a response to something (Jati *et al.*, 2019). Awareness also can be separated into three different core ideas, cognitive awareness explains the personal perception, thinking, and understanding to affect the accuracy of having awareness. Second is multilevel awareness where awareness is separated into conscious and unconscious. The third explains the awareness in a relation where one thing impacts another (Carden *et al.*, 2022).

### 2.2.1 Awareness about the COVID-19

A study has defined awareness about COVID-19 as how an individual knows the infection control measures and has a part of knowledge about the coronavirus (Singh & Verma, 2022). Having the ability to cognize what the surrounding is happening is important when the pandemic is ongoing. A study in Turkey has stated that environmental awareness relates to COVID-19 as environment awareness is necessary and important knowledge to a person for preventing the issues and situations arising from the environment (Değirmenci *et al.*, 2023).

Another study has defined awareness about COVID-19 as it will affect the attitude of a person to face COVID-19, like the acceptance of a person to government policy, and it will also influence the mental of a person (Salman *et al.*, 2022). A study done in the United Arab Emirates (UAE) has mentioned that awareness among the citizens about COVID-19 is able to have a better understanding of the current situation and the risks involved. They also have a better view of the impact and results caused by COVID-19 disease (Sahu, 2021).

## 2.3 Preventive Practice about COVID-19

Preventive practice or the behavior of preventive be defined as a preventive measure that formulates a protective environment that can prevent a person from getting harmed. The preventive behavior of COVID-19 can protect a person from infecting COVID-19 (Lu *et al.*, 2023). The preventive practice for the COVID-19 pandemic in the article stated have social isolation can prevent a person who is infected the COVID-19 from spreading the disease to others. Another study about preventive practices done in India has mentioned that wearing masks and washing hands is the adoption of practicing preventive behavior during the pandemic (Ansari *et al.*, 2021).

Research done in Portugal also mentioned various methods of preventive practice, such as social isolation, wearing masks when going out and in public indoors, and hand washing with soap or sanitizer (Alves *et al.*, 2021). The research of that study is during the situation of the COVID-19 pandemic, the preventive practice also involved border closures which have also been launched in many different countries. Besides the method mentioned above, the additional method at the beginning of the pandemic like quarantining the whole country, banning public gatherings, and changing the physical study method to online to avoid close contact also stated in a study (Alahdal *et al.*, 2020).

Preventive methods and behaviors are similar to each other countries, this is because the method and practice all come from the advice from the World Health Organization (WHO). On the official website of WHO, there are various questions and answers given by the person in charge. It affects preventing COVID-19 from spreading during the pandemic.

## 2.4 Theories related

### 2.4.1 Theory of Planned Behavior

The theory of planned behavior, or TPB, is a theory that extends from TRA, where TRA is the theory of reasoned action. It is a theory that describes the intention of a person about the behavior and is invented by two factors, which are subjective norms and the attitude of a person toward his behavior. However, in TPB, a factor is added to the theory, which is behavior control (Yastica *et al.*, 2020).

A study has explained the intention of people to execute a specific behavior that can be influenced by factors (Sarikhani & Ebrahimi, 2022). The theory explained in that study has assumed that the intention of a person can be affected by motivational factors. It also tests how hard a person is willing to spend and make an effort when they plan to perform the behavior. Another study has defined the theory as the theory having three different core factors, which are behavioral control, subjective norms, and individual attitude (Rahi, 2023). The three theories' core factors have different meanings, behavioral control is justifying the level of a person using external resources to carry out a certain behavior. Subjective norms then explain a person can finish his task may be affected by the external or social environment, or any other approval. The attitude of an individual will determine the positive or negative behavior a person has.

### 2.4.2 Health Belief Model

The health belief model, HBM is a conceptual paradigm that explains the dynamic of transformation and its connection to health behavior that will create an evaluation of the potential and motivation of a person to adjust their health condition (Yastica *et al.*, 2020).

A study has stated that HBM proposes to identify the reason that causes people unsuccessful in adapting preventive strategies for the disease. The study also stated that HBM has two items that can heal or prevent illness, which is avoidance of disease and belief in the specific health action (Kaladharan *et al.*, 2023). Another study has mentioned that HBM is a commonly used theory that measures individual health behavior change by predicting and examining it (Graham-Kalio *et al.*, 2021). The other study used the HBM theory to measure the features and points related to health during the unusual pandemic (Aditya Sobika & Vivek Raj, 2021). The article also stated the common use of HBM is to measure and predict the aspect that affects a person's health behavior.

## 2.5 Hypothesis of the Study

In this research, the relationship between independent variables, such as awareness about COVID-19 and preventive practices about COVID-19, and the dependent variable, the intention to take vaccination will be figured out, as well the target respondents are Batu Pahat residents. To achieve this purpose, the hypothesis of the study will be formulated according to the results of past studies.

### 2.5.1 Awareness about COVID-19

A study about the effect of awareness about COVID-19 has tested the moderate effect. The result of the study shows awareness has a positive relationship of moderating effect on the intention of people getting their vaccination (Rahi, 2023). A study (Tharwat *et al.*, 2023) done in Egypt has discussed how the intention and hesitancy of a person about the vaccine can be affected by knowledge. The study has mentioned that knowledge is an important element that affects a person to measure the importance of certain issues, like awareness. The awareness will influence a person to intend or be hesitant about taking vaccine doses. Another study (Li *et al.*, 2023) stated that people are hesitant to have their vaccination due to the main reason which is a lack of intelligence about the effectiveness of vaccines and lack of concern, where the people are low awareness of the situation and related knowledge. Due to this reason, then this study will assume that:

H1. There is a significant relationship between awareness about covid-19 and intention of taking vaccination among Batu Pahat residents.

### 2.5.2 Preventive Practice about COVID-19

In the past study on this topic, most of the studies applied the Health Belief Model and Theory of Planned Behavior to express preventive behavior. A study (Twum *et al.*, 2021) tested the preventive behavior of respondents the study, results showed that attitude, subjective norms, and behavioral control under the theory of planned behavior have shown significant effects on the intention of a person to have the vaccination. Another study (Rahi, 2023) mentioned that behavioral control brings a good performance in influencing a person's intention by affecting the attitude of a person. Due to reasons then this study will assume that:

H2. There is a significant relationship between preventive practices about covid-19 and the intention of taking vaccination among Batu Pahat residents.

## 2.6 Research Framework

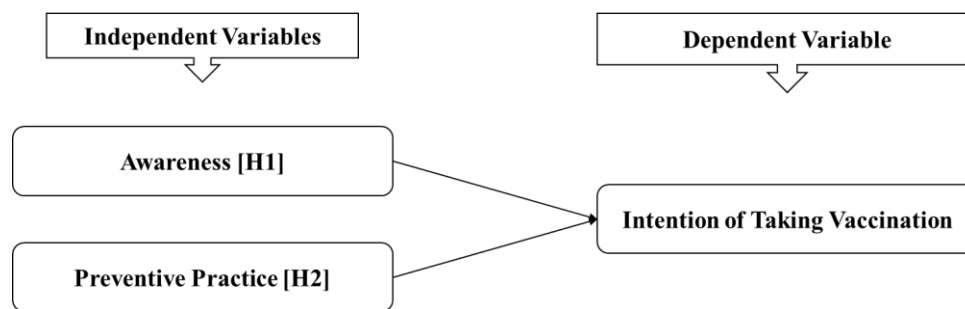


Fig. 1 Research Framework

A research framework gives the researcher and reader a better view of the research, according to the chapter of (Akanbi *et al.*, 2015) a brief about the research framework provides a quick overview of a topic discussed by research. It also is presented by using illustration. Most of the research has provided a research framework because it does bring a clear objective for a researcher.

This research framework aims to highlight the relationship between two independent variables and a dependent variable. This study will highlight two independent variables which are awareness about COVID-19 and preventive practice about COVID-19, and the purpose is to test where these two independent variables have affected any item. The dependent variable then is the intention of taking vaccination, it will become an item where being tested as the item will or not change due to the independent variables mentioned before. This study will specify the zone where the respondent will only focus on Batu Pahat residents.

## 3. Research Methodology

Jansen and Warren (June 2020) stated that research methodology can be defined as a method to create a systematic layout of a study by a researcher with the purpose of ensuring the outcome of the research is valid and reliable and that the result can fulfill the research questions and objectives of the research. Research methodology is also important to provide some ideas to the reader for understanding the research method involved, and it also creates a plan of research for the researcher (Indeed Editorial Team, Nov 2022).

### 3.1 Research Design

In this study, the research designs applied are correlational and descriptive. To obtain the data for analysis, the quantitative research method will be applied. A quantitative research method is the process of collecting and analyzing numerical data. It can be used to find patterns and averages, make predictions, test causal relationships, and generalize results to the wider population (Bhandari, 2022). The type of data collected will be nominal, ordinal, and scale.

### 3.2 Population and Sampling

The population involved in this study is Batu Pahat residents. Choosing the Batu Pahat residents for this topic of research is to explore the connection between awareness and preventive practice about COVID-19 and the intention of taking vaccination. All the residents in Batu Pahat can be respondents to this study. Selecting Batu Pahat residents as the respondents of the study because the researcher was born and raised in Batu Pahat, this study can let the researcher more understand about the attitude of Batu Pahat residents toward the covid-19 nowadays.

However, the population of Batu Pahat is large. To achieve the objective, it is required to have a specific sample size. The sample size of this study is determined by G\*Power software, which can calculate the suitable sample size with the specific condition.

#### 3.2.1 G\*Power

G\*Power allows the users to define the specific test, desired power level, and alpha value in order to estimate the required sample size.

The test family of this study is “exact” with the statistical test “Correlation: Bivariate normal model” and the type of power analysis selected “A priori” to estimate a sample size with alpha, power, and effect size. The alpha used in this research is set by the system, which is default, 0.05. The power level applied is 0.95 and the effect

size is 0.3 where the level is medium, as determined by Cohen (1988). The result of the calculation with the input parameter applied shows that the sample size required is 138 respondents.

### 3.2.2 Sampling Method

The sampling method applied by this study is convenience sampling. This is because convenience sampling selects the sample from any who meet the conditions. The reason selected this method is because the target respondent of this research is focusing on a certain place, where the respondent come from Batu Pahat will fulfill the requirement to answer the questionnaire survey until the result meets the maximum the sample size.

### 3.3 Research Instrument

A research instrument can be described as any tool that can utilize the collection, measurement, and analysis of data where related to a research subject. In this research, the questionnaire will be selected as a suitable research method. This is because the questionnaire can be designed the close-ended questions that relate to the topic and research objectives. The questionnaire questions may consist of awareness about COVID-19, preventive practices about COVID-19, and intention of taking vaccination. The questionnaire will be provided for Batu Pahat residents.

The questionnaire will be divided into four sections, where section A will be the demographic and characteristic section. In this section, there are 2 questions to identify the profile of a respondent, which are age and gender. Then, section B will look into the first independent variable, which is the questions about their awareness about COVID-19. It is on purpose to know where people are still concerned the COVID-19, 7 questions have been developed to identify the awareness of respondents. After that section C will be the preventive practice for COVID-19, 4 questions in this section with the purpose of identifying the respondent's behavior in dealing with the covid-19 recently. Last is section D, 5 questions about the intention of taking vaccination to understand the intention of Batu Pahat residents to receive vaccination.

**Table 1** *Items of Questionnaire Survey*

Section	Purpose	Number of Questions	Refer to
A	Demographic	2	Wong <i>et al.</i> (2022) Alahdal <i>et al.</i> (2020)
B	Awareness about COVID-19	7	Alahdal <i>et al.</i> (2020)
C	Preventive Practice	4	Alahdal <i>et al.</i> (2020)
D	Intention of taking vaccination	5	Ong <i>et al.</i> (2023)
	Total	18	

### 3.4 Data Analysis

The data analysis method will involve two types, which are descriptive analysis and inferential analysis. Two types of analysis will be analyzed by the SPSS software. The descriptive analysis is to find out the frequency and central tendency of the elements in the data. The mean of the data can determine and fulfill the objective of identifying the level of the variable. The inferential analysis is used for concluding an assumption from a finding. The correlation analysis under the inferential analysis can be as finding the relationship between the variables. It can identify the existence of a relationship and the trend of the relationship, which is positive or negative. The data analysis process will be done through the SPSS software.

#### 3.4.1 Descriptive Analysis

Using this analysis is to find the result that consists frequency of each item. The descriptive analysis also can be as achieve the objective of the study, by identifying the level of variables using the mean value that is analyzed by descriptive analysis.

#### 3.4.2 Normality Test

The normality test in this study is to identify whether the data gathered is normally distributed or not. It is a step before conducting the correlation coefficient analysis. The correlation coefficient analysis needs to identify the normality of the data to obtain a correct and accurate result. The normality test involved in this study uses the Kolmogorov-Smirnov and Shapiro-Wilk tests, and the result of the Kolmogorov-Smirnov will be used due to the total respondents is larger than 50.

### 3.4.3 Correlation Coefficient Analysis

This analysis is to achieve the objective of the research. The correlation analysis is to identify the relationship between variables, as the objective of this study is to identify the relationship between independent variables and dependent variables. It can also measure whether the relationship either is significant or not significant.

### 3.5 Pilot Study

The pilot study is to examine the possibility of the research. This study involves 20 respondents to carry out the pilot study. Through the pilot study can observe the existence of errors or mistakes that happened in a questionnaire, and then correct them before running the true research. The pilot study also can test the reliability of each variable.

**Table 2** Reliability Analysis of Pilot Study

Variables	No. of Item	Cronbach's Alpha	Level of Consistency
Awareness about COVID-19	7	0.738	Good
Preventive Practice about COVID-19	4	0.880	Very Good
Intention of taking Vaccination	5	0.755	Good

The reliability test of the pilot study has obtained the result in Table 2. All of them are accepted as reliable questions. This proves the feasibility of the questionnaire. And, through the pilot study, no error or mistake has been made.

## 4. Result of Analysis

### 4.1 Reliability Analysis

Reliability analysis is to ensure the ability to measure something is consistent and reliable. The reliability test in this study consists of all variables studied.

**Table 3** Reliability Statistics

Variables	No. of Item	Cronbach's Alpha	Level of Consistency
Awareness about COVID-19	7	0.720	Good
Preventive Practice about COVID-19	4	0.912	Excellent
Intention of taking Vaccination	5	0.866	Very Good

Based on Table 3, the reliability has been analyzed with SPSS and determined using Cronbach's Alpha value. According to the standard stated by Mat Nawi *et al.* (2020), Cronbach's Alpha value between 0.7 and 0.8 is at a Good level of consistency, between 0.8 and 0.9 is Very Good, and when the value is above 0.9 then it will be an Excellent level. The result of the analysis of reliability shows that awareness about COVID-19 in a Good level of consistency, preventive practice about COVID-19 has obtained an Excellent level and the intention of taking vaccination has reached a Very Good level.

### 4.2 Descriptive Analysis

#### 4.2.1 Section A: Demographic

From the descriptive analysis result, the frequency of each element from section A can be identified. This study involved 138 respondents, there is no missing value. Refer to Table 4-5, there are 65 persons are male(47.1%) and 73 persons are female(52.9%). The respondents are mostly 18 to 28 years old 47 of them are in this age range (34.1%), followed by 29 to 39-year-old have 34 persons(24.6%), 40 to 49 years old have 28 persons(20.3%), 50 to 59 years old have 17 persons(12.3%) and the least is 60 years old or above only have 12 persons(8.7%).

**Table 4 Gender**

Gender	Frequency	Percent (%)	Cumulative Percent (%)
Male	65	47.1	47.1
Female	73	52.9	100
Total	138	100	

**Table 5 Age range**

Age Range	Frequency	Percent (%)	Cumulative Percent (%)
18-28	47	34.1	34.1
29-39	34	24.6	58.7
40-49	28	20.3	79.0
50-59	17	12.3	91.3
60+	12	8.7	100
Total	138	100	

#### 4.2.2 Independent Variables and Dependent Variable

The variables in this study, awareness about COVID-19, preventive practice about COVID-19, and intention of taking vaccinations also be analyzed in order to obtain the result to achieve the objective. Three variables were analyzed through the descriptive analysis, and the mean and standard deviation values were calculated, the mean value can be as interpret the level of the variables.

**Table 6 Descriptive Statistic Data**

Variable	N	Mean	Standard Deviation
Independent Variable			
Awareness about COVID-19	138	3.9803	0.50121
Preventive Practice about COVID-19	138	2.0254	1.08754
Dependent Variable			
Intention of taking vaccination	138	1.9217	0.72270

Table 6 shows the result of the descriptive analysis of all variables. From the results can observe that awareness about COVID-19 has the highest mean, which is 3.9803 with a 0.50121 standard deviation, preventive practice about COVID-19 has a mean value of 2.0254 with a 1.08754 standard deviation, and intention of taking vaccination has the lowest mean value which is 1.9217 with 0.72270 standard deviation value.

#### 4.3 Normality Test

The normality test is to determine the normal distribution of the data. In this study, the method used to analyze the normality is the normality test – Kolmogorov-Smirnov and Shapiro-Wilk test. Only the result of Kolmogorov-Smirnov has been used.

**Table 7 Normality Test – Kolmogorov-Smirnov**

Variables	Kolmogorov-Smirnov		
	Statistic	Df	Sig.
Overall_Mean_A	0.86	138	0.015
Overall_Mean_PP	0.178	138	<0.001
Overall_Mean_IN	0.138	138	<0.001



All the variables are data non-normal. This is due to the reason that the significance value is lower than 0.05 level of significance.

#### 4.4 Correlation Analysis

**Table 8** Nonparametric Correlations – Spearman’s rho

Variable			Awareness	Preventive Practice	Intention
Spearman’s rho (Rank of Correlation Coefficient)	Awareness	Correlation Coefficient	1.000	0.091	-0.41
		Sig. (2-tailed)	.	0.290	0.630
		N	138	138	138
	Preventive Practice	Correlation Coefficient	0.091	1.000	0.488**
		Sig. (2-tailed)	0.290	.	<0.001
		N	138	138	138
	Intention	Correlation Coefficient	-0.41	0.488**	1.000
		Sig. (2-tailed)	0.630	<0.001	.
		N	138	138	138

\*\* representing the correlation is significant at the 0.01 level (2-tailed).

Table 8 shows the result of the correlation coefficient analysis. The type of analysis is nonparametric correlation Spearman’s rho test, due to the data being non-normal. The analysis is applied to find the relationship between the variables, for this study, the relationship between independent variables and dependent variables is the purpose of conducting this analysis.

The preventive practice for COVID-19 has shown a positive relationship with the intention of taking vaccination. This relationship also shows the moderate correlation coefficient where the significant value is lower than the 0.05 level of significance. Awareness about COVID-19 has shown a moderate negative relationship with the intention of taking vaccination. The significance value has shown no significant because it has a higher than 0.05 level of significance.

#### 4.5 Hypothesis Testing

The result of hypotheses has obtained from the correlation analysis as Table 9.

**Table 9** Summary of Hypothesis Testing

Hypothesis	Result
H1: There is a significant relationship between awareness about COVID-19 and intention of taking vaccination among Batu Pahat residents.	Rejected
H2: There is a significant relationship between preventive practices about COVID-19 and the intention of taking vaccination among Batu Pahat residents	Accepted

### 5. Conclusion

#### 5.1 Discussion about Research Objective

Three objectives were developed to conduct this study, which are to identify the level of awareness and preventive practice about COVID-19, identify the level of intention of taking vaccination, and identify the relationship between awareness and preventive practice about COVID-19 toward intention of taking vaccination. This section will discuss the result obtained.

### 5.1.1 Identify the Level of Awareness and Preventive Practice about COVID-19

**Table 10** Mean and Standard Deviation of Independent Variables

Variable	N	Mean	Standard Deviation
Awareness about COVID-19	138	3.9803	0.50121
Preventive Practice about COVID-19	138	2.0254	1.08754

Table 10 shows the result of the analysis. The first variable, awareness about COVID-19 has obtained a mean value of 3.9803 which means that most of the respondents, the Batu Pahat residents have a high level of awareness about COVID-19. This result proves that most of the respondents know and are aware of the existence of COVID-19. The second variable, the preventive practice about COVID-19 has a 2.0254 for mean which means the poor level of practicing the preventive practice to avoid COVID-19 by most of the respondents.

The result for practicing the preventive practice is obviously different when compared to the previous studies stated by Alahdal *et al.* (2020) and Puspitasari *et al.* (2020). Both previous studies have done research during the serious situation of COVID-19, and their respondents have a high level of practicing preventive practice. On the contrary, the questionnaire survey done by this study is during the "slack period" of COVID-19, people during this gap have become careless about the menace of the disease.

The result of the level of awareness about COVID-19 is closer to the result of the previous studies done by Alahdal *et al.* (2020). This result shows that most of the people in Batu Pahat have a certain amount of understanding about COVID-19.

### 5.1.2 Identify the Level of Intention of Taking Vaccination

**Table 11** Mean and Standard Deviation of Dependent Variables

Variable	N	Mean	Standard Deviation
Intention of Taking Vaccination	138	1.9217	0.72270

Table 11 shows the result of the analysis. The mean value is closer to 5 meaning that the more willing the respondents take the vaccination, however, the mean of this variable, the intention of taking vaccination from Batu Pahat residents is low, where only 1.9217. It means most of the Batu Pahat residents have low intention to have the COVID-19 vaccination.

The result contrasts with some previous studies, such as Li *et al.* (2023) and Folcarelli *et al.* (2022) have shown the result of most respondents are willing to have the vaccination. From the research result obtained from this study, the respondents are unwilling to have another vaccination may be due to the reasons that recently the disease is not as arrogant as before, people are immersed in a moment of ease. During the research, the COVID-19 cases are less, maybe it is a reason for people is low intention to take vaccination.

### 5.1.3 Identify the Relationship between Variables.

**Table 12** Nonparametric Correlations – Spearman's rho

Variable		Awareness	Preventive Practice	Intention
Awareness	Correlation Coefficient	1.000	0.091	-0.41
	Sig. (2-tailed)	.	0.290	0.630
	N	138	138	138
Preventive Practice	Correlation Coefficient	0.091	1.000	0.488**
	Sig. (2-tailed)	0.290	.	<0.001
	N	138	138	138
Intention	Correlation Coefficient	-0.41	0.488**	1.000

Sig. (2-tailed)	0.630	<0.001	.
N	138	138	138

Table 12 shows the correlation coefficient of the variables written in research objective 3. The correlation coefficient can be as finding the relationship between each variable with another variable. The result of the correlation coefficient analysis has only obtained a significant relationship between preventive practice about COVID-19 and the intention of taking vaccination. The awareness about COVID-19 does not show a significant correlation coefficient with the intention of taking vaccination. The relationship of the pair, preventive practice about COVID-19, and intention of taking vaccination show a moderate positive relationship, where when people are inactive in practicing preventive practice, then they will also have low willingness to take the vaccine. Awareness about COVID-19 and intention to take vaccination has obtained a moderate negative relationship with no significance.

The positive relationship can be related to the previous study, such as Coe *et al.* (2022), which has shown similar results. In that study, most of the respondents had high levels of behavior that prevented the disease, and their intention of receiving the vaccine was also at a good level which both have a positive relationship. Wong *et al.* (2022) also mentioned the preventive practice and the intention to receive the vaccination, although it does not directly state the relationship, the observation of results has shown most of the respondents have a habit of preventing the disease, and their willingness to take the vaccination also stated high percentages.

For awareness, the previous study from Rahi (2023) has stated a result of less than 60% of the R-squared value from the variable of awareness. The higher of R-squared value the higher the connection of movement between two variables. It means that the awareness can have an impact on affecting the intention of receiving vaccination but not much. However, in this research, the awareness variable failed to obtain a significant correlation coefficient which is a non-significant correlation. The non-significant correlation may be caused by the reason that it is not a direct influencer to affect both other variables.

## 5.2 Implication of the Research

This study has two implications. First, it becomes a reference and justification if the disease is spreading again. This study can clearly observe the behavior and attitude of the Batu Pahat residents facing declining but still risky disease. The observation also can be used by the related units in Batu Pahat or any related area to plan or develop a strategy. The second is to become a counterexample learning material. This is because people in Batu Pahat have a high awareness of the disease however people still are not concerned about the preventive practice. It also can be a lesson for people to learn from.

## 5.3 Limitation of the Research

There are a few limitations included in this study. First is the small sampling size, which will affect the ability of the result to generalize the target population. Second, due to time limits, it may cause a sacrifice in terms of the scale of study. Third is research condition of the study is different from the previous study. The behavior etc. the decline of the epidemic is the aim of this study research, it is different from the past study which researches the situation when the epidemic is serious. Last is the obstacle involved in the questionnaire, which is mainly the language. It can cause some uncertainty circumstance when the respondents cannot understand the question.

## 5.4 Recommendation

Few recommendations for future research to make it better. The first is to prepare a longer time for conducting research. Enough time for preparing, planning, and conducting can reduce the chance of error and also provide a better result. The second is to increase the sample size. Increasing the sample size can affect the result by showing more possibilities and views. It also is more persuasive when generalizing the population. The third is to add other languages to the questionnaire. It can reduce the situation where people are unable to understand the questions. The last recommendation is to increase the variables for this kind of topic. This is because it can observe the result from more perspective and aspect.

Recommendation based on the analysis results and the current circumstances in Malaysia, to encourage people to get vaccinated, the government can consider implementing a few steps. Due to potential side effects of the vaccine, the government should clearly communicate the impacts, symptoms, and methods for self-help in case of any accidents. This information can help reassure people about the vaccination, as they will have a better understanding of potential side effects. Another method to boost vaccination rates is to offer subsidy-like rewards for participants. Coincidentally, as the government is actively promoting mobile payment, the author suggests that individuals receiving booster doses could receive similar rewards. This approach could serve as an incentive to motivate people to get vaccinated.

## Acknowledgement

The authors would like to thank the Faculty of Technology Management and Business, Universiti Tun Hussein Onn Malaysia for its support.

## Conflict of Interest

Authors declare that there is no conflict of interests regarding the publication of the paper.

## Author Contribution

The authors confirm contribution to the paper as follows: **study conception and design:** C.W.B. and S.N.S.; **data collection:** C.W.B.; **analysis and interpretation of results:** C.W.B.; **draft manuscript preparation:** C.W.B. and S.N.S. All authors reviewed the results and approved the final version of the manuscript.

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