

KNOWLEDGE, ATTITUDES, AND PRACTICE OF
FINAL YEAR NURSING STUDENTS ON RISK
FACTOR OF CARDIOVASCULAR DISEASE IN
UNIVERSITI SAINS MALAYSIA

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SCHOOL OF HEALTH SCIENCES
UNIVERSITI SAINS MALAYSIA

2022

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by

NURIZZATI BINTI MANAN

Dissertation submitted in partial fulfillment of the
requirements for the degree of Bachelor of Nursing
(Honours)

June 2022

ACKNOWLEDGEMENT

In the name of Allah, the Most Gracious, the Most Merciful.

First of all, I would like to express my gratitude towards my parents and family members who are my backbones, supporting me unconditionally with patience in completing this dissertation.

A special thanks to my supervisor, Dr Zakira Mamat @ Mohamed for all the guidance, supervision and encouragement given from the beginning of the journey until completion of this dissertation.

I would like to take this opportunity to thank the course coordinator of GTJ412, Dr Norhasmah Binti Mohd Zain for her help and assistance with this subject. Also, I would like to thank Pn. Nor Azlina A. Rahman for granting me the approval to use their research instruments for this study.

In this opportunity, I would like to thank Deans of the School of Health Science and grateful to the final year nursing student for their excellence contributions once selected in this study.

Lastly, a big thanks to my beloved friends for emotionally support me and guiding me from the proposal preparation until now.

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LIST OF ABBREVIATIONS

\bar{X}	-	Mean
SD	-	Standard Deviation
N	-	Frequency
%	-	Percentage
CVD	-	Cardiovascular Disease

ABSTRACT

Cardiovascular disease (CVD) is a leading cause of death in Malaysia. Major risk factors of CVD were modifiable. Therefore, CVD is a preventable disease through lifestyle modification. The current study was conducted to determine the knowledge on CVD risk factor, attitude towards CVD risk reduction and practice in preventing occurrence of CVD of final year nursing students in Universiti Sains Malaysia. This is a cross-sectional study using simple random sampling. Final year nursing students were selected in this present study. The respondents were randomly selected using randomizer. The sample size was 85. Knowledge, attitude and practice questionnaire was adopted from the previous study done in Kuantan. The mean and standard deviation of the knowledge, attitude and practice scores were (\bar{x} : 13.41, SD: 1.458), (\bar{x} : 55.06, SD: 4.241), (\bar{x} : 23.6471, SD: 4.1539) respectively. No significant differences were found between attitude towards CVD risk reduction and practice in preventing occurrence of CVD ($p=1.000$). From the findings, USM nursing students should engage more in exercise and developing healthy lifestyle.

ABSTRAK

Penyakit kardiovaskular merupakan punca utama kematian di Malaysia. Kebanyakan faktor risiko penyakit kardiovaskular boleh diubahsuai. Oleh itu, penyakit kardiovaskular dikenali sebagai penyakit yang boleh dicegah melalui pengubahsuaian gaya hidup. Kajian semasa yang dijalankan adalah untuk memahami pengetahuan tentang faktor risiko penyakit kardiovaskular, sikap dalam mengurangkan risiko terhadap penyakit kardiovaskular dan amalan untuk mencegah penyakit kardiovaskular. Kajian ini merupakan kajian keratan rentas yang menggunakan kaedah persampelan rawak-mudah. Pelajar kejururawatan tahun akhir dipilih untuk menyertai kajian ini. Responden dipilih menggunakan Raosoft sample size calculator. Saiz sampel adalah 85. Soal selidik berkaitan pengetahuan, sikap dan amalan diterima pakai dan diluluskan oleh pengkaji dalam kajian yang lepas di Kuantan. Purata dan 'standard deviation' yang diperoleh untuk pengetahuan, sikap dan amalan adalah (\bar{x} : 13.41, SD:1.458), (\bar{x} : 55.06, SD: 4.241), (\bar{x} : 23.6471, SD: 4.1539) masing-masing. Tiada hubungan dan perubahan signifikan antara sikap dalam mengurangkan risiko penyakit kardiovaskular dan amalan dalam mencegah penyakit kardiovaskular ($p=1.000$). Daripada keputusan yang diperoleh, pelajar tahun akhir kejururawatan USM harus memperbanyak senaman dan mengamalkan gaya hidup yang sihat.

CHAPTER 1

INTRODUCTION

This study is conducted to identify the level of knowledge, attitudes, and practice of final year nursing students in Universiti Sains Malaysia (USM) on cardiovascular disease (CVD) risk factor. This chapter includes a background of the study, problem statement, research objectives, research questions, research hypothesis, the significance of this study, and definitions of the conceptual and operational terms.

1.1 Background of the Study

According to the World Health Organization (WHO, 2021), CVD cost the lives of 17.9 million individuals worldwide in 2019, accounting for 32% of all deaths in which heart attacks and strokes were responsible for 85% of these deaths. In addition, CVD was responsible for 38% of the 17 million premature deaths (before the age of 70) caused by non-communicable diseases in 2019. The majority of CVD can be prevented by addressing behavioral risk factors such as cigarette use, poor diet and obesity, physical inactivity, and alcohol abuse. It is critical to recognize the cardiovascular disease as soon as possible so that treatment may begin with counseling and medications (A. Boehme, C. Esenwa 2018). Cardiovascular disease (CVD) consists of a few life-threatening diseases to describe the conditions that affect the heart or blood vessels (Anon n.d.). Frequently, it is closely attributed to fatty deposits in the arteries (atherosclerosis) and an increased chance of blood clots and it may be associated with damage to arteries in organs like the brain, heart, kidneys, and eyes (Anon n.d.).

Since the early 1980s, CVD has been the main cause of mortality in Malaysia. The recent update from Statistics on Causes of Death, Malaysia (2020), ischemic heart disease remained as the principal cause of death with 15.0% of the 109,155 medically certified death in 2019 (Mahidin 2021). The risk factor of CVD can be divided into determinants, modifiable and non-modifiable (Mitra et al. 2021). A few examples of social determinants were urbanization, housing, and income has adversely affected the risk for development and progression of hypertension, but the non-modifiable risk factors only include age, family history, and sex (Mitra *et al.*, 2021). Moreover, there were a variety of modifiable risk factors that were related to the lifestyle and behavior of people such as smoking, obesity, stress, unhealthy diet, and physical inactivity (Chin and Pengal 2009). In addition, smoking and bad eating habits were more typical among young adults than of elderly people (Andersson and Vasan 2018).

1.2 Problem Statement

Low understanding of cardiovascular disease (CVD) risk factors can lead to an increased risk of mortality, thus making health education becoming important in CVD prevention (Waśniowska *et al.*, 2018). From the previous study done among nursing students in Turkey has revealed that some of the nursing students had an increased risk of CVD where they should increase their knowledge level in order to reduce the exposure to the risk factor (Kaya et al. 2019). However, from the previous study done among patient attending the outpatient clinic in Kuantan, researcher figured out that the patients have good knowledge and attitude regarding CVD risk factor but the number of smoker were still high (Mohammad, Rahman, and Haque 2018). As the past study done among women in Kelantan on CVD risk factor, where the researcher found that the target population has revealed that there were significant association between knowledge and attitude, attitude

and practice and knowledge and practice regarding CVD risk factor (Muhamad et al. 2012) Therefore, the knowledge on CVD risk factor will be assessed among final year nursing students in USM since they have already exposed with teaching and learning of CVD system in their previous study.

In the previous study, most of the researchers are focusing on lifestyle modification towards persons at risk for CVD which shows that people should always maintain a healthy lifestyle with recommended guidelines. However, the health care providers are also living in a life-threatening condition if they are not doing the same as they advise the patients. Hence, slight changes in lifestyle can have a significant impact on cardiovascular disease risk reduction (Mozaffarian *et al.*, 2008). Therefore, in this study we will be focusing on the attitude of final year nursing students towards risk factor of CVD which is important to be assessed to identify whether the students have good or bad attitude to make sure the effectiveness of providing health promotions towards the patients to reduce risk for CVD.

Furthermore, instead of having a positive attitude in reducing risk for CVD, we still never know how much the nursing students practice from their understanding. It could be only knowing the consequences, but they did not practice it daily. From the previous study, the level of practice in preventing the risk of CVD is low even though the respondents have high knowledge (Ibrahim *et al.*, 2016). In this case, researchers are going to measure the regularity of practice towards prevention of CVD risk factor among final year nursing students in USM. Therefore, from the data collection researchers can identify whether the participants practice a healthy lifestyle or not.

1.3 Research Question

The research questions for this study are as follows:

1.2.1.1 What is the level of knowledge on CVD risk factor among final year nursing students in USM?

1.2.1.2 What is the level of attitude toward CVD risk reduction among final year nursing students in USM?

1.2.1.3 What is the level of practice in preventing occurrence of CVD among final year nursing students in USM?

1.2.1.4 Is there any association between attitude toward CVD risk reduction and practice in preventing occurrence of CVD among final year nursing students in USM?

1.4 Research Objective

1.4.1 General Objective

To determine the level of knowledge, attitudes, and practice of final year nursing students in USM towards CVD risk factor.

1.4.2 Specific Objectives

- i. To determine the level of knowledge on CVD risk factor among final year nursing students in USM.
- ii. To assess the level of attitude towards CVD risk reduction among final year nursing students in USM.
- iii. To identify the level of practice in preventing occurrence of CVD among final year nursing students in USM.

iv. To determine the association between attitude toward CVD risk reduction and practice in preventing occurrence of CVD among final year nursing students in USM.

1.5 Hypothesis

Null Hypothesis: There is no association between attitude towards CVD risk factor and practice towards prevention of CVD risk factor among final year nursing students in USM. (Ho)

Alternative Hypothesis: There is an association between attitude towards CVD risk factor and practice towards prevention of CVD risk factor among final year nursing students in USM. (HA)

1.6 Conceptual and Operational Definitions

Definitions for the operational terms used in this research proposal are as follows:

Table 1.1: Definitions for the operational terms

Term	Conceptual Definition	Operational Definition
Knowledge	The state of being aware of something (Merriam-Webster,n.d)	In this study, the knowledge of CVD risk factor will be assessed among the final year nursing students.
Attitude	A feeling or opinion about someone or something (Cambridge Dictionary, n.d)	The attitude refers to the final year nursing students' perspective regarding risk factor of CVD.
Practice	To do something regularly as an ordinary part of life (Merriam-Webster, n.d)	Practice in preventing the risk factor of CVD will be assessed among final year nursing students.
Risk factor	Something that increase risk or Susceptibility (Merriam Webster, n.d)	The modifiable risk factor will be focused in this study.
Cardiovascular Disease	A group of disorder that might severely affecting the heart and its circulation.	The knowledge of CVD can be impactful towards knowledge, attitude and practice in preventing CVD risk factor.

1.7 Significance of the Study

This study will be beneficial to the whole community even though it will only be conducted among the final year nursing students since they are going for community services in their final year of study. Health promotion is the most crucial part for the community health nurses in providing effective health education to the patients. Thus, this study will be one of their preparations to improve their knowledge regarding CVD risk factors. Participation in this study will be invaluable enough to make sure the final year nursing students are aware of the risk factor of cardiovascular disease, and they will be able to reflect themselves whether they have good preventive measures of CVD. From this study, participants will be able to improve their daily routine since they can look back from the checklist of the questionnaire after answering them. Hence, the improvement may grow them to be the best role model for their family, friends and to the community. Thus, it could be helpful in reducing the risk of getting CVD towards patients and the undergraduate students in USM. Moreover, this study will have a potential to be a benchmark towards Schools in Health Campus, USM including School of Medical Science, School of Dentistry Science and School of Health Science which may help them to improvise their strategy to increase knowledge about risk for CVD through conducting seminar before the students entering clinical training in Hospital USM. Higher knowledge of undergraduate students on risk factors for CVD can lead them to be more aware towards condition of people in their surroundings especially their family and friends. Throughout this study, the higher authority and policymaker will be able to plan strategies to prevent the increasing rate of CVD.

CHAPTER 2 LITERATURE REVIEW

2.1 Introduction

In this chapter, there will be a review of the literature related to knowledge, attitude, and behavior towards cardiovascular disease risk reduction. The information on the knowledge, attitudes, and behavior of past studies will be presented here. Finally, there will be described a theoretical framework chosen for this research.

2.2 Review of Literature

2.2.1 Prevalence of Cardiovascular Disease

In 2017, CVD claimed the lives of 17.8 million people throughout the world, resulting in 330 million years of life loss and another 35.6 million years of disability. In Malaysia, the National Health and Morbidity Survey (NHMS) has shown that there were voluminous CVD cases have been reported which led to a cause of death in 2016 due to coronary artery disease and followed by a stroke at 13.2% and 6.9% respectively. The elevation of CVD death cause people living with low quality of life. This type of disease is associated with the usage of tobacco, unpromising dietary intake, physical inactivity, and obesity (Chin & Pengal, 2009). Moreover, there were also w of conditions associated with increasing CVD risk which are chronic kidney disease, connective tissue disease, sleep disorder and so on (Clinical Practice Guideline in Primary and Secondary Prevention of Cardiovascular Disease, 2017).

2.2.2 Knowledge on Risk Factor of Cardiovascular Disease

According to the previous study done by Jafary *et al.*, (2005), the knowledge base of the community regarding CVD and its risk factors is an important prerequisite for an individual in order to implement behavioral changes that can lead towards prevention of CHD. The previous study, that investigated coronary heart disease's knowledge among teachers and bankers in Nigeria has resulted in about 20% of the study population who were having zero knowledge of the risk factors of the disease (Boateng *et al.*, 2017). In addition, there were also report on some misconception about CVD risk factors in which are including evil spirits, demons, and will of God as causes of CVD (Boateng *et al.*, 2017). The gaps between knowledge of CVD and CVD risk factor are important barrier that lead towards improvising more effective preventive strategy of CVD. Knowledge of clinical signs of CVD are essential for the entire community member in order to enhance early recognition the persons' health condition especially among health care provider. From the previous study, there were a proportion of respondents who unable to identify any symptoms of CVD which ranged from 7.0% of academic staff in University of Nigeria to 75.1% among general population in Uganda (Boateng *et al.*, 2017). Therefore, it could be seen that there was poor knowledge of CVD in rural area rather than in urban city. Nevertheless, from the past study done in Kuantan where the population consist of health-related programs students shown that most of them had learnt and known about CVD from the teaching and learning session (Ibrahim *et al.* 2016).

There have been reported that age, family history, education and type of residence were included in associated factors that can lead towards level of knowledge. Since that, a review had been done to identify low levels of knowledge and awareness of CVD, its associated risk factors and clinical signs of CVD in sub-Saharan African countries (Boateng *et al.*, 2017). In the previous studies conducted in Uganda and Benin, it shows

that there is poor of knowledge among the population since they were unable to identify which organ affected by stroke (Boateng *et al*, 2017). However, there were teachers within population have knowledge of clinical signs of CVD. Therefore, result of this review reported overall low knowledge regarding CVD which are consistently cause the risen of CVD incidence in sub-Saharan African populations.

Taking this into an account, even though the person has knowledge on CVD but they do not take any steps in reducing its risk factor, the number of cases will still keep on increasing. Hence, it will result in high mortality rate in those country.

2.2.3 Attitudes towards CVD Risk Reduction

From the previous study in Kelantan, the population had indicated good attitude due to their awareness toward the healthy lifestyle (Mohammad *et.al.*, 2012). The awareness of healthy lifestyle can be easily reached throughout the social media nowadays. From Clinical Practice Guideline (CPG) of Primary and Secondary Prevention of Cardiovascular disease (2017), has state that a person associated with CVD disease should be counselled on lifestyle modification. Therefore, the efforts on behavioral changes should not be neglected to ensure the effectiveness of modifying lifestyle habits.

There are four specific lifestyle modification that have been focused in CPG of Primary and Secondary Prevention of Cardiovascular disease (2017) which including poor nutrition, tobacco usage, physical inactivity, and obesity. The social media today have successfully promoted awareness regarding healthy eating and regular exercise. However, according to the previous study done by Mohammad *et al.*, (2012), figure out the attitude of women regarding smoking, there were about 20% insist to keep smoking and not agree regarding being a passive smoker in which passive smoking also cause them to be included as persons at risk for CVD. Health care professionals are expected to have positive attitude

towards lifestyle modification especially those who are living with family history of CVD. Patients will have low trust towards the staffs who physically seems like having a sedentary lifestyle. Same goes to the undergraduate students who are going to clinical training facing the patients in the hospital, they should be the one that patient can rely on especially within medical, dental and nursing students.

2.2.4 Practice in Preventing Occurrence of CVD

Physical Activity

According to the previous study, only a few numbers which less than half of adults meet the minimum recommendation for regular aerobic exercise, but there were lesser number of young people were likely to meet the recommended standard (less than 20% of adolescents) in performing daily physical activity with recommendation of 60 minutes or more every day (Anon n.d.).

Centers for Disease Control and Prevention and the Physical Activity Guideline for American 2018, cited by James M. Rippe (2019) have recommended to practice physical activity at least 150 minutes per week for moderate intensity aerobic exercise or spend at least 75 minutes times 2 days in a week of vigorous exercise and muscle strengthening activities. Physical Activity Guidelines have reported in 2018 regarding relationships of moderate to vigorous physical activity to all-cause mortality. It shows positive result with no evidence of increased risk at high end by applying only modest amount of physical activity per week. Hence, physical activity significantly can reduce the risk of developing hypertension in the first place among adult (Anon n.d.)

Diet

Few studies have been made to figure out which type of diet are suits enough in reducing risk for CVD, thus the nutritional guideline offered by the American Heart Association (AHA) has recommend a better dietary pattern is through having high fiber diet with higher number of fruits and vegetables and lower in red and processed meat for those adults who consume alcohol. By following the authentic dietary guideline, people can balance their calorie intake thus maintaining healthy weight in order to reduce risk of CVD (Anon n.d.).

Weight

Moreover, the distribution of body fat also carries additional risk factor for CVD since obesity is one of the risk factors for CVD. AHA had published guideline for effective obesity management by including five major recommendations. First, use Body Mass Index (BMI) before establishing criteria that is going to lead to potential health risk. Second, advise patient about the benefit of having a better lifestyle changes in which it can lead to weight loss while with greater weight a person will loss the greater health benefits. Third, have a prescribed diet by the nutritionist to reduce caloric intake. Fourth, patients who are overweight or obese should be enrolled in weight lose delivered program of six months or longer to ensure effective intervention taken. Lastly, patients should be advised with surgical intervention, bariatric surgery among patients' BMI over than 40 kg/m² or BMI \geq 30 kg/m² with obesity-related comorbid conditions (Crossan and Sheer 2022)

Smoking

The prevalence of cigarette smoking among men is higher than women which 18 out of 100 men are still smoking while 14 out of 100 women are still smoking. However, the

different prevalence does not lead to different health risk. Both genders are still prone to be at risk for CVD. But, it is different towards person who stop smoking, in which they have substantial benefit or CVD risk reduction.

These four specific lifestyle behaviors should be modified by following the recommended guideline to avoid getting other health risk. Otherwise, CDC has presented with “7 Strategies to Live a Heart-Healthy Lifestyle in order to lower the heart disease risk and the strategies are as follows:

1. Learn your health history
2. Eat a healthy diet
3. Move more, sit less
4. Quit smoking
5. Take medicine as directed
6. Rethink your drink by taking more plain water instead sugary drink
7. Monitor your blood pressure at home

(Anon n.d.)

2.3 Theoretical and Conceptual Framework of the Study

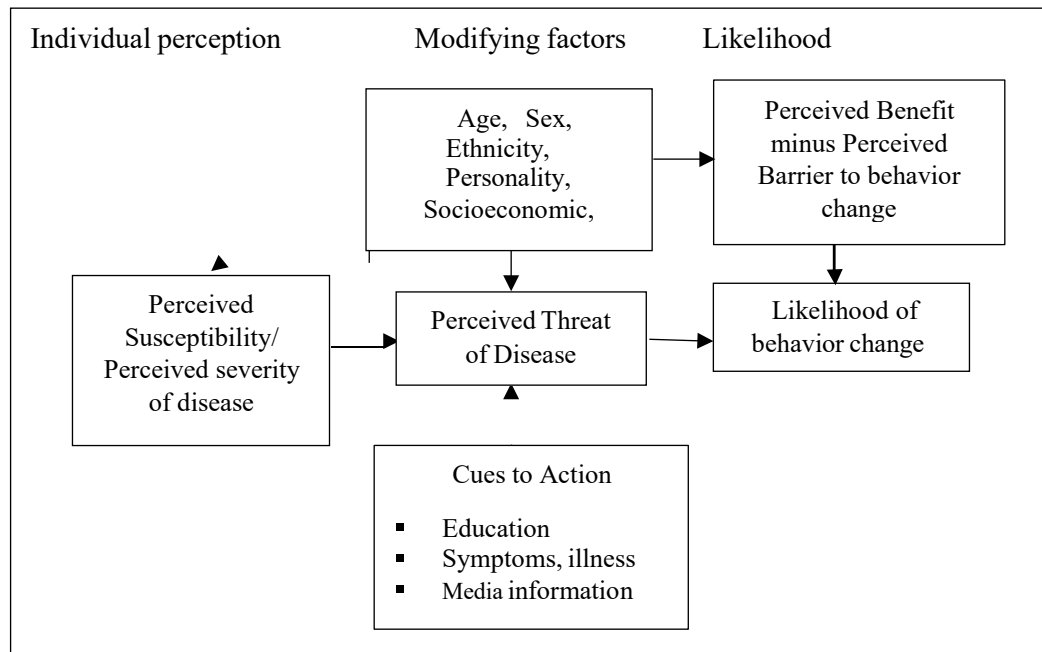


Figure 2.1: Framework of Health Belief Model regarding CVD (Adopted from Hochbaum et al., 1950)

The Health Belief Model (Hochbaum et al., 1950) is a conceptual framework that is widely used in health behavior research. Originally, Health Belief Model was developed by social scientist in U.S Public Health Service in the early 1952 to understand the reason of most people fail to adopt disease prevention strategies or screening tests for early detection of the disease. After a while, framework has been used in indicating patients' response to symptoms and compliance with medical treatments. A person was more likely interested in adopting the behavior when they were suggested to believe the personal threat of the disease together with the effectiveness of recommended health behavior (Rosenstock, 1974). There were two components of health-related behavior that are essentials in this theory which are the desire

to avoid illness and belief that specific health action will prevent or cure illness. Anyhow, the person's action toward health behavior depends on their perceptions of the benefit and barriers related to health behavior. This model is going to help evaluating final year nursing students' knowledge, attitude and practice towards CVD risk factors affects the behavior among individuals regarding practice in preventing risk factor of CVD.

There were four original tenets of Health Belief Models that are comprises of perceived susceptibility, perceived severity, perceived benefits and perceived barriers. Perceived susceptibility is referring to the persons' subjective perception of the risk of an acquiring disease. The persons' feeling of personal vulnerability towards disease may vary between others.

Second is perceived severity. It is referring to the person's feeling towards how serious of leaving any disease untreated. In this case, a person often considers the medical and social consequences when evaluating the severity.

Third is perceived benefits. It refers to a person's perception of the effectiveness of different actions taken for disease control. A person often relies on consideration and evaluation of both perceived susceptibility and perceived benefit before taking any action.

Fourth is perceived barriers. This component refers to a person's feeling on the challenges to performed a recommended health behavior. This course may cause a person's feeling of barriers that lead them to a benefit analysis.

There were two additional tenets that were constructed as research about the evolvement of this theory which are cue to action and self-efficacy. Cue to action is needed to trigger the decision-making process in order to accept the action for health

recommendation. Cues can be internal or external. Lastly, self-efficacy that referring to the person's confidence level in their ability to perform health behavior.

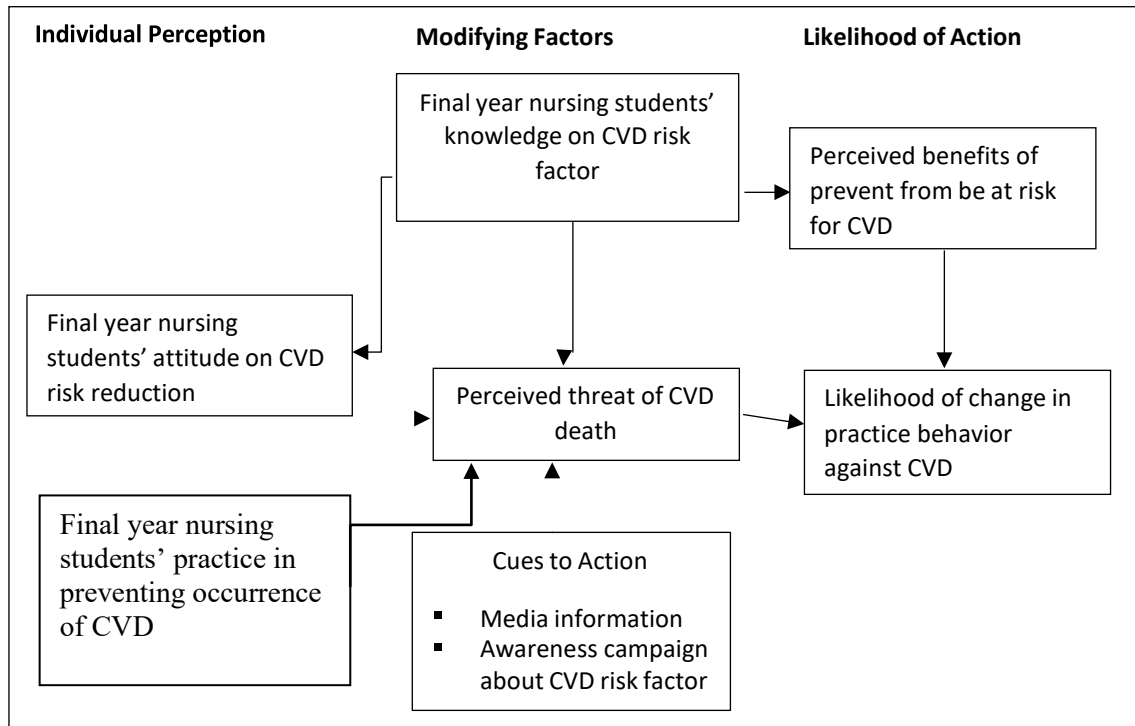


Figure 2.2: Framework of Health Belief Model regarding CVD (Adopted from Hochbaum et al., 1950)

CHAPTER 3: METHODOLOGY

3.1 Introduction

This chapter consist of research methodology including research design, study setting and population, sampling plan, sampling criteria, sample size estimation, sampling method, instrumentation, validity and reliability, variables, sampling plan, study flow chart, ethical consideration and data analysis.

3.2 Research Design

This study used quantitative research and approached to cross-sectional design.

3.3 Study setting and population

This study was conducted at Health Campus Universiti Sains Malaysia, Kubang Kerian, Kelantan. This campus is within 5km to Kota Bharu from Kubang Kerian. Health Campus consist of three school including School of Medical Sciences, School of Dental and School of Health Sciences which this study will be done.

The target population of this study was the final year nursing students in Health Campus USM.

3.4 Sampling Plan

In this study, the population of final year nursing students will be selected. The data collection from the respondents started from April 2022 until June 2022.

3.4.1 Sample criteria - Inclusion and Exclusion Criteria

Inclusion Criteria

The following criteria must be meet by the participants to be included in the study:

Final year nursing students from Health Campus, Universiti Sains Malaysia

including students from:

- Year three diploma in nursing
- Year four degree in nursing

Exclusion criteria

Subjects will be excluded from this study if they are fulfilling one of the following.

- Subjects who have been diagnosed with any type of cardiovascular disease.

3.4.2 Sample Size Estimation

In this study, the calculation of sample size is used for objective 1,2 and 3. Raosoft software was used to calculate the sample size with margin error of 5%, confidence level of 95%, population size of 96 and response distribution of 50%. Thus, the recommended sample size for this study was 77.

With a 10% of dropout rate, the number of participants required in this study as follow:

n final year nursing students in USM = 77 ± dropout 10%

$77 \pm 8 = 85$ participants

What margin of error can you accept? 5% is a common choice	<input type="text" value="5"/> %
What confidence level do you need? Typical choices are 90%, 95%, or 99%	<input type="text" value="95"/> %
What is the population size? If you don't know, use 20000	<input type="text" value="96"/>
What is the response distribution? Leave this as 50%	<input type="text" value="50"/> %
Your recommended sample size is	77

Figure 3.1 (*Sample Size Calculator by Raosoft, Inc., n.d.*)

3.4.3 Sampling Method

In this study, purposive sampling was used upon selecting the member of the population. Precisely, 96 participants were identified through the name list of active student's final year diploma and degree nursing which already obtained the permission to use it. Students who meet the criteria were chosen by following the sequence of the name list. In order to recruit 85 students as respondents in my study, simple random sampling was used to select the subject. By using randomizer, the name list were entered and the randomizer selected 85 subjects.

3.5 Instrumentation

3.5.1 Instrument

A set of questionnaires related to Knowledge, Attitude and Practice (KAP) towards CVD risk reduction will be used in order to obtain the most relevant data on knowledge, attitude and practice of CVD risk reduction among undergraduate students in USM through google form. The permission to utilize the instrument has been approved by the original author.

There were four section made in the google form. For section A was three questions of demographic data which require respondents' personal information such as age, gender, and course of study.

Section B was close-ended questions. In this section, 16 items used to assess knowledge on CVD risk factors which required the respondents to answer "True" or "False" as the answer for the statement given.

For section C, 12 items provided regarding respondents' attitude towards CVD risk reduction. This section was designed to know the respondents' perspective towards the statement given using a Five-point Likert scale of agreement from "strongly agree" to "strongly disagree".

In section D, 10 items asked about respondents' practices towards preventing occurrence of CVD by using scheme of four answer choices: "Always", "Frequent", "Seldom" and "Never". Always means at all time, frequent means happening often, seldom means not often or almost never, never means not ever or not at any time (IbrahimM. et al., 2016).

3.5.2 Validity and Reliability

The content of the questionnaire has been validated by the original author and the content validity was verified by expert of International Islamic University Malaysia (IIUM) after conducting pilot study among 15 students. The Cronbach Alpha for this questionnaire was 0.669.

3.6 Variables

3.6.1 Variable Measurement

This study had identified three different variables which were the dependent variables and the independent variables. The variables were as follow:

Table 2.0 Dependent and independent variables

Independent variables	<ul style="list-style-type: none">• Practice in preventing occurrence of CVD among final year nursing students.
Dependent variables	<ul style="list-style-type: none">• Attitude toward CVD risk reduction among final year nursing students.

Variable Scoring

There were 38 items that were provided. Five items are structured at socio-demographic data. 16 items provided in section B which related to knowledge on CVD risk factors, 12 items provided in section C regarding attitude towards CVD risk reduction and in section D, 10 items allocated which indicate the practice toward preventing occurrence of CVD. For section B, 1 point will be assigned for the correct answer while 0 points assigned for the incorrect answer. The scoring for the level of knowledge was stated below:

Table 3.0: The scores and level of knowledge

Marks	Level of knowledge
0-5.28	Low
5.29-10.56	Moderate
10.57 – 16.00	High

Meanwhile, in section C that consists of 12 items were scored based on the points assigned for each degree in 5-point Likert scale. Each of the item scores ranges from strongly disagree (1), Disagree (2), neutral (3), Agree (4) and strongly disagree (5). To interpret the level of attitude, the score divided into three level. Item 12 used reversed scoring.

Table 3.1: The scores and level of attitude

Marks	Level of attitude
0-19.8	Low
19.97-39.6	Moderate
39.7 – 60.00	High

In section D, 10 items will be provided. The 4-point Likert scale is used. Each item scores ranges from always (4), frequent (3), seldom (2), and never (1). However, the last four items in this section will be reversely scored in as always (1), frequent (2), Seldom (3) and never (4) since the statement in the items were negative. The score divided into three levels as stated below:

Table 3.2: The score and level of practice

Marks	Level of practice
0-13.2	Low
13.3 -26.4	Moderate
26.5 – 40.0	High

3.7 Data Collection Plan

All course representatives was approached in order to get each WhatsApp phone number to be contacted before collecting data. Researcher approached all respondents by course per week and briefly explain regarding purpose of this study. At the first week of data collection started with data collection of the degree in nursing students which only take about three days to complete answered the questionnaire. On the first day of data collection, researcher approached all respondents personally through WhatsApp application, pass the consent form and if they are agreed to participate, then the questionnaire in a Google form format will be given. The questionnaire was estimated to be completed in approximately 15 -20 minutes. Reminder was be sent through the same application when respondent did not respond to the questionnaire. The procedure was going to be the same for the next week in which researcher approached diploma in nursing students.

3.7.1 Study Flow Chart

