

Awareness of Non-Communicable Diseases: The Impact of Knowledge, Perceptions, and Habits

Nurbatrisyia Binti Hasni¹, Nurul Raihana Binti Roslan², Jamilah Binti Othman³

^{1,2,3}College of Computing, Informatics and Mathematics Universiti Teknologi MARA Negeri Sembilan Seremban Campus, 70300, Negeri Sembilan

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ABSTRACT

This study explores the awareness of Non-Communicable Diseases (NCDs) among students enrolled at Universiti Teknologi Mara (UiTM) Seremban. The research aims to assess the levels of knowledge, perceptions, and practices related to NCDs among university students, while identifying demographic factors that influence these awareness levels. Employing a cross-sectional study design, a self-administered questionnaire was distributed to a stratified random sample of 361 students across three faculties. Data analysis utilized descriptive statistics and Multiple Linear Regression to examine the relationships between independent variables (knowledge, perceptions, and practices) and the dependent variable (awareness). The findings indicate that although a majority of students exhibit a basic understanding of NCDs, significant gaps persist in detailed knowledge and preventive behaviors.

Keywords: awareness, knowledge, perceptions, and practice habits

INTRODUCTION

Non-communicable diseases (NCDs) are diseases that are not transmitted (spread) directly from one person to another. NCDs, also known as lifestyle diseases or chronic diseases, are long-term illnesses caused by a mix of genetic, physiological, environmental, and behavioral factors. Cardiovascular diseases (such as heart attacks and stroke), cancers, chronic respiratory diseases (such as chronic obstructive pulmonary disease and asthma), and diabetes are the most common types of NCDs (WHO, 2023). The rising prevalence of NCDs can be attributed to a complex interplay of various factors, including demographic shifts, urbanization, sedentary lifestyles, dietary changes, and an aging population. In general, the majority of these non-communicable diseases are caused by the way people live and are preventable. So, healthy lifestyle practices in childhood and adulthood, regular screening and early treatment, physical activities and restricting the intake of harmful substances such as tobacco, alcohol, and food with high fat and sugar content are key to preventing NCDs. As the population ages, more people are predicted to suffer from NCDs in their lifetimes. Raising awareness about NCDs and their management among the general community and those at risk now will contribute to Malaysians' enhanced longevity and healthy aging by reducing early mortality due to NCDs and their consequences.

The research hypothesis that were examined were as follows:

H₁: There is a significant effect between knowledge toward awareness of non-communicable diseases among UiTM Seremban students.

H₁: There is a significant effect between perceptions toward awareness of non-communicable diseases among UiTM Seremban students.

H₁: There is a significant effect between practice habits toward awareness of non-communicable diseases among UiTM Seremban students.

LITERATURE REVIEW

Awareness of non-communicable diseases (NCDs) is critical in public health due to their growing prevalence and impact on individuals and healthcare systems (Habib and Saha, 2010). Studies reveal gaps in public understanding of NCD causes, risk factors, and prevention across diverse populations. Effective strategies include community interventions and health education to enhance NCD awareness and promote healthy lifestyles (Arena et al., 2015). Socio-economic disparities, cultural influences, and healthcare access significantly affect NCD awareness (Lago-Peñas et al., 2021).

Knowledge, as described by (Varela et al., 2017), lacks a clear definition and is inherently . It results from human behavior, specifically the act of "knowing," and is created through sensory experiences processed by the mind. In the context of public health, particularly regarding non-communicable diseases (NCDs) like cardiovascular diseases, diabetes, cancer, and chronic respiratory illnesses, understanding knowledge and awareness is crucial for targeted interventions (Jayanna et al., 2019). This study aims to fill the research gap regarding NCD knowledge among UiTM Seremban 3 students, providing insights for customized health education programs and contributing to the broader understanding of NCD awareness among university students.

Perception, shaped by individual experiences and involving both sensory and intellectual processes, influences how people interpret the world (Merleau-Ponty, 2004). In the context of non-communicable diseases (NCDs), perceptions significantly affect preventive behaviors and health-seeking actions (Rasul et al., 2022). Social and cultural factors, as well as media portrayals, play crucial roles in shaping these perceptions, highlighting the need for context-specific health communication strategies (Gelders et al., 2009). This study aims to explore NCD perceptions among UiTM Seremban 3 students to better understand how this group responds to NCD challenges and to inform targeted health interventions.

Habits are repeated behaviors performed with minimal thought and awareness, often triggered by environmental cues and past experiences (Neal et al., 2006). They are a type of automaticity that occurs due to repeated actions, happening without conscious intention or goals (Moors and De Houwer, 2006). Effective health practices, such as regular exercise and balanced diets, are crucial for preventing non-communicable diseases (Budreviciute et al., 2020). However, socio-economic disparities and access to healthcare resources significantly influence these habits, affecting disease management. Understanding the practice habits of specific demographic groups, like university students, is essential for developing targeted health interventions and improving public health outcomes.

METHODOLOGY

In this study, 361 students were selected from a total of 5525 students across three faculties at Universiti Teknologi MARA, Kampus Seremban, using stratified sampling. This non-probability sampling method ensured a representative sample. Data were collected through a self-administered electronic questionnaire, structured into five sections: Part A (Demographics), Part B (Knowledge about Non-Communicable Diseases), Part C (Perceptions towards Non-Communicable Diseases), Part D (Practice Habits related to Non-Communicable Diseases), and Part E (Awareness about Non-Communicable Diseases).

Demographic information included gender, age, living area, faculty, education level, current semester, and family medical history. Sections B to E employed a 5-point Likert scale for measurement. Descriptive statistics and Multiple Linear Regression were used to analyze the data, examining the relationship between the independent variables (knowledge, perceptions, and practice habits) and the dependent variable (awareness).

Multiple linear regressions are used to model the relationship between two or more explanatory variables and a response variable. The relationship between independent variables which are knowledge (X1), perceptions (X2) and practice habits (X3) and the dependent variable (Y) which is awareness of non-communicable diseases were tested in this study.

So the multiple regression models are:

$$Y_i = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \epsilon \dots\dots\dots (1)$$

where

Y_i is the Awareness of non-communicable diseases

X_1 is the Knowledge

X_2 is the Perception

X_3 is the Practise Habits

ϵ is the Random Error

There are several assumptions of multiple linear regressions that must be fulfilled:

- There is a linear relationship between independent variables (X1, X2 and X3) and the dependent variable (Y).
- The residual is normally distributed.
- The error terms are independent.
- The variance of error terms has homoscedasticity (equal variance).
- Independence of the independent variables.

The F value is the ratio of two variances. Basically, the null hypothesis can be rejected if the estimated F value in a test is greater than the F critical value.

This F test can be done by conducting the ANOVA table. In this study, the null hypothesis can be rejected if the p-value from the ANOVA table is less than

0.05 (α value). Rejecting the null hypothesis indicates that the model fits the data well.

Hypothesis

$$H_0 : \beta_1 = \beta_2 = \beta_3 = 0 \dots\dots\dots (2)$$

$$H_1 : \text{At least one } \beta_i \neq 0 \dots\dots\dots (3)$$

Table 1: Analysis of Variance (ANOVA) Table

Sum of Variations	Sum of Squares	Degrees of Freedom	Mean Square	FCal	P-value
Regression	SSR	p - 1	MSR = SSR / (p - 1)	MSR / MSE	
Error	SSE		MSE = SSE / (n - p)		
Total	SST	n - 1			

DECISION

Reject H_0 if $p\text{-value} < \alpha$

A t-test is a statistical test that is used to compare the means of two groups. The t-test is used to determine if there is any linear relationship between independent variables knowledge (X1), perceptions (X2) and practice habits (X3) with dependent variable (Y) which is awareness of non-communicable diseases.

Hypothesis

$$H_0: \beta_j = 0 \quad \text{where } j = 1, 2, 3$$

$$H_1: \beta_j \neq 0$$

Test statistic

$$\frac{\beta_j}{s(\beta_j)}$$

$$s(\beta_j)$$

Where Decision

β_j = the estimated coefficient for the j-th independent variable

$s(\beta_j)$ = the standard error of the estimated coefficient

Reject H_0 if $p\text{-value} < \alpha$

RESULT AND DISCUSSIONS

Descriptive Analysis

The descriptive analysis summarizes the demographic characteristics of the respondents involved in this study, including gender, age distribution, faculty affiliation, and educational levels. The majority of respondents were female, comprising 242 individuals (67%), while male respondents totaled 119 (33%). The age distribution shows that 50.97% of respondents were between 20 and 21 years old (184 individuals), with 41.27% (149 individuals) aged 22 to 23 years, and the remaining 7.77% (28 individuals) aged 24 years and above. Regarding faculty affiliation, the highest representation was from the Faculty of Administrative Science & Policy Studies (FSPPP), accounting for 52.63% (190 students) of the total respondents. Additionally, 24.38% (88 students) were from the College of Computing, Informatics, and Mathematics (KPPIM), while 22.99% (83 students) were from the Faculty of Sports Science & Recreation Association (FSR). Furthermore, 27% of respondents were enrolled in diploma programs, with the majority, 73%, pursuing degree programs.

Multiple Linear Regression

Test the Significance of the Model

Table 2: Anova

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	110.12	3	36.71	315.829	0
Residual	37	322	0.116		
Total	148	325			

F-test was used to assess the relationship between the awareness of non-communicable diseases and a set of predictor variables. Hypothesis for this test was the model would be significant for data. Results for ANOVA tables showed the p-value is 0.000. This indicates that the model or F-statistic is significant since the p-value is less than α value 0.05. The model is a good descriptor of the relationship between the knowledge, perception and practice habits and awareness of non-communicable diseases.

Test for Goodness of Fit

Table 3: R-squared Test of Model Fit

Statistic	Value
R	0.86
R Square	1
Adjusted R Square	1
Std. Error of the Estimate	0
Durbin-Watson	2

Value of coefficient of determination, R^2 ranges between 0 (extremely poor fit) and 1 (perfect fit). The value of R^2 in this study is 0.746, this means that the 74.6% of total variation in awareness of non-communicable diseases can be explained by the variable’s knowledge, perceptions, and practice habits while the other 25.4% was explained by other factors. In conclusion, the model fits the data well. The R square value 0.746 also shows that the independent variable and the dependent variables are positively correlated.

Test for Significance of the Variables Towards the Model

Table 4: Coefficient n p-value

Variable	β	Std. Coefficient β	Sig.
Constant			
Knowledge	0	0	0.92
Perception	1	0	0
Practice Habits	0	0	0

Since the p-value for all the independent variables which are knowledge, perception and practice habits are less than α value 0.05 , therefore all the independent variables are significant to the dependent variable which is awareness of non-communicable diseases of UiTM Seremban Students.

The Final Model

The variables that included in the final model were knowledge, perception and habit since all the p-value was less than 0.05. Hence based on Table 3 the final model was as follows :

$$\hat{Y} = -0.014 + 0.185X_1 + 0.527X_2 + 0.347X_3$$

\hat{Y} = Awareness of non-communicable diseases
 X_1 = Knowledge of non-communicable diseases
 X_2 = Perceptions of non-communicable diseases

X_3 = Practice Habits of non-communicable diseases

Table 5: Coefficient values

Variable	Coefficient
Constant	-0.01
Knowledge (X_1)	0
Perception (X_2)	1
Practice Habits (X_3)	0

Based on Table 5, $\beta_0 = -0.146$, If the values of independent variables (knowledge, perception and practice habits) are equal to 0, then the mean of awareness of non-communicable diseases is -0.146. $\beta_1 = 0.185$ indicates that for every increase in knowledge, the awareness of non-communicable diseases will increase by 0.185 while the other variable (perceptions and practice habits) remains constant. $\beta_2 = 0.527$ indicates that for every increase in perception, the awareness of non-communicable diseases will increase by 0.527 while the other variable (knowledge and practice habits) remains constant. $\beta_3 = 0.347$ indicates that for every increase in practice habits, the awareness of non-communicable diseases will increase by 0.347 while the other variable (knowledge and perceptions) remains constant.

CONCLUSION AND RECOMMENDATION

Conclusion

Multiple Linear Regression Analysis used to analyze the objective of this study which is to determine whether there is a significant effect between knowledge, perceptions, and practice habits toward Awareness of Non-Communicable Diseases among UiTM Seremban students. The analysis concludes that , there is a significant effect between knowledge, perceptions and practice habits toward awareness of non-communicable diseases among UiTM Seremban students as the p-values for knowledge, perceptions and practice habits are less than α which is 0.05.

Recommendation

To enhance future research, it is crucial to expand the study’s sample size and geographic scope. Increasing the sample size ensures more precise and reliable outcomes, particularly considering potential regional variations. Researchers should adopt a comprehensive strategy encompassing diverse demographics beyond university students, including professionals, older adults, and various community groups across Malaysia. This approach not only enriches the study’s findings but also promotes awareness of significant health issues like non-communicable diseases. A well-structured plan targeting diverse populations and locations will yield more comprehensive insights, fostering more inclusive and impactful research outcomes.

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