BARRIERS TO BREAST SELF-EXAMINATION PRACTICE AMONG FEMALE UNDERGRADUATE STUDENTS IN UNIVERSITI SAINS MALAYSIA

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BARRIERS TO BREAST SELF-EXAMINATION PRACTICE AMONG FEMALE UNDERGRADUATE STUDENTS IN UNIVERSITI SAINS MALAYSIA

by

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CERTIFICATE

This is to certify that the dissertation entitled “Barriers To Breast Self-Examination Practice Among Female Undergraduate Students In Universiti Sains Malaysia” is the bona fide record of research work done by Ms. Nurul Izzah Binti Asri during the period from October 2021 to July 2022 under our supervision. I have read this dissertation and that in my opinion it conforms to acceptable standards of scholarly presentation and fully adequate, in scope and quality, as a dissertation to be submitted in partial fulfilment for the degree of Bachelor of Nursing (Honours).

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DECLARATION

I hereby declare that this dissertation is the results of my own investigations, expect where otherwise stated and duly acknowledged. I certify that this dissertation has not been previously submitted for a degree or diploma in any university or other institutions and does not contain any material previously published or written by another person except where due reference is made in the text. I grant Universiti Sains Malaysia the right to use this dissertation for teaching, research and promotion purposes.

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LIST OF ABBREVIATION

BC- Breast Cancer

BSE- Breast Self-Examination

CBE- Clinical Breast Examination

EOSH- Environmental and Occupational Safety and Health

ESS- Exercises Sport Sciences

HREC- Human Research Ethnics Committee

PPSK- Pusat Pengajian Sains Kesihatan

SPSS- Statistical Package Social Sciences

USM- Universiti Sains Malaysia

WHO- World Health Organization

HALANGAN TERHADAP AMALAN PEMERIKSAAN KENDIRI PAYUDARA DALAM KALANGAN PELAJAR PEREMPUAN DI UNIVERSITI SAINS MALAYSIA

ABSTRAK

Kanser payudara adalah kanser yang sangat biasa dalam kalangan wanita. Kanser payudara adalah kanser yang terbentuk dalam sel-sel payudara. Selalunya ia bermula dengan sel-sel dalam saluran penghasilan susu (karsinoma duktus invasif). Kanser payudara adalah kanser biasa yang memberi risiko kepada satu daripada 19 wanita berumur antara 30 hingga 60 tahun di Malaysia. Kaedah yang berkesan untuk pengesanan awal kanser payudara adalah mamografi, pemeriksaan payudara klinikal (CBE) dan pemeriksaan sendiri payudara (BSE). Walaupun BSE adalah yang paling sesuai untuk pengesanan kanser payudara, terdapat beberapa perdebatan mengenai ketepatannya. Oleh itu, kajian ini dijalankan untuk mengenal pasti halangan dan langkah pencegahan yang mungkin berlaku dalam kalangan pelajar sarjana muda di Pusat Pengajian Sains Kesihatan, USM. Kajian keratan rentas telah dijalankan di Universiti Sains Malaysia (USM) dari Oktober 2021 hingga Julai 2022. Seramai 84 responden telah dipilih melalui kaedah persampelan bertujuan dan data dikumpulkan menggunakan borang soal selidik. Purata umur responden ialah 23 tahun (SD= 1.02), dengan umur antara 21 hingga 28 tahun. Ujian Chi-Square atau Independent T-test Pearson digunakan untuk menentukan perkaitan faktor sosiodemografi terpilih dan halangan ke arah melaksanakan BSE dengan kelaziman amalan BSE. Keputusan menunjukkan bahawa prevalens mengamalkan BSE adalah 81.0% dan majoriti melakukan BSE pada usia lebih daripada 20 tahun. Hasil kajian juga menunjukkan kebanyakan responden mempunyai tahap halangan yang sederhana (51.2%). Tiada perkaitan yang signifikan secara statistik antara kadar kelaziman amalan BSE dan halangan amalan BSE. Kajian itu juga

mendedahkan tiada perkaitan yang signifikan secara statistik antara umur, sejarah keluarga kanser payudara dan pendedahan kepada penyakit payudara dengan kelaziman amalan BSE. Kesimpulannya, tahap halangan dalam kalangan pelajar prasiswazah adalah sederhana dan kelaziman amalan BSE adalah tinggi. Halangan ke arah melaksanakan BSE harus dinilai dan diiktiraf untuk membolehkan intervensi pencegahan awal untuk mengurangkan kanser payudara dan komplikasinya.

BARRIERS TO BREAST SELF-EXAMINATION PRACTICE AMONG FEMALE UNDERGRADUATE STUDENTS IN UNIVERSITI SAINS MALAYSIA

ABSTRACT

Breast cancer is a very common cancer in women. Breast cancer is a cancer that forms in the cells of the breasts. It most often begins with cells in the milk-producing ducts (invasive ductal carcinoma). Breast cancer is a common cancer which gives risk to one out of 19 women aged between 30 and 60 years in Malaysia. As an effective methods for early breast cancer detection, mammography, clinical breast examination (CBE) and breast self-examination (BSE). Although BSE are the most suitable screening for breast cancer, there has been some debate over the accuracy of detecting breast cancer. Therefore, this study was conducted to identify the possible barriers and preventive measures of these barriers among undergraduate student in School of Health Sciences, USM. A cross-sectional study was conducted in Universiti Sains Malaysia (USM) from October 2021 until July 2022. A total of 84 respondents was purposively selected and the data was collected using a structured self-administered questionnaire. The mean age of the respondents was 23 years old (SD= 1.02), with age ranging between 21 to 28 years old. Pearson's Chi-Square or Independent T-test was used to determine the association of selected sociodemographic factors and barriers toward performing BSE to the prevalence of BSE practice. Results showed that the prevalence of practicing BSE was 81.0% and majority perform BSE at the age more than 20 years old. The results also showed that most of the respondents had a moderate level of barrier (51.2%). There is no statistically significant association between the prevalence rate of BSE practice and barriers of BSE practice. The study also revealed there was no

statistically significant association between the age, family history of breast cancer and

exposure to breast disease with the prevalence of BSE practice. As conclusion, the level of barrier among undergraduate students were moderate and the prevalence of BSE practice is high. The barriers toward performing BSE should be evaluate and recognized to allow early prevention interventions to decrease the prevalence of breast cancer and its complication.

CHAPTER 1

INTRODUCTION

1) Background of Study

Cancer is a disease in which some of the cell in the body grow abnormally, uncontrolled and spread to other parts of the body (National Cancer Institute, 2021). Breast cancer is a cancer that forms in the cells of the breasts (Mayo Clinic, 2021). It most often begins with cells in the milk-producing ducts (invasive ductal carcinoma). Also begin in the glandular tissue called lobules (invasive lobular carcinoma) or in other cells or tissue within the breast (Mayo Clinic, 2021). Breast cancer is a common cancer which gives risk to one out of 19 women aged between 30 and 60 years in Malaysia (Breast Cancer Research, 2017). Due to an ageing populations and the adoption of unhealthy lifestyle behaviours in society, cancer became the global burden across the world.

Breast cancer became the global health threat and it leading the cause of cancer among women (WHO, 2018). The impact is approximately two million women each year (WHO, 2018). This growing burden also impact women in Asia including Malaysia (Ministry of Health Malaysia, 2019). The incidence of breast cancer in Malaysian women were common across all ethnicity in Malaysia, which are 1 in 22 Chinese women followed by 1 in 23 Indian women and 1 in 30 Malay women (Ministry of Health Malaysia, 2019). This women who has been diagnosed with breast cancer are 88% (Stage I), 81% (Stage II) and 60% (Stage III) (Yusof et al., 2021).

Despite the increasing trend of breast cancer in most Asian countries every year, breast cancer has been reported to have the highest survival rate if that person do early detection and better disease prognosis. It also estimated about one-third to one- half of

premature deaths due to cancer could be avoided through early presentation, detection and appropriate treatment (Ho GF et al, 2017). The 5-year relative survival of breast cancer is the fourth highest (66.8%), after thyroid (82.3%), prostate (73.0), and corpus uteri cancer (70.6%) (Yusuf et al., 2021). As such, it is very importance to do early breast cancer screening.

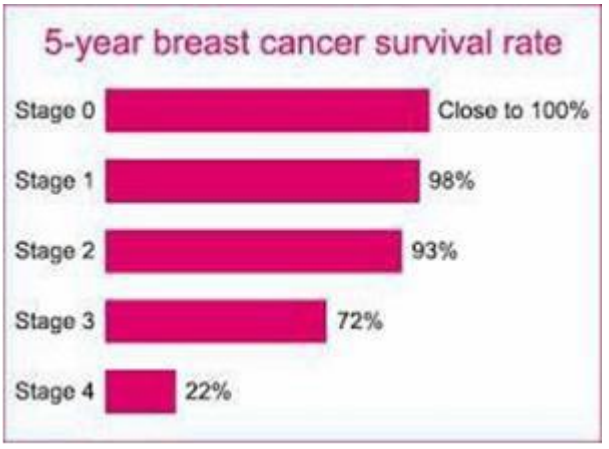

Figure 1 : The 5-years survival rate (%).

As an effective methods for early breast cancer detection, mammography, clinical breast examination (CBE) and breast self-examination (BSE) are the suitable ones. BSE is a screening tools that can detecting the presence of abnormalities in the breast and it can creates an opportunity for a women to detect any changes in the breasts (Agbonifoh, 2017). Thus, a right technique in performing BSE will give positive impact in early diagnosis and treatment options.

Also, BSE was very recommended to women because it an easy, it does not involve any cost, can perform anytime, painless and does not require any specific equipment. The American Cancer Society recommends that women should be familiar with how their breasts normally feel via breast self-examination (BSE).

From the prevalence of breast cancer, it shown how many in the population are affected by the disease. Due to worse complication if the diagnose of breast cancer was late, BSE should be performed regularly as an early screening. So it is important to study the possible barriers to perform BSE that may be associated with low practice of BSE. By identifying the possible barriers, preventive measures of these barriers can be taken and hence increasing the prevalence of BSE practice among Malaysian young women.

2) Problem Statement

In 2020, Malaysia recorded 32.9% of breast cancer cases from all ages which are 8418 people. It became the highest cancer cases among other cancer in Malaysia (WHO, 2021). According to GLOBOCAN (2020) at least 7,593 women in Malaysia had breast cancer and as many as 2,894 of them died from breast cancer in 2018 (Bray et al., 2018). On the other side, Malaysia had been done many efforts to improve breast health among young female. But, the general believed is that breast cancer only affects old women and young women do not get breast cancer (Johnson & Dickson, 2008). However, young women presented with breast cancer at higher stages and were more aggressive type than those among older women (Hadi et al., 2010).

Breast cancer should not prioritize only for older women. Young women living with breast cancer have more severe depression than older women (Lisa, 2017). According to GLOBOCAN, the cases of breast cancers continue to rise especially among young women in year 2015. Also, breast cancer in young women associated with aggressive characteristics and it can get worsen independently of pathologic variables (Iddrisu, 2020).

In a study that was conducted by Sarker R , although 42.0% knew about BSE only 21.3% of the respondents had ever practiced BSE, which is similar to another study in Bangladesh whereby 46.7% of respondents knew about BSE but only 16.3% had ever practiced BSE. Indeed, the practice rate of BSE by female students is low (Rumpa Sarker, 2021). This previous study shown that although the majority women knew about breast cancer but only a few that practiced BSE as an early detection. The current literature have reported many barriers to the practice of BSE. This included socio-demographic, attitude, awareness and knowledge (Omolase, 2008).

The current barriers of BSE practice is still an issue to be solve. This is maybe due to the results of research conducted is not applicable to generalize population or the prevalence of BSE practice is trends are not yet stable. The unsure global trends should not be comparable due to the methodological issue of research conducted, which is not standardized or lack of uniformity to obtain accurate comparison (Dos Santos, Madi, da Silva, Rodrigues Vergani, de Araujo & Garcia, 2020; Zhu & Zhang, 2016). The current barriers of BSE practice are varies in all young women depending to factors such as the family history, perception of no disease threat, the lack of knowledge and the fear of getting diagnoses with breast cancer (Baloushah, 2019).

However, the barriers of BSE practice are not adequately studied regionally and globally. In Malaysia, the research conducted to study about BSE practice are still in few numbers and this is not adequate to identify specifically the barriers of BSE practice among young women.

1.3 Research Questions

1. What are the barriers of BSE practice among female undergraduate student in School of Health Science, USM?
2. What is the prevalence rate of BSE practice among female undergraduate student in School of Health Science, USM?
3. Is there any significant association between the barriers and prevalence rate of BSE practice among female undergraduate student in School of Health Science, USM?
4. Is there any significant association between the barriers of BSE practice and selected socio-demographic factors (age, family history of breast cancer and exposure to breast disease) among female undergraduate student in School of Health Science, USM?

1.4 Research Objectives

1.4.1 General Objective

To identify the barriers of BSE practice and factor associated with barriers of BSE practice among female undergraduate student in School of Health Science, USM.

1.4.2 Specific Objective

1. To determine the barriers of BSE practice among female undergraduate student in School of Health Science, USM.
2. To determine the prevalence rate of BSE practice among female undergraduate student in School of Health Science, USM.

3. To identify the association between barriers and prevalence rate of BSE practice among female undergraduate student in School of Health Science, USM.
4. To identify the association between barriers of BSE practice and selected socio-demographic factors (age, family history of breast cancer and exposure to breast disease) among female undergraduate student in School of Health Science, USM.

1.5 Research Hypothesis

1. Null hypothesis, H_O:

   There is no significant association between barriers and prevalence rate of BSE practice among female undergraduate student in School of Health Science, USM.

Alternative hypothesis, H_A :

There is a significant association between barriers and prevalence rate of BSE practice among female undergraduate student in School of Health Science, USM.

2. Null hypothesis, H_O:

   There is no significant association between barriers of BSE practice and selected socio-demographic factors (age, family history of breast cancer and exposure to breast disease) among female undergraduate student in School of Health Science, USM.

Alternative hypothesis, H_A :

There is a significant association between barriers of BSE practice and selected socio-demographic factors (age, family history of breast cancer and exposure to breast disease) among female undergraduate student in School of Health Science, USM.

1.6 Conceptual and Operational Definitions

Barrier :

Barrier can be defined as anything used or acting to block someone from going somewhere or from doing something (American Dictionary).

In this study, barriers for performing BSE were investigated by asking participants to strongly disagree, disagree, neutral, agree and strongly agree that any of 7 items stated in the questionnaire were barriers to do BSE (Sami AR Al-Dubai et al., 2012).

Breast Self-Examination :

Breast self- examination is one of the simple, quick, and cost-free procedures for early detection of breast cancer among women (Sujindra et al., 2015).

Prevalence rate of BSE practice :

Prevalence of BSE practice is defined as number of existing cases of BSE practice in a population at a specific time (Lo & Tanner, 2014).

In this study, to determine the prevalence rate of BSE practice among female undergraduate student that will influence the factors of barrier BSE practice.

Early detection :

Early detection is defined as finding cancer or pre-cancerous changes in individuals before it grow and spread into late-stage disease (Law Insider).

In this study, early detection is the practicing of BSE that will prevent or lower the worsen of breast cancer.

1.7 Significance of the Study

This study determined the prevalence of BSE practice and its associated barriers among female undergraduate student in School of Health Science, USM. This topic is very important because the finding from this research can contributed to identify what are the barriers of people not performing breast self-examination among young women in Malaysia. Meanwhile, this study is to determine either there is any significant association between the prevalence of BSE practice and selected barrier factors. This also may benefit in increasing awareness of BSE practice by overcome the barriers of doing BSE among undergraduate students. It also can reduce the cases of late diagnoses of breast cancer cases among young women. On the other hand, this research also provided an information and finding to other researcher that study similar issue about barrier to BSE practice.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

Breast self-examination (BSE) are very well known among women in Malaysia as an early detection for detecting breast cancer. But, the prevalence of practice BSE from previous research are still low. So, this chapter reviewed the current literature related to barriers of BSE practice among female undergraduate students in School of Health Science, USM. This chapter also provided a detail description of conceptual framework chosen for this study.

2.2 Review of Literature

2.2.1 Prevalence of Breast Cancer (BC)

Breast cancer happen when the cells in the breast grow and divide in an uncontrolled way then creating a tumor which is a mass of tissue (Cleveland Clinic, 2018). This cancer is the most common cancer among women in the worldwide (Cleveland Clinic, 2018). Based on the worldwide studies done before, the prevalence of breast cancer are increasing in many countries, including African (Cumber et al., 2017), Saudi Arabic (Alotaibi et al., 2018), U.S. (BreastCancer.Org) and Malaysia (Lee, 2021). In Malaysia, 2 million women were diagnosed with breast cancer in 2018 and it will increasing double in the next 30 years (Cancer Research Malaysia, 2021). The prevalence of breast cancer in Malaysia is 1 in every 20 women (Lee, 2021).

Otherwise, the prevalence of breast cancer is increasing globally. This can be concluded based on the previous studies, (Na Li et al., 2017; Nasrindokht Azamjah et al., 2019; Samuel et al., 2018; Martine Bellanger et al., 2018). According Hyuna Sung (2021), the incidence rates in Australia is the highest (>80 per 100,000) and the lowest rates

is in Central America and South Central Asia (<40 per 100,000). Also, incidence rates of breast cancer is rising fast in Africa (Joko-Fru et al., 2020) and Asia (Bray F et al., 2004).

2.2.2 Risk factor of Breast Cancer (BC)

All women are at some risk for developing breast cancer especially as they age. This risks for breast cancer are varies among ethnic groups (Cleveland Clinic, 2018). Risk factors for developing breast cancer are described as either non- modifiable or modifiable risk factors. Ageing and being female are considered to be the two most imperative non-modifiable risk factors (Chao et al., 2020). A modifiable risk factors can be categories for developing breast cancer include a high alcohol consumption, lack of physical activity, obesity post-menopause, use of oral contraceptives and hormone replacement therapy (Rainey et al., 2020). All women are important to be aware of modifiable risk factors because it influence lifestyles choices which increase or decrease their personal risk of developing breast cancer (Sherman & Lane, 2015).

And for non-modifiable factors which increase the risk of developing breast cancer include a family history of breast cancer, early age at menarche, later age at menopause, nulliparity, having the first child after 35years of age in addition to mammographically dense breast tissue (Chao et al., 2020). A women with family history of breast cancer had higher risk awareness which 92% than a women without a family history (Peipins et al,. 2018). Multiple studies have shown a strong correlation of family history of breast cancer with breast cancer risk. The prevalence of a positive family history of breast cancer among young women quite high which 88%. Besides, socioeconomic status also associated with developing breast cancer. Higher socioeconomic status tend to had higher awareness about breast cancer (J.S. Khushalani et al,. 2020) so they could take a precaution to prevent breast cancer.

As for young women, there is no clear cut off point for a young women to had risk of breast cancer. However, incidence rate of breast cancer among Malaysian has increased at the age of 25 (Ministry of Health Malaysia, 2019). This is because it related with the reproductive cycle at early age of menarche others modifiable risk factors of breast cancer (physical activity, body habits, alcohol use, smoking, shift work and socioeconomic factors). According to previous study, young women also has a risk factor to develop with breast cancer. Based on previous cohort study, it shows a strong inverse correlation between age of menarche and breast cancer (Rebecca Ritte et al,. 2003). In other study, 68.29% of women attained menarche at early age had risk of breast cancer (Amran F.A et al,. 2021).

2.2.3 Knowledge of Breast Self-Examination (BSE) Practice

Knowledge of BSE practice was defined as awareness of students regarding performing BSE as an early detection for breast cancer. A knowledge of BSE involves having information on signs of BC, BSE procedures and how to perform BSE (Akpanekpo, 2017). Having a knowledge of BSE has a positive impact on early detection of breast cancer and BSE practice (Yakubu et al., 2014).

A study done by Muhabaw et al. (2021) among 2,607 female student in Maraki Campus found there is good knowledge on BSE with 27.6%. Based on others previous studies, proportion of good knowledge in India was 93.3% (Fotedar et al., 2013); in Korea was 87.0% (B.-N. et al., 2012); in Saudi was 79.0% (Radi S.M. 2013) and in Ethiopia was 89% (Desta, Workicho, Atomsa,, Workneh, and Tebeje 2018). The factor significantly associated with knowledge included age, educational level, family history, marital status and good lifestyles. Women with good knowledge tend to take a good care for their health. This is because there are a report that women's knowledge

and belief about breast cancer has a strong relation with help-seeking behaviors (Okobia MN et al., 2006 ; Hadi MA et al., 2010).

Based on previous studies conducted in Malaysia, there are excellent knowledge about breast cancer and BSE among female student (Pardi et al., 2017; Ameer, Abdilie, Pal, Arebo, & Kassa; 2014; NK et al., 2009; Paruchuri et al., 2021). On the other hand, a study conducted by Azeem et al. (2015) stated that the knowledge on BSE was moderate. The knowledge and awareness of BSE was higher among the respondents with positive family history of cancer (mean: 35.7) as compared to the respondents with negative family history of cancer (Norhayati Mohd et al., 2020). Knowledge of breast cancer is very important as it will encourage women to perform breast cancer screening. Also, it can leads to an improvement of breast cancer interventions. According to Godfrey (2016), inadequate knowledge will prevent women from seeking treatment then it can contribute to high mortality and worse outcome. The lack of knowledge about breast cancer and BSE could be due to insufficient source from the media such as television, newspapers and media social (Al-Dubai et al., 2012; Al-Naggar et al., 2011).

2.2.4 Practice of Breast Self-Examination (BSE) Towards Breast Cancer

The practice of BSE is involving the act of palpating one's breast monthly, just after menstruation, and the ability to detect abnormalities (Maggie A, 2015). This practice of BSE makes the women becomes familiar with the structure of herself breast and became more responsible to take a good care for her health status (Black E. & Richmond R., 2019). Practice BSE would help in detecting breast cancer and can reduced the mortality. Although there were many studies that BSE is useful for detecting breast cancer, there were still low rate in practice BSE among young women (Akhtari-Zavare et al., 2015). As improving level of awareness on early detection of breast cancer, knowledge and

practices on breast self-examination (BSE) are essential in every woman (Madubogwuet al., 2017). This is because earlier detection of cancer can increased the survival rate approximately 90%. According to Paruchuri (2021), the best time to do BSE is after a few days the period ends because at that time, the breasts are less likely to be swollen and usually to perform monthly to helps in improving skill and feel of breasts condition.

A good knowledge has always been assumed to have correlations with good practices. However, 70.5% of female undergraduate student was not performed regular BSE and they did not know how to do it although the awareness is high, 99.5% (Akhtari-Zavare et al., 2015). On the others studies, the undergraduate student is rarely practiced BSE (Pardi et al., 2017). This practice and frequency of BSE is not different from other counterparts in Yemen, Jordan, Turkey, Ethiopia and South West of Cameroon, respectively (Parsa & Kandiah, 2005; Secginli & Nahcivan, 2006; Ahmed, 2010; Birhane et al., 2017; Azemfac et al., 2017). Also, the study from Singapore stated BSE practiced among university students aged 16 to 30 years were still inadequate (Pengpid & Peltzer, 2014).

2.2.5 Barriers of Breast Self-Examination (BSE) Practice

Barrier of BSE practice are varies among the women. For women, the breasts are a symbol of womanhood. A women who practiced a BSE were connotes for having breast cancer already or detection of it (Hanson et al., 2019). As for that, the women became more sensitive towards the BSE practice and they would prefer not to even practice it (Hanson et al., 2019). The major reasons for not practice BSE were lack of knowledge on BSE, did not know how to perform, do not have time and scared of being diagnosed with breast cancer (Sami et al., 2012).

According to Pardi et al (2017), 3% of female who knew how to perform BSE are also not practiced BSE regularly. On the other side, Ohaeri & Aderigbigbe (2019)

previous study stated the barriers of BSE are 94.6% respondents are said that BSE is time consuming, 65.2% claimed they did not understand the process of BSE and 82.4% stated they needed to know more about breast cancer screening. Considering oneself not at risk of breast cancer because there were no clinical symptoms shown are also one of the main barriers of BSE practice (Ghazdehi MR et al., 2013). All of this barriers could led to low practice of BSE.

According to Sah SK et al (2019), there were only 46.4% of women agreed that BSE is a necessary tools for early detection of breast cancer. Practice BSE would help in detecting breast cancer and can reduced the mortality. Although there were many studies that BSE is useful for detected breast cancer, there were still low rate in practicing BSE among young women (Akhtari-Zavare et al., 2015). According to Akhigbe AO & Omuemu VO (2009), poor awareness and knowledge about breast cancer symptoms and screening methods are the one factors that the BSE practice is low among women. The responded of knowledge about risk factors, causes and symptoms of breast cancer were still in poor level (Ohaeri & Aderigbigbe, 2019).

2.3 Theoretical and Conceptual Framework of the Study

Based on the literature review above, awareness of breast cancer has to improved more. If the awareness of breast cancer and BSE increases, the chances of practice BSE as an early detection for breast cancer also increased hence reduced the stage of diagnosis. But before that, we must understand how the women feel about breast cancer and its early detection, the benefits and the barriers of BSE. Understanding Malaysian women's health beliefs regarding breast cancer screening behavior will help health care professionals choose more effective health education programs to improve women's screening practices (Parsa et al., 2011). It is indicated that health promotion research very often focuses on changing an individual's behavior by changing their beliefs and knowledge.

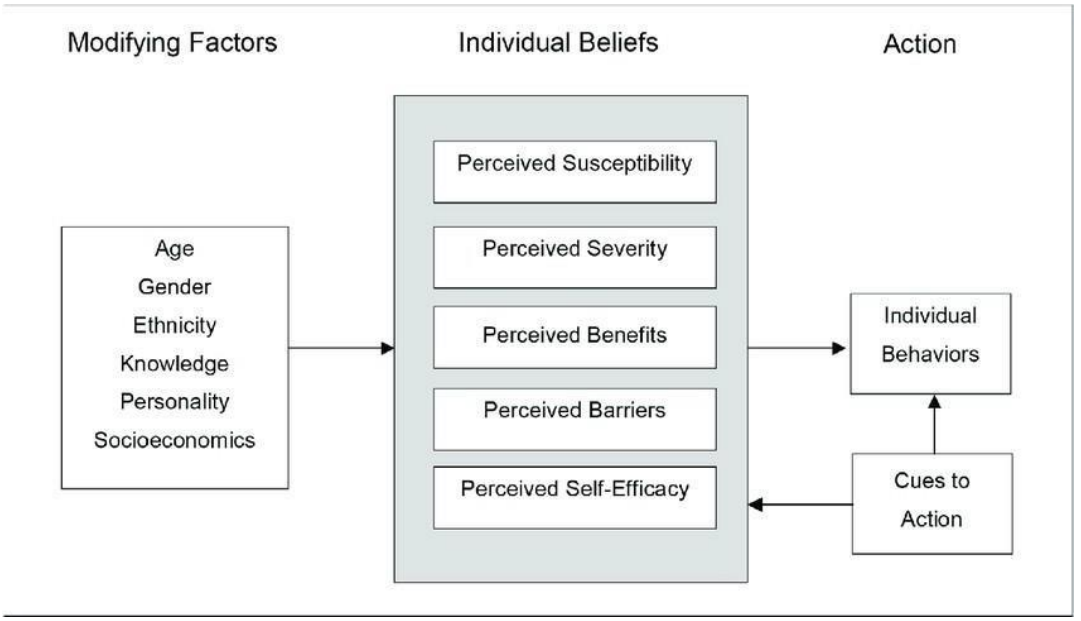

Figure 2: The Health Belief Model adopted from Glanz er al., 2015.

One theoretical approach to understand health promoting behaviors is the Health Belief Model (HBM). This model has been deemed appropriate for and has been selected as the theoretical framework for this study. This model has been used in several studies as a theoretical framework to study BSE and other cancer detection behaviors (Petro-Nustus et al., 2002). This framework is about intention to act to understand the health-related behavior is influenced by a person's perception. According to the HBM scale, a woman who perceives that she is susceptible to breast cancer and that breast cancer is a serious disease would be more likely to perform regular breast examinations. Similarly, a woman who perceives more benefits of and fewer barriers to BSE would be more likely to practice BSE (Mikhail, 2001).

In this study, this conceptual framework described how selected sociodemographic such as age, race, family history of breast cancer and exposure to breast disease will influenced practice of BSE. When the women know what they feel about breast cancer and its complication, the practice of BSE and the barriers towards BSE practice among women can be improved. In this study, the respondents were answered a self-questionnaire for analyzed the practice and barriers towards BSE practice to determine what were the problem not regularly performing BSE.

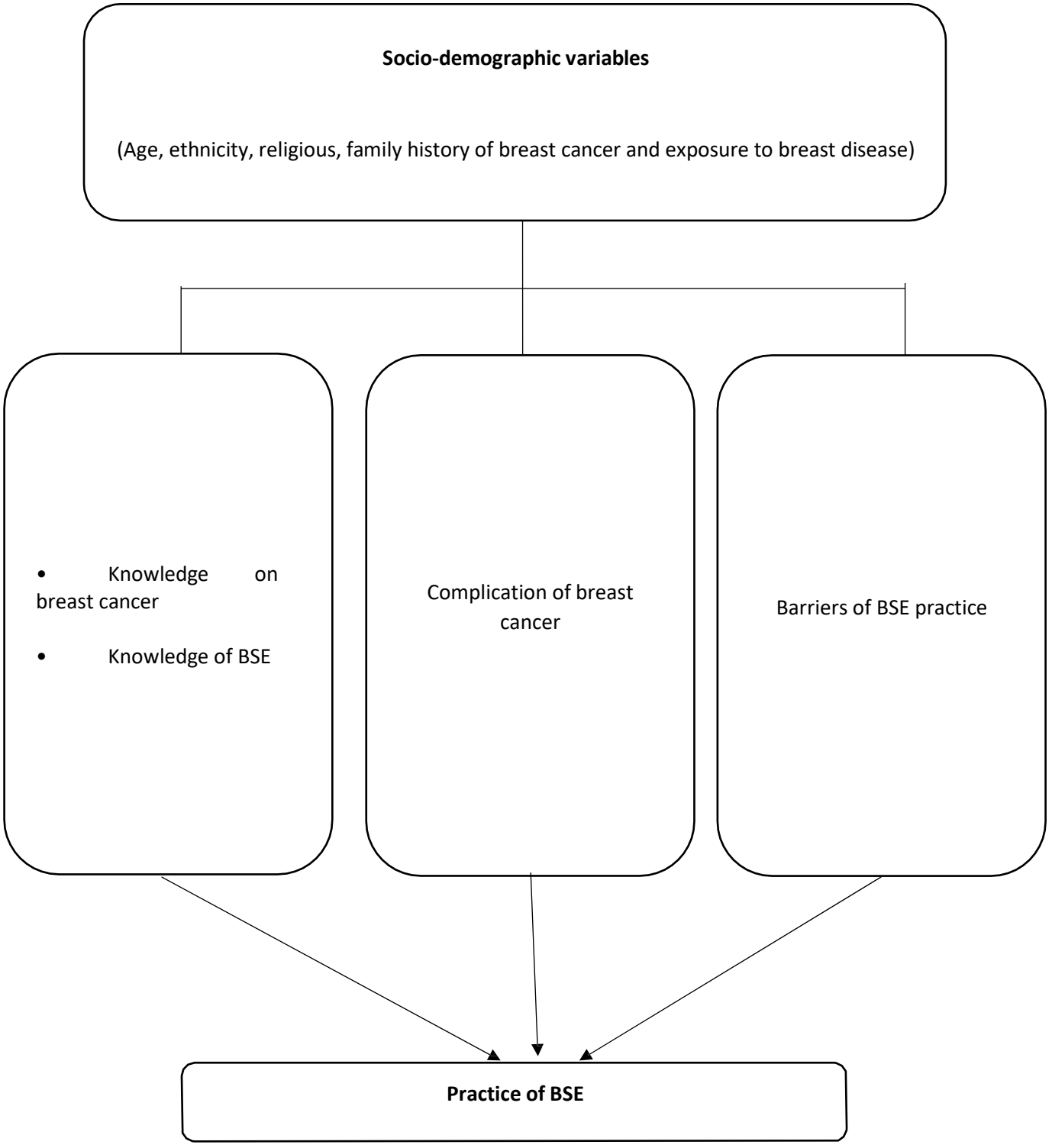

Figure 3: Conceptual framework of the study for barriers of BSE practice

CHAPTER 3
METHODOLOGY AND METHODS

3.1 Introduction

This chapter explained and justified the approach and rationale used to support the chosen research methodology. A flow chart of the course was provided within this report. Along with the procedures and approach used, the actual process of carrying out the study had also been described, such as research design, population and study setting, sample and sample selection. It also detailed ethical consideration and the method used in the analysis.

3.2 Research Design

The research design selected for this study was cross-sectional study using a questionnaire to assess the barriers of breast self-examination practice among female undergraduate students in Universiti Sains Malaysia (USM).

3.3 Study Setting and Population

To propose the objective of the study, the research location was at the School of Health Sciences, Universiti Sains Malaysia (USM). The research duration of this study was from October 2021 until July 2022. The target population were final year female undergraduate student in School of Health Sciences, Universiti Sains Malaysia (USM). The total number of students was 165. The population meets the inclusion and exclusion criteria.

3.4 Sampling Plan

3.4.1 Sample criteria – Inclusion and exclusion criteria

The inclusion criteria

1) Aged 18 years old and above.

The exclusion criteria

1) History of breast cancer or lump.
2) Married women

3.4.2 Sampling Size Estimation

The sample size was estimated using single proportion formula on first and second objectives taken based on previous study conducted by Pardi et al (2017).

$$n = \frac{z^2}{\Delta} p\,(1-p)$$

Where,

n = Sample size

ρ = Anticipated population proportion

z = Value of standard normal distribution = 1.96

Δ = Precision = 0.05

Meanwhile, the sample size for the third and fourth objective was estimated by using two proportion formula taken based on previous study conducted by Baloushah et al (2020).

$$n = \frac{p_1\,(1-p_1)+p_2\,(1-p_2)}{(p_1-p_2)^2}\left(z_{\alpha} + z_{\beta}\right)^2$$

Where,

n = sample size

p = anticipated population proportion

$z_{\alpha/2} = 1.96$

$$Z_{\alpha/2} = 0.84$$

Table 1: Calculation for sample size

	Type of formula	**p-estimate proportion**	**N**	**Drop out 20%**
Objective 1: To determine the barriers of BSE practice among female undergraduate student in School of Health Science, USM.	Single proportion formula	**P = 0.42** Refer to the female undergraduate student did not know how to do BSE (Pardi et al., 2017).	19	23
Objective 2: To determine the prevalence rate of BSE practice among female undergraduate student in School of Health Sciences, USM	Single proportion formula	**P = 0.03** Refer to the prevalence of good practice BSE by female undergraduate student (Pardi et al., 2017).	45	54
Objective 3: To identify the association between the prevalence rate and barriers of BSE practice among female undergraduate student in School of Health Science, USM.	Two proportion formula	**P1 = 0.60** **P2 = 0.37** P1 refer to the prevalence of family of breast cancer with practice BSE. P2 refer to the prevalence of family history of breast cancer with not practice BSE. (Baloushah et al., 2020)	70	**84**
Objective 4: To identify the association between the prevalence rate of BSE practice and selected socio-demographic factors (age, family history of breast cancer and exposure to breast disease) among female undergraduate student in School of Health Science, USM.	Two proportion formula	**P1 = 0.95** **P2 = 0.54** P1 refer to the prevalence of practice BSE with did not have any previous history of exposure to breast disease. P2 refer to the prevalence of practice BSE with have previous history of exposure to breast disease. (Baloushah et al., 2020)	14	17

In conclusion, based on the above calculation, the minimum sample size needed to fulfil analyses of all the objectives were 70 respondents. With considerations of 20% dropout, the participants that had been recruited were 84 respondents.

3.4.3 Sampling Method

This study used stratified sampling method. The sample size estimation is 84 out 165 students. From the calculation, the equal proportion with the minimum of 51% of the students in each courses obtained.

Table 2: Total number selected from each courses

Course	Calculation	Total
Biomedicine	51/100 x 13 students	7 students
Dietetics	51/100 x 15 students	8 students
Nutrition	51/100 x 26 students	13 students
Forensic Science	51/100 x 17 students	9 students
Medical radiation	51/100 x 26 students	13 students
Audiology	51/100 x 5 students	3 students
Speech Pathology	51/100 x 5 students	3 students
ESS	51/100 x 12 students	5 students
EOSH	51/100 x 20 students	10 students
Nursing	51/100 x 27 students	13 students

3.5 Instrumentation

3.5.1 Instrument

Data were collected by the use of a self-administered questionnaire consisted of three parts, part I, II and III. This questionnaire was adapted from Baloushah S. et al (2020), who permit to use the instrument for this study (Appendix B).

Part I , about sociodemographic data consisted of seven questions which included age, ethnicity, religion, course of study, family history and exposure to cancer. For family history, the respondent were asked to respond with either ‘ Yes’ or ‘ No’ to the question whether they have a relative who has or had breast cancer, history of breast lump and if they have been exposure to breast disease.

Part II consisted of 6 questions to assess the respondent practice and reasons for doing BSE. The questions were ‘whether or not they performed BSE’; ‘what age of initial BSE’; ‘pattern of doing BSE’; ‘how they performed BSE’; ‘how much time do you spend during the BSE’ and ‘ reason for doing BSE’. For reason of doing BSE, the respondent are required to tick either the reason is for early detection, because have history of breast cancer or other reasons.

Part III consisted of 7 statement to determine the barriers of performing BSE. This statements included ‘lack of knowledge’; ‘need time to do it’; ‘do not have a disease that requires BSE’; ‘fear of detecting cancer’; ‘do not think it is necessary’; ‘it deviates my privacy’ and ‘ it is embarrassing’. This statements were comes with likert scale responded strongly disagree, disagree, neutral, agree and strongly agree

3.5.2 Translation of instrument

The original version of the questionnaire used in this study was in English version. In USM, all education was carried out using the English language. Therefore, no translation needed. The instrument was administered in English language as USM students were expected able to understand and completed the questionnaire.

3.5.3 Validity and Reliability of Instrument

The content of the questionnaire had been validated by original author. The Cronbach coefficient alpha in this questionnaire for practice and barriers were 0.7 respectively. A Cronbach's alpha coefficient above 0.70 is usually acceptable.

3.6 Variables

There were two types of variables in this study, which were independent variables and dependent variables. The dependent variables in this study was the prevalence rate of BSE practice. The independent variables in this study were the barriers of BSE practice and sociodemographic data included age, race, religion, family history and exposure to breast cancer.

3.6.1 Variable Measurement

The variables of the study were measured by using a self-administered questionnaire.

3.6.2 Variable Scoring

For Part II, Practice and reasons for doing BSE consisted of 2 categories which practice of BSE and reason for doing BSE. The result of prevalence rate of BSE practice