KNOWLEDGE AND ATTITUDE REGARDING MENSTRUAL DISORDERS AMONG UNDERGRADUATE STUDENTS AT SCHOOL OF HEALTH SCIENCES, UNIVERSITI SAINS MALAYSIA

RABIATUL ATHIRAH RUSMAN
134154

SCHOOL OF HEALTH SCIENCES
UNIVERSITI SAINS MALAYSIA

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BY

RABIATUL ATHIRAH RUSMAN

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

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CERTIFICATE

This is to certify that the dissertation entitled "Knowledge and Attitude Regarding Menstrual Disorders among Undergraduate Students at School of Health Sciences, Universiti Sains Malaysia" is the bona fide record of research work done by Ms Rabiatul Athirah binti Rusman during the period from September 2019 to August 2020 under my supervision. I have read this dissertation and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation to be submitted in partial fulfilment for the degree of Bachelor of Nursing (Honours).

Main supervisor,

……

ASSOC. PROF. DR JAYAH K. PUBALAN
Senior Lecturer
School of Health Sciences
Universiti Sains Malaysia
Health Campus
16150 Kubang Kerian
Kelantan

Date: …….

DECLARATION

I hereby declare that this dissertation is the result of my own investigations, except where otherwise stated and duly acknowledge. I also declare that it has not been previously or concurrently submitted as a whole for any other degrees at Universiti Sains Malaysia or other institution. I grant Universiti Sains Malaysia the right to use the dissertation for teaching, research, and promotional purposes.

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RABIATUL ATHIRAH BINTI RUSMAN (134154)

Bachelor of Nursing (Honours)

School of Health Sciences

Universiti Sains Malaysia

Health Campus

16150 Kubang Kerian

Kelantan

Date: ……

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LIST OF ABBREVIATION

PPSK	: Pusat Pengajian Sains Kesihatan
PPSP	: Pusat Pengajian Sains Perubatan
PPSG	: Pusat Pengajian Sains Pergigian
USM	: Universiti Sains Malaysia
HBM	: Health Belief Model
SPSS	: Statistical Package for Social Science

PENGETAHUAN DAN SIKAP TERHADAPAT GANGGUAN HAID DI KALANGAN PELAJAR SARJANA MUDA DI PUSAT PENGAJIAN SAINS KESIHATAN, UNIVERSITI SAINS MALAYSIA

ABSTRAK

Gangguan haid adalah lazim berlaku dalam kalangan golongan muda seperti pelajar sarjana muda. Kurang kesedaran terhadapap gejala dan rawatan awal boleh menyumbang kepada masalah ginekologi. Walaupun pelajar sarjana muda kelihatan sudah biasa mengalami gangguan ini, tahap pengetahuan dan sikap mereka terhadap gangguan ini masih tidak dapat dikenal pasti. Oleh sebab itu, kajian ini bertujuan untuk mengenalpasti tahap pengetahuan dan sikap pelajar sarjana muda di Pusat Pengajian Sains Kesihatan, USM Kampus Kesihatan. Sejumlah 231 orang pelajar sarjana muda, berumur antara 18 hingga 29 tahun daripada lapan program (Audiologi dan Patologi Pertuturan, Bioperubatan, Dietetik dan Pemakanan, Kesihatan Persekitaran dan Pekerjaan, Sains Forensik, Sains Sukan, Sinaran Perubatan, Ijazah dan Diploma Kejururawatan) terlibat di dalam kajian ini. Kajian ini telah dijalankan dengan menggunakan reka bentuk keratan rentas. Data telah diperolehi melalui satu set soal selidik yang diadaptasi dari Nor Asyikin et al. (2016) dan dianalisa menggunakan SPSS versi 24. Ujian Pearson Chi-Square telah digunakan untuk mengenalpasti faktor yang berkaitan dengan tahap pengetahuan dan sikap pelajar. Kebanyakkan responden kajian ini mempunyai tahap pengetahuan yang baik mengenai gangguan haid (n=202, 87.4%). Diantara empat faktor yang mempengaruhi, hanya Program Pengajian didapati signifikan dengan tahap pengetahuan mengenai gangguan haid (p = 0.002). Selain daripada itu, kebanyakkan pelajar universiti mempunyai tahap sikap yang rendah terhadap gangguan haid (n= 158, 68.4%). Di antara empat faktor yang sama juga, hanya Program Pengajian didapati signifikan dengan tahap sikap pelajar mengenai gangguan haid (p = 0.001). Penemuan ini menunjukkan keperluan untuk meningkatkan tahap kesedaran dan menambah baik tahap pengetahuan dan sikap berkenaan gangguan haid dalam kalangan pelajar universiti sebagai langkah pencegahan masalah ginekologi di masa hadapan.

Kata Kunci: *Gangguan Haid, Tahap Pengetahuan, Tahap Sikap, Pelajar Sarjana Muda*

KNOWLEDGE AND ATTITUDE REGARDING MENSTRUAL DISORDERS AMONG UNDERGRADUATE STUDENTS AT SCHOOL OF HEALTH SCIENCES, UNIVERSITI SAINS MALAYSIA

ABSTRACT

Menstrual disorders are very common among young adults like undergraduate students. Lack of awareness towards the symptoms and early treatment can lead to another gynaecology diseases. It seems that the female undergraduate students used to experience this disorder however it is unsure that their knowledge and attitude towards the symptoms that they experienced were good or poor. Thus, this study aimed to assess the knowledge and attitude level regarding menstrual disorders among undergraduate students at School of Health Sciences, USM Health Campus. Total of 231 undergraduate students, aged between 18 to 29 years old from the eight programmes (Audiology and Speech Pathology, Biomedicine, Dietetic and Nutrition, Environmental and Occupational Health, Forensic Science, Sport Science, Medical Radiation, Degree Nursing and Diploma Nursing) involved in this study. A cross-sectional study design was employed. Data was collected through a set of questionnaires adapted from Nor Asyikin et al. (2016) and analysed using SPSS version 24. Pearson Chi-Square Test was used to identify the association between socio-demographic characteristics with knowledge and attitude level. The majority of the respondents in this study had good knowledge level regarding menstrual disorders (n=202, 87.4%). Among the four factors, only Program of Study was found significant association with knowledge level regarding menstrual disorders (p= 0.002). On the other hand, most of the undergraduate students had poor attitude level regarding menstrual disorders (n= 158, 68.4%). Among the four factors also, only Program of Study was found significant association with attitude level regarding attitude (p = 0.001). These findings revealed that there was a need to increase university students' awareness and improve their knowledge and attitude level regarding menstrual disorders among undergraduate students as a preventive measure for further gynaecology problems.

Keywords: *Menstrual Disorders, Knowledge Level, Attitude Level, Undergraduate Students*

CHAPTER 1

INTRODUCTION

1.1 Background of Study

Menstruation is a natural phenomenon that involving the discharge of blood from the uterus through the vagina that occur at more or less regular monthly intervals during the reproductive life of females that begins during adolescence (Rafique & Al-Sheikh, 2018). According to World Health Organization (2019), adolescence is defined as the age between 10 and 19 years old whereby significant physical, physiological, and psychological changes can be seen including menstruation. Serious gynaecological pathology may be rare in this age group, but menstrual disturbances are common and can add further disruption to this reproductive maturation phase for these adolescences and their families (Sivadasan et al., 2014).

According to Nor Asyikin et al. (2016) have revealed high prevalence in menstrual disorders among teenagers and young women in Malaysia. Common menstrual disorders reported were 96% in premenstrual syndrome followed by 94% having dysmenorrhoea, 47% experienced heavy bleeding and 18% for irregular bleeding, oligomenorrhoea and amenorrhoea. Sultan and Sahu (2017) also reported that around 52% of adolescent Indian girls complain of dysmenorrhoea while 14% has irregular menses, 22% have backache and 10% excessive bleeding and only 2% complains of breast pain or tenderness. While in Italy, Rigon et al. (2012) stated that 3% of the girls having polymenorrhagia, 3.4% experiences oligomenorrhea, 56% from the girls reported having abdominal pain due to menstruation and about 6.2% of the girls were suffering from dysmenorrhea. These revealed that there was common pattern of menstrual disorders that

affected young women across many countries and frequent menstrual disorders reported during adolescence is dysmenorrhea and followed by premenstrual syndrome.

These menstrual disorders can be seen as an earlier symptom for another diseases for example hormonal imbalances, structural abnormalities in the uterus, thyroid problems, blood clotting disorders, liver, or kidney disease, or ectopic pregnancy (Healthy Women, 2019). These diseases can be treated and avoided by gaining adequate knowledge regarding menstrual disorders. According to Arlinghaus and Johnston, (2018) knowledge is not enough to change behaviour or attitudes but it is important because it is critical to explain to the person why behavioural changes need to be made. Thus, this explain the importance of knowledge and attitude in preventing further complication due to menstrual disorders.

1.2 Problem Statement

Menstrual disorders are one of the major problems that women all around the world may encounter. Menstrual disorders are generally perceived as secondary health concerns and it is a reason for increasing 1% of gynaecological visit (Sivadasan et al., 2014). It can be seen that awareness on menstruation disorder still in shallow among women society especially in adolescent girls where there only seek for medical intervention when the disorder already become a chronic health problem. According to Esimai and Esan (2010), awareness on menstrual disorder was poor where only 29% from the student alert with the menstrual disorder and only few of them decided to seek help for menstrual abnormalities.

Sultan and Sahu (2017) reported that most of the adolescent girls had incomplete and accurate information regarding menstruation as they found that most of the girls (41%) did not know the source of menstrual bleeding. The girls mostly gain information regarding menstruation only from mother (70%) which same with results obtained by Koujan et al. (2017), Santina et al. (2013), Karout et al. (2012) and Omidyar and Begum (2010). Hence, inaccurate information can affect their perception and belief towards menstrual disorders. Negative perception towards menstrual disorder can lead to negative attitude and practices. This is very worrisome because negative practice such as improper menstrual hygiene can induce to other health concern. Dasgupta and Sarkar (2008) found that the attitude towards menstruation depends on how much the information, knowledge, and level of awareness an individual acquired. This situation may cause the girls to become ignorance with their disorder and in the long term may place them at risk for more serious gynaecology diseases.

Menstrual disorders do have economic consequences in terms of health care cost due to consumption of expensive medication and laboratory tests. As well as these can give impact on their normal functioning and social life as menstrual disorder are responsible for changes in physical, behavioural, and emotional of women during menstruation. There can be other consequences such as limitation on attendance at work and school absenteeism among female adolescents which can influences academic achievements and employment prospects (Karout et al., 2012)

The researcher experiences with friends and colleagues regarding menstrual disorders also give some ideas to conduct this study. According to researcher's observation, some of friends do have experience with menstrual disorders but mostly treat it as common pain that they have to gone through in each menstrual cycle. Some of them also does not know the important of remembering and knowing their menstruation cycle.

The most significant experience that inspired the researcher is the death of closed relative due to her lack of awareness in seeking early medical treatment for her menstrual disorders that resulting to final stage cervical cancer.

Through this study, the knowledge and attitude level regarding menstrual disorder were assessed among female undergraduate students in School of Health Sciences, Universiti Sains Malaysia Health Campus.

1.3 Research Objectives

1.3.1 General Objective

To assess the knowledge and attitude level regarding menstrual disorders among undergraduate students at School of Health Sciences, USM Health Campus.

1.3.2 Specific Objectives

1) To identify the knowledge level regarding menstrual disorder among undergraduate students at School of Health Sciences, USM Health Campus.
2) To identify the attitude level regarding menstrual disorder among undergraduate students at School of Health Sciences, USM Health Campus.
3) To determine the association between selected demographic data (age, race, program of study and information source regarding menstruation and menstrual disorders) with knowledge level regarding menstrual disorders among undergraduate students at School of Health Sciences, USM Health Campus.
4) To determine the association between selected demographic data (age, race, program of study and information source regarding menstruation and menstrual disorders) with attitude level regarding menstrual disorders among undergraduate students at School of Health Sciences, USM Health Campus.

1.4 Research Questions

1) What is the knowledge level regarding menstrual disorder among undergraduate students at School of Health Sciences, USM Health Campus?
2) What is the attitude level regarding menstrual disorder among undergraduate students at School of Health Sciences, USM Health Campus?
3) Is there is any association between selected demographic data (age, race, program of study and information source regarding menstruation and menstrual disorders) with the knowledge level regarding menstrual disorder among undergraduate students at School of Health Sciences, USM Health Campus?
4) Is there is any association between selected demographic data (age, race, program of study and information source regarding menstruation and menstrual disorders) with the knowledge level regarding menstrual disorder among undergraduate students at School of Health Sciences, USM Health Campus?

1.5 Research Hypotheses

Hypothesis 1

Ho: There is no significant association between selected demographic data (age, race, program of study and information source regarding menstruation and menstrual disorders) with the knowledge level regarding menstrual disorder among undergraduate students at School of Health Sciences, USM Health Campus

HA: There is a significant association between selected demographic data (age, race, program of study and information source regarding menstruation and menstrual disorders) with the knowledge level regarding menstrual disorder among undergraduate students at School of Health Sciences, USM Health Campus

Hypothesis 2 Ho: There is no significant association between selected demographic data (age, race, program of study and information source regarding menstruation and menstrual disorders) with the attitude level regarding menstrual disorder among undergraduate students at School of Health Sciences, USM Health Campus

HA: There is a significant association between selected demographic data (age, race, program of study and information source regarding menstruation and menstrual disorders) with the attitude level regarding menstrual disorder among undergraduate students at School of Health Sciences, USM Health Campus

1.6 Conceptual and Operational Definitions

Knowledge

Knowledge is defines as facts, information, and skills acquired through experiences or education; the theoretical or practical understanding of a subject. Knowledge also refers to awareness or familiarity gained by experience of a fact or situation (Oxford Dictionary, 2019). In this study, female student's understanding and knowledge regarding menstrual disorders have been assessed in the section B (Knowledge) of the questionnaires

Attitude

According to Psychology Dictionary (2013), attitude is an enduring and general evaluation or cognitive schema relating to an object, person, group, issue, or concept. Strength and valence can be vary. Thus, an attitude can be negative or positive. This can

also refer to any subjective belief or evaluation associated with an object. In this study, female student's attitude towards menstrual disorders will be determined in the section C (Attitude) of the questionnaires.

Menstrual Disorders

Menstrual disorders are the discomfort that women experiences during menstruating which affected by several factors depending on the health, lifestyle, economic status and etc. of the person. It also affecting women's monthly menstrual cycle (Naveed et al., 2013). In this study, menstrual disorders will be referring to poly or oligomenorrhea, amenorrhea, menorrhagia, dysmenorrhea, and premenstrual syndrome.

Undergraduate Students

An Undergraduate student is defined as a university student who has not received a first degree (Cambridge University Press, 2019). In this study, the undergraduate students only include the female gender from School of Health Sciences, Universiti Sains Malaysia.

1.7 Significance of the Study

This study provided the information on the knowledge and attitude level regarding menstrual disorders among undergraduate female students in School of Health Sciences, Universiti Sains Malaysia. The information gained can help in improving awareness and alertness regarding women menstruation cycle among female students at School of Health Sciences, USM. Thus, improving the quality of life when the women have proper information regarding menstruation and society start to see women in a more accurate

light and respect menstruation as an essential human process nor a subject of shame or nervous laugh.

It is hoped also that the findings will assist the needs for health education especially for the female adolescent who just experiences menstruation in order to prevent, reduce the effect of menstrual diseases and encourage them to seek early treatment or suitable intervention if there any abnormalities present. Menstrual disorders still be considered as sensitive issue to be openly discussed especially in certain culture that associate menstruation with mystical phenomenon which closely related with taboo. By advancement in knowledge regarding menstrual disorders, it is hope that the society able to change this stereotype on menstrual disorders through the health education and awareness programme plan in future.

CHAPTER 2

LITERATURE REVIEWS

2.1 Introduction

This chapter reviewed the current literature related to menstruation and menstrual disorders in terms of knowledge, attitude, and menstrual disorders. The literature search was done by using main keywords menstrual disorders including knowledge and attitude on menstruation and menstrual disorders. This chapter also discussed the theoretical framework that was used in this study.

2.2 Menstrual Disorders

They are four types of menstrual disorders according to their menstrual characteristics. Type 1 is menstrual disorders of intensity where it deals with the intensity of menstruation including poly and oligo menorrhea. Type 2 is called as disorders of frequency where it considers the frequency menstruation and includes also poly and oligo menorrhea. Type 3 is the disorder of duration which considers the duration of menstruation that includes amenorrhea and menorrhagia while Type 4 is disorders of pain which includes dysmenorrhea and premenstrual syndrome (Koujan et al., 2017).

Polymenorrhea is a term used to describe a menstrual cycle that is shorter than 21 days compared to normal menstrual cycle which is between 24 to 38 days long (Healthline, 2018). Oligomenorrhea refers to menstrual periods that occur more than 35 days. It usually is not a cause of concern, except if periods occur less 3 months apart (Naveed et al., 2013).

Amenorrhea may be primary or secondary. Primary amenorrhea is defined as the failure to reach the menarche where there is no pubertal development by 13 years of age and five years after breast development or if the patient is 15 years or older. Secondary amenorrhea is the interruption in normal regular menses for three months until six months (Klein & Poth, 2013). Secondary amenorrhea is more common than primary amenorrhea according to Naveed et al. (2013). However, secondary amenorrhea mostly causes by pathological reasons which can be attributed to polycystic ovary syndrome , hypothalamic amenorrhea, hyperprolactinemia, or primary ovarian insufficiency (Klein & Poth, 2013)

Menorrhagia is menstrual bleeding that more than 8-10 days with loss of blood over 80 ml per cycle (Naveed et al., 2013). Menorrhagia could vary from irregular bleeding to heavy menstrual bleeding which interferes with the women's physical, emotional, social, financial, and material quality of life (Bhatiyani et al., 2017).

Dysmenorrhea also can be primary and secondary. Primary dysmenorrhea is defined as painful menses in women with normal pelvic anatomy that usually begins during adolescence (French, 2005). Symptoms shown including crampy lower abdominal and pelvic pain that radiates to thighs and back without associated pelvic pathology (Naveed et al., 2013). Secondary dysmenorrhea is result of an existent pelvic discomfort and it begins several years after the menarche and the pain last more during menstruation (Botell & Bermudez, 2012). It frequently associated with pelvic pathology such as uterine fibroids, endometriosis and pelvic inflammatory (Naveed et al., 2013).

Premenstrual syndrome used to affect millions of women between ages of 25 and 35 years old during their reproductive years. It characterized by emotional and physical symptoms that consistently occur during the luteal phase of the menstrual cycle (Dickerson et al., 2003). Steiner and Born, (2000) claimed that more than 200 symptoms

have been associated with premenstrual syndrome, but irritability, tension, and dysphoria are the most prominent and consistently described.

Among these menstrual disorders, dysmenorrhea was relatively common among the female followed by premenstrual syndrome. A cross-sectional school survey on menstruation among adolescent girls in Malaysia by Lee et al. (2006) reported that 68 % from 2411 female participants having dysmenorrhea supported by Abdelmoty et al., (2015) where 93% from sample of 402 respondents also suffer from dysmenorrhea. This result however was at variance with Houstan et al. (2006) as the study suggesting that premenstrual syndromes are the most prevalent menstrual disorders. Premenstrual syndrome also closely related with dysmenorrhea as adolescent girls commonly complain of premenstrual syndrome when they actually experiencing dysmenorrhea or psychosocial problems (McEvoy et al., 2004).

Menstrual patterns are also influenced by a number of host and environmental factors (Rowland et al., 2002). Behavioural risk factors such as smoking, alcohol consumption, attempts to lose weight and physical activities may increase the prevalence for menstrual disorders especially smoking. Smoking seemed to increase the prevalence of menorrhagia and irregular cycle. It also shown there is an association between smoking, short cycle length and irregular cycles according to Lee et al. (2006). Other factors associated with menstrual disorders include attempts to lose weight as there is an association between menstrual disorders especially PMS with increasing body mass index (BMI) according to Lee et al, (2006). However, the association between being overweight and menstrual dysfunction is still inconsistence. Another potentially modifiable risk factors toward menstrual disorders is mental health problems including depression, anxiety, and disruption of social network (Rowland et al., 2002).

2.2.2 Knowledge on Menstruation and Menstrual Disorders among Female

Menstruation is a normal physiological process in the female reproductive life that signifies a transition from girlhood to womanhood. However, this transitional period is accompanied by a change in the physical, psychological, and social aspects of a women's life reflecting the culture, beliefs, and menstrual-related misconception of their societies. Thus, correct knowledge is very important for the women to adequately prepare themselves and prevent reproductive ill-health (Koujan et al., 2017).

In regard of knowledge on menstruation and menstrual disorders, it is still low level in both men and women, however, women knowing more that the men. This can be happened because the women experiences the menstruation itself compared to men (Nor Asyikin et al., 2016). Study by Abdelmoty et al. (2015) in Egypt revealed that women knowledge regarding menstruation is also incomplete as 91% from the female respondent in the study stating that menstruation has a "cleansing" effect ridding the body from "dirt" while only approximately 9% correctly know about the source and function of menstruation. Incomplete knowledge among women may be happened as they only seek the information from their mother/sisters or they guessed about menstruation without consulting other peoples (Fehintola et al., 2017).

Seeking information from the mother is a good thing as the mother is more experienced and the connection of mother-daughter relationship can improve the effectiveness of learning but if the information provided were incorrect and no adequate enough for the daughter, the inadequate knowledge of mother was passed on to these young girls (Sultan & Sahu, 2017). However, the findings from Abdelmoty et al. (2015) and Fehintola et al. (2017) were in contrast from Olowokere et al. (2014) and Titilayo et al. (2009) studies that done in Nigeria where they reported that majority of the female

respondents had a good knowledge about menstrual disorders and discomfort associated with it. Differences in knowledge level reported by these studies may influenced by location of the study as menstrual practice and belief may be differences in certain culture and country.

2.2.4 Attitude on Menstruation and Menstrual Disorders among Female

Women's attitude towards menstruation are mixed, with positive and negative feelings and they different from culture to culture (Amaral et al., 2005). In a cross-sectional study on menstrual patterns and disorders among secondary school adolescents in Egypt, they suggested that the attitude towards menstrual disorders were shaped by largely negative cultural belief and influenced by a variety of factors such as genetic characters, environmental conditions, family demography, nutritional and health status. Half of the participants also decline in participate due to cultural menstrual taboos giving a response rate of 51.5% which is considerably low compared to other studies (Abdelmoty et al., 2015).

Some of the women still did not perceive the menstruation as natural process and considered menstruation and menstrual disorders that they encountered as a personal matter and feel uncomfortable in discussing it with other people which may produce confusion and a sense of inadequacy leading to negative attitude. They also did not anticipate the onset of menstruation as they felt that menstruation was bothersome, something that they did not like, and it was to be feared (Koujan et al., 2017). However, proportion of good attitude among women was good compared to the men according to Nor Asyikin et al., (2016). This is similar to a study conducted in New Delhi, India to examine the knowledge and attitude of men and women for menarche and menstruation, where more number of women had positive attitude towards menstruation (Kumar, 2016).

2.3 Factors Associated with Menstrual Disorders

There are several factors associated with menstrual disorders as reported in the literature. This includes lifestyle characteristics, body mass index (BMI), smoking, stress level, dietary habits, socio-demographic characteristics, and family history.(Rafique & Al-Sheikh, 2018; Bae, Park, & Kwon, 2018). Bhatiyani et al. (2017) highlighted the lack of awareness on these factors associated with menstrual disorders was a significant association with the prevalence of menstrual disorders. For the purpose of this study however, the researcher only focusing on sources of previous information regarding menstrual disorder and selected socio-demographic characteristics (age, race, program of study). While all the other factors will be excluded from this proposed study due to time and finances constrain.

2.4 Conceptual Framework

This study utilized the health belief model (HBM) as the conceptual framework. According to Champion and Skinner (2008), the HBM was developed in the 1950s by a group of United State Public Health Service social psychologists: Hochbaum, Rosenstock and Kegels. It has been used to explain how changes and maintenance of health-related behaviours guides health behaviour interventions.

This theoretical framework is one of the longest established theoretical models that were designed to explain health behaviour by better understanding people's beliefs about health (Nutbeam & Harris, 2002). According to Abraham and Sheeran (2005), beliefs provide a crucial link between socialization and behaviour. Beliefs are modifiable and can differentiate between individuals from the same background. If persuasive techniques can be used to change behaviour-related beliefs and such interventions result

in behaviour change, this provides a theoretical and practical basis for evidence-based health education.

HBM consists of four components that predict the actions of a person. The components include perceived susceptibility to the problem, perceived seriousness of consequences of problems, perceived benefits of specific action and perceived barriers to acting as shown (Champion & Skinner, 2008). Perceived susceptibility refers to the likelihood of getting a disease or condition. Thus, the HBM predicts that individuals who perceive that they are susceptible to a disease will engage in behaviours that would help reduce the risk of developing the disease. Second component of perceived severity where the HBM also suggests that the more serious that individuals perceive a health problem is, the more likely they will engage in behaviours to prevent is from occurring or reduce its severity. Third component of HBM which is perceived benefits, the HBM proposes that the more benefits that individuals perceive that a particular action will have regarding a perceived threat, the more likely they will engage in that behaviour regardless of objective facts regarding the effectiveness of the action. The last component of HBM perceived barriers where it suggests that the perceived benefits must outweigh the perceived barriers in order for behaviour change to occur (Champion & Skinner, 2008)

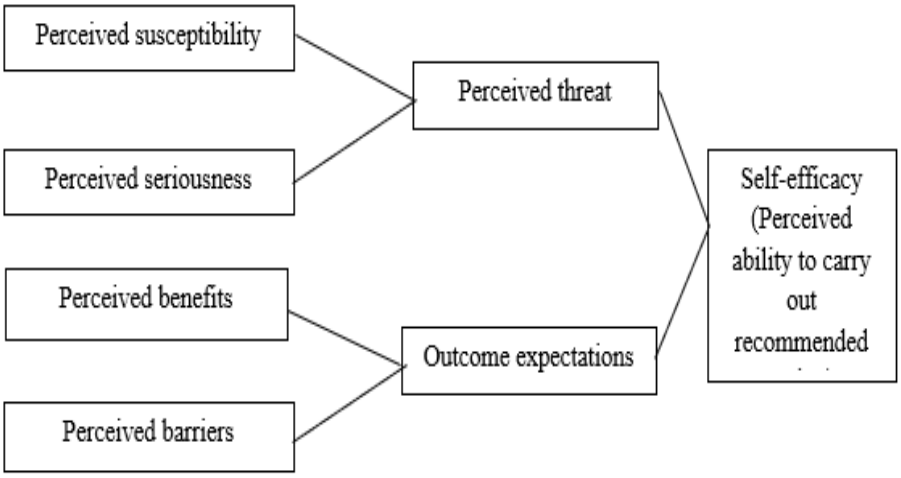

Figure 2.1: Theoretical Framework of HBM

(Adapted from Champion & Skinner, 2008)

As mentioned earlier, HBM used in this study help to guide the researcher to understand the undergraduate student's knowledge and attitude regarding menstrual disorders. Refer to Figure 2.2 for the conceptual framework of menstrual disorders modified from HBM.

Based on this model, the researcher assumed that undergraduate students need to alert that they were at risk for menstrual disorders. They should also know these menstrual disorders may lead to any gynaecology problems. By perceived susceptibility towards menstrual disorders, they will more employ in behaviours to prevent likeliness to get menstrual disorders or to reduce the severity. They perceived benefits of learning by producing positive attitude and perception on menstrual disorders for example seeking early treatment and be more open up in discussing menstrual related problem between male and female students. Comfort and motivation can be provided more accurately as both sides understand well how the disorders occurred. The benefits that the researcher

assume the undergraduates obtain will out weight the perceived barriers in behaviour change. All these components will lead to behaviour change as the students self-efficacy increase and they believe themselves with the knowledge they gain can lead to positive attitude toward menstrual disorders.

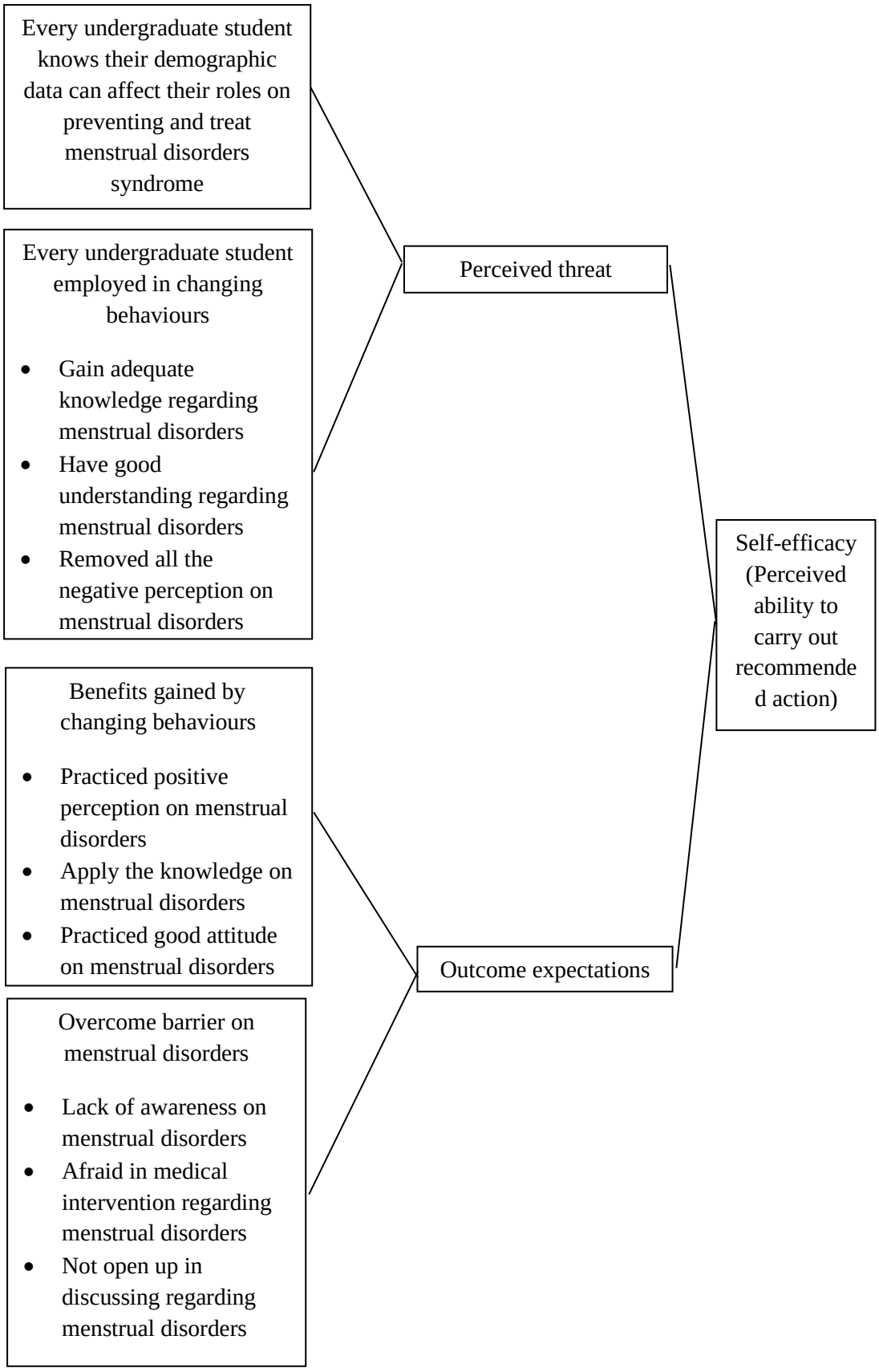

Figure 2.2: Conceptual Framework of Menstrual Disorders Modified from HBM

CHAPTER 3

RESEARCH METHODOLOGY

3.1 Introduction

In this chapter, all the information about the study in terms of research design, the population and setting of the study, the sampling method, variables, instrumentation, ethical consideration, data collection plan including data analysis plan were discussed.

3.2 Research Design

This study applied descriptive study using quantitative approach to assess the knowledge and attitude level regarding menstrual disorders among undergraduate students in School of Health Sciences, Universiti Sains Malaysia through a cross sectional survey. The data collected from the entire population and basic statistics such as frequency, percentage, mean, standard deviation and distribution score were reported. Cross-sectional studies were characterized by the collection of relevant data at a given point in time. Therefore, there was no time dimension involved in cross-sectional studies, as all these data were collected and mostly referred to the time at or around the time of the data collection (Kesmodel, 2018).

3.3 Population and Setting

There are three different school in USM Health Campus which are School of Health Sciences, School of Medical Sciences and School of Dental Sciences. This study however only included female undergraduate students from School of Health Sciences because it has a greater number of undergraduate students (1040 students) as compared to other two schools; PPSP (691 students) and PPSG (262 students) (PPSG Academic Office; PPSP Academic Office, PPSK Academic Office, 2019). Table 3.1 below shows

the total number of females undergraduate students based on programmes in School of Health Sciences, USM.

Table 3.1: The Total Number of Female Undergraduate Students from Different Programmes in School of Health Sciences, USM.

Gender / Programs	**Female Undergraduate Students**
Audiology and Speech Pathology	62
Biomedicine	77
Dietetic and Nutrition	176
Medical Radiation	87
Environment and Occupational Health	90
Forensic Sciences	80
Sport Sciences	56
Degree Nursing and Diploma Nursing	246
TOTAL	**874**

3.4 Sampling Plan

3.4.1 Sample

The sample obtained by following the inclusion and exclusion criteria as below:

Inclusion criteria

1) Undergraduate students from the eight programmes at School of Health Sciences (Audiology and Speech Pathology, Biomedicine, Dietetic and Nutrition,

Environmental and Occupational Health, Forensic Science, Sport Science, Medical Radiation, Degree Nursing and Diploma Nursing)

2) Age range from 19-30 years old
3) Female that already achieved menarche

Exclusion criteria

1) Undergraduate students from School of Medical Sciences and School of Dental Sciences in Health Campus, USM
2) Undergraduate School of Health Sciences students that undergoing industrial training outside the campus.

3.4.2 Sampling Method

This study applied simple random sampling method to select the suitable respondents. Simple random sampling is a part of the sampling techniques in which each sample has an equal probability of being chosen and meant to be an unbiased representation of the total population (The Economic Times, 2014). Simple random sampling also considered as convenience and fair way to select a sample from a larger population since every member of the population has an equal chance of getting selected (Investopedia, 2019). The name lists of undergraduate female students of PPSK according to each programme were obtained. From the name lists, those in odd number were selected as the respondents. Table 3.2 below shows the number of selected female undergraduate students according to each programme in PPSK.

Table 3.2: The Total Number of Selected Female Undergraduate Students from Different Programmes in School of Health Sciences, USM

Gender / **Programs**	**Selected Female Undergraduate Students**
Audiology and Speech Pathology	31
Biomedicine	38
Dietetic and Nutrition	35
Medical Radiation	33
Environment and Occupational Health	33
Forensic Sciences	33
Sport Sciences	28
Degree Nursing and Diploma Nursing	37
TOTAL	**268**

Initially, the sample here were the undergraduate students from School of PPSK in Health Campus, Universiti Sains Malaysia that suit the inclusion criteria. Timetables of eight programmes in School of PPSK were obtained from each class representative. Selected respondents from the name list according to the courses were approached after end of their class. Information regarding the study were explained and consent were obtained. Then, a set of questionnaires were passed to the selected students who were voluntary participating. They were asked to complete the questionnaires and submit it to the researcher after completing the questionnaires within 15 to 20 minutes.

3.4.3 Sampling size

The overall population of the undergraduate students in School of Health Sciences was 1040 students where there were 874 of female students. This number was too large and may be costly, energy and time consuming. Thus, the calculation was done using Raosoft Sample Size Calculator (APPENDIX S). Margin error was set at 5% and confidence interval was set at 95% and the sample size obtained was 268 students and 10% from the sample size were added as drop-out. Thus, the target samples involved in this study:

268 + drop out of 10% = 268 + 26.8

= 294.8

= 295 samples

3.5 Variables

3.5.1 Variables Measurement

There were two types of variables that used in his study which were independent and dependent variables. The independent variable was the variable that is believed to affect the dependent variable, but cannot be affected by dependent variable (Kowalczyk, 2015). The variables were shown in the Table 3.2 below:

Table 3.3: Independent and Dependent Variables

Variables	**Criteria**
Independent	• Socio-demographic - Age - Race - Program of study - Information source regarding menstruation and menstrual disorders
Dependent	• Knowledge level regarding menstrual disorders • Attitude level regarding menstrual disorders

3.5.2 Variables scoring

In Section A, information on socio-demographic characteristics were assessed through question number 1 to number 4. The respondent's knowledge level regarding menstrual disorders were assessed in Section B with 15 items questions. Three point Likert scale (Correct/Incorrect/Not Sure) were used as the response were scored as '1' for 'correct' response and '0' for 'incorrect' and 'not sure' response. Reversed scoring was done for negative knowledge items. The score for knowledge level were categorised into good and poor knowledge using the agreed cut-off point of 53%. Respondents with score percentage below the cut-off point were considered to have poor. This cut-off point was based on consensus of the expert's opinion on the previous study by Nor Asyikin et al. (2016)

In Section C, the respondents' attitude level regarding menstrual disorders were assessed with 8 questions. Attitude component used 5-Likert scale response (Strongly agree/Agree/Neutral/Disagree/Strongly disagree). For the positive attitude item, scores of '4', '3', '2', '1' and '0' for 'strongly agree'. 'Agree', 'neutral', 'disagree', and 'strongly