Knowledge Of Early Detection Of Breast Cancer Using BSE Method In Pharmaceutical Students, University Of Sari Mulia Banjarmasin, Protection Motivation Theory Application

Melviani[1], Darini Kurniawati[1], Saftia Aryzki[1]

[1]Bachelor of Pharmacy Study Program, Faculty of Health, Sari Mulia University, Banjarmasin, Indonesia

Melviani.apt87@gmail.com

ABSTRACT

The incidence of breast cancer increases with age. However, young age is also not a guarantee from breast cancer. The simplest way to detect breast lumps early is to identify your own breasts through breast self-examination (BSE). The focus in this study is PMT (protection motivation theory) on early detection of breast cancer. The purpose of this study was to determine the knowledge and behavior of students of the Bachelor of Pharmacy Study Program at Sari Mulia University in carrying out early detection of breast cancer with PMT theory. The sample in this study was 74 female students and this research was conducted using a quantitative descriptive method with a cross sectional study approach using a questionnaire which was analyzed by univariate. The results of this study obtained 91% of respondents have good knowledge and only 9% of respondents with poor knowledge. Respondents with good knowledge can try to do early detection of breast cancer. With PMT analysis which consists of 4 domains, that are severity, vulnerability, response effectiveness, and self-efficacy. From the results of respondents' answers, the existence of the four domains can be identified in the factors causing respondents to carry out self-protection efforts from breast cancer with the BSE method.

INTRODUCTION

According to the Indonesian Ministry of Health, breast cancer is one of the most common types of cancer in women. Breast cancer is a malignant tumor that grows in breast tissue. Breast cancer (carcinoma mammae) is one type of malignant tumor which is still the number one killer of women [1].

According to WHO (World Health Organization), about 9-8% of women in the world have the potential to experience breast cancer. Breast cancer is the most common type of cancer in [2]. Data in Indonesia is estimated that there are 100 new patients per 100,000 population every year. This means that from a total of 237 million people, there are about 237,000 new cancer patients every year [3]. The prevalence of cancer in Indonesia has increased greatly in the last five years. The World Health Organization (WHO) shows that the most common cancer cases in Indonesia are breast cancer, which is 58,256 cases out of a total of 248,809 cases. WHO notes that in Indonesia, every year there are around 19,730 women who die from breast cancer [4]. In South Kalimantan, there were 4 deaths in men and 4 deaths in women due to breast cancer [5].

The incidence of breast cancer increases with age. However, young age is also not a safe guarantee from breast cancer. Many breast cancer sufferers have been found at a young age, not even a few teenage girls in their teens suffer from tumors in their breasts, where tumors can potentially become cancer if not detected early.

The simplest way to detect breast lumps early is to identify your own breasts through breast self-examination (BSE). BSE helps check the condition of the breast for lumps or other changes that can be a sign of a tumor or breast cancer that requires medical attention. In fact, more early-stage breast cancer can be detected by BSE [2].

Based on what has been described above, the focus of the study in this study is the protection motivation theory on early detection of breast cancer. Judging from the individual's beliefs about his vulnerability to the

risk of disease in encouraging people to adopt healthier behaviors. By using the PMT model, women will be more aware of their risk and susceptibility to breast cancer, so they are more likely to influence screening-related behaviors.

LITERATURE REVIEW

Breast cancer is a disease caused by abnormally growing cells that can become malignant tumors and can damage healthy cells and tissues. Cancer can grow in all parts of the human body. Cancer occurs when normal cells in the body can invade nearby tissues, or move to a distant location by entering the circulatory or lymphatic system. In its development, the breasts will be influenced by the hormones estrogen and progesterone. In women, breast development is very active where the mammary glands can produce milk for baby nutrition, whereas in men it is not fully developed. Breast cancer is a malignant tumor in the breast or one breast, breast cancer is also a single lump or mass that is often found in a square or outer area, this lump is hard or has an irregular shape and can be moved.

Early breast cancer screening can be done. Cancer detection can be done by self-examination of the breast or what is known as BSE. Breast self-examination (BSE) is an easy examination that every woman can do and can do alone. This action is important because almost 85% of abnormalities in the breast are actually discovered for the first time by sufferers through proper breast self-examination. Knowledge occurs after people sense a certain object. Sensing occurs through the five human senses, namely: the senses of sight, hearing, smell, taste and touch. Most of human knowledge is obtained through the eyes and ears.

PMT (Protection Motivation Theory) was proposed by Rogers based on HBM in 1975 [6]. Protection Motivation Theory (PMT) is a social cognitive model that is useful for motivating the use of protective behavior and is often used in breast cancer screening. Protection motivation theory says that fearful warnings (fear appeals) may be effective in changing attitudes and behavior, fear can be a driving force that motivates trial and error behavior. According to PMT, someone wants to do something because they have the motivation to protect themselves. Motivation to protect oneself depends on four factors, namely: perceived severity, perceived vulnerability, perceived response efficacy, and perceived self-efficacy.

MATERIALS AND METHODS

Materials

The population in this study were all third semester female students of the Faculty of Health, Bachelor of Pharmacy Study Program, Sari Mulia University, Banjarmasin. With a population of 79 respondents. The sample in this study was the third semester female student of the Bachelor of Pharmacy Study Program, Sari Mulia University, Banjarmasin. The sample that met the inclusion and exclusion criteria were 74 respondents. Researchers have determined the criteria for the sample to be studied, including:
Inclusion Criteria :
1) Female student
2) Third semester student of Pharmacy Undergraduate Study Program
3) Students who fill out the questionnaire
Exclusion Criteria :
1) Respondents who did not fill out the questionnaire completely

Methods

The sampling technique was carried out by means of probability sampling. The data collected is primary data obtained from answers to questionnaires regarding early detection of breast cancer. Data were collected by distributing questionnaires to all third semester female students of the Faculty of Health, Sari Mulia University, Banjarmasin. The data were then identified based on the inclusion and exclusion criteria before being grouped according to the predetermined variables. This research was conducted with a quantitative descriptive method based on existing data and was carried out by describing the object of research as it is in a systematic and objective manner. with a cross sectional study approach using a questionnaire which was

analyzed by univariate. The research was conducted by distributing questionnaires containing 13 questions about knowledge of the BSE method, and 7 questions about the application of Protection Motivation Theory.

RESULTS AND DISCUSSION

Result

Result of Knowledge

Table 1. Knowledge Distribution

Knowledge Category	Many Respondents	Percentage
Good	67 people	91%
Poorly	7 people	9%

The results of the data obtained in the most dominant questionnaire are respondents have a good level of knowledge (91%) of the BSE method.

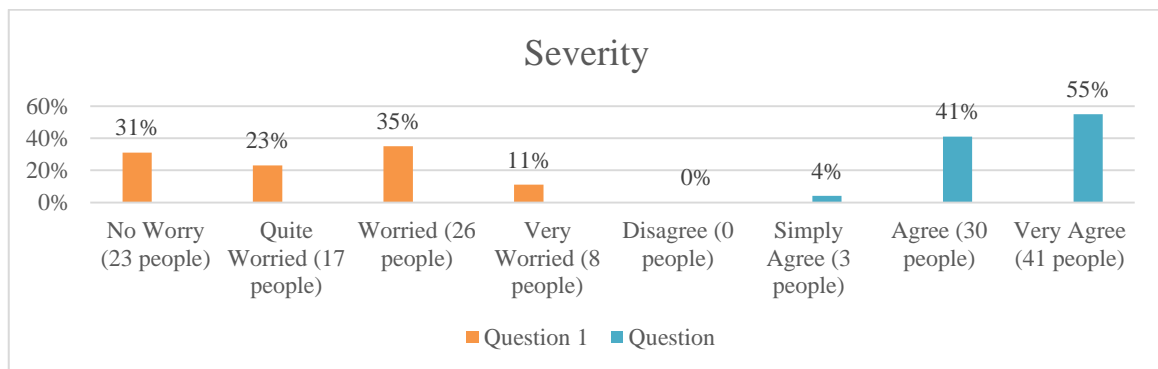### Protection Motivation Theory

Severity

Figure 1. Percentage of domain analysis severity

In the Severity domain, the dominant result stated that he felt worried as much as 35% (26 people) and stated that all respondents strongly agreed that breast cancer would greatly affect health as much as 55% (41 people).
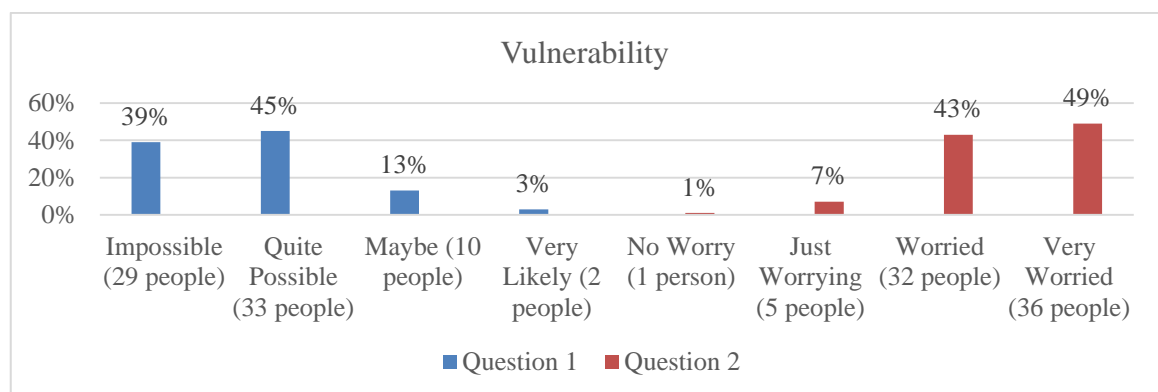
Vulnerability

Figure 2. Percentage of domain vulnerability analysis

In the Vulnerability domain, the dominant result stated that there was a possibility of them getting breast cancer with a quite possible answer of 45% (33 people) and the dominant one stated that he felt worried with a very worried answer of 49% (36 people).

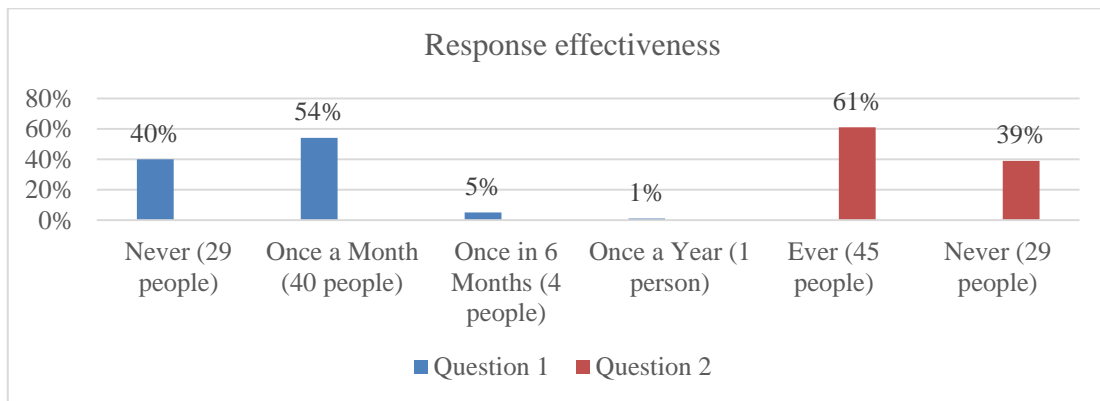### *Response effectiveness*

Figure 3. Percentage of domain response effectiveness analysis

In the domain of Response effectiveness, the dominant result states that they often do BSE with the answer once a month as much as 54% (40 people) and the dominant states that they had done BSE as much as 61% (45 people).
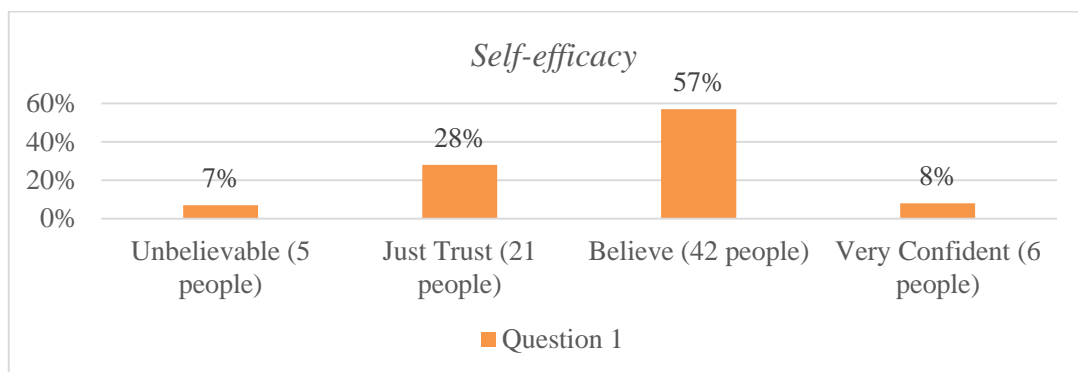
Self-efficacy

Figure 4. Percentage of self-efficacy domain analysis

In the domain of Self-efficacy, the dominant result stated that he believed that the BSE method could detect breast cancer as much as 57% (42 people).

DISCUSSION

In this study, a research was conducted on Knowledge of Breast Cancer Early Detection Using the BSE Method with the Application of Protection Motivation Theory. The age range of the respondents is between 18-22 years. This research was conducted to see the application of the PMT (Protection Motivation Theory) theory in people's lives, especially for undergraduate pharmacy students and the topic raised was the early detection of breast cancer with the BSE method. Among the breast cancer screening methods, female breast self-examination is a simple, effective and useful method for breast cancer screening that is suitable for all women and increases self-awareness.

From the results of the study, it was found that most of the respondents had a good level of knowledge about the BSE method (breast self-examination) to detect breast cancer early. In Table 1, it is found that 91% of respondents have good knowledge and only 9% of respondents have poor knowledge. This is because the background of the respondent is a pharmacy student who already knows and has knowledge about breast cancer and BSE. This is in accordance with the theory that the level of education taken by an individual is one of the factors that will support his ability to receive information [7].

In particular, an individual's protective motivation will increase when the threat level and coping assessment increase, which will increase the likelihood of performing health behaviors. According to PMT, intention is the most proximal predictor of behaviour. In turn, intentions are determined by two parallel cognitive processes: threat assessment and coping assessment. Threat assessment evaluates a person's perception of the threat of a particular disease or behavior using the three subconstructs of perceived risk, perceived severity, and fear arousal. Meanwhile, the coping assessment assesses the individual's ability to respond and avoid threatening hazards using three sub constructs of response efficacy, response cost, and self-efficacy [6].

PMT states that health-related behaviour is formed from 4 components, namely: Severity, vulnerability, response effectiveness, and self-efficacy [8]. First, in terms of severity, this relates to how much a person feels threatened by the threat. In threat assessment, the mind evaluates various factors that might predispose a person to engage in potentially undesirable behaviour [8]. In Figure 1, when asked a question about the level of concern, the dominant result was that he felt worried as much as 35% (26 people) and stated that all respondents strongly agreed that breast cancer would greatly affect health as much as 55% (41 people). This shows that respondents feel worried if breast cancer occurs in the respondent. Then the respondent also stated that if the respondent had breast cancer it would affect the respondent's health. This is in accordance with research journals that explain that breast cancer can affect health, some breast cancer patients experience psychological symptoms (emotional distress, impaired quality of life, stress, anxiety, and depression)[1]. This proves that there is a severity factor against him to carry out self-protection. This self-protection is important to reduce threats to individuals so that it can also support improvements from various sides, both psychological and sociological.

Second, in terms of perceived vulnerability, it is the individual's belief that he or she is susceptible to diseases that are potential health threats[8]. Respondents will think about how likely it is to get a disease. In Figure 2, when a question is asked about how likely the respondent is to get breast cancer, the dominant result is that there is a possibility that they have breast cancer with a fairly possible answer of 45% (33 people). Then when asked about concerns if experiencing symptoms similar to breast cancer, the results showed that the dominant respondent stated that he felt worried with the answer being very worried as much as 49% (36 people). This proves that with the knowledge related to the symptoms of breast cancer, respondents can be more aware of the presence of breast cancer so that they will take actions to overcome it. This proves that there is a vulnerability factor against him to protect himself. Self-protection is important to do to limit and even eliminate the amount of damage in the self due to the vulnerability of the respondent to experience something which in this case is breast cancer as well as increasing self-efficacy towards disease prevention [10].

Third, in terms of response efficacy, which is the belief that carrying out certain behaviors will result in reduced health threats [8]. The respondent's feeling if doing the BSE method will be able to detect breast cancer early. Based on the results of the questionnaire, respondents performed BSE (breast self-examination) as a method of detecting breast cancer, the results are as shown in Figure 3, more than half of the respondents who said they had done BSE were supported by the question of how often respondents did BSE. It was proven by the results that the dominant stated that he often did BSE with the answer once a month as many as 54% (40 people) and the dominant stated that he had done BSE as much as 61% (45 people). This means that most of the respondents have done the BSE method with the correct time, which is once a month. With the frequency of respondents doing BSE method, it means that respondents have confidence that BSE can reduce the threat to their health. This proves that there is a response effectiveness factor against him to carry out self-protection. Self-protection is important to do so that the severity and negative impact can decrease significantly so that it can increase self-confidence [11]

Fourth, in terms of self-efficacy is related to one's belief in doing something [8]. In this case someone believes that by doing the BSE method will be able to detect breast cancer early and can avoid the threat of a disease. The question asked is how confident the respondents are that the BSE method (breast self-examination) can detect the presence of breast cancer. It was found that the dominant result stated that he believed that the BSE method could detect breast cancer as much as 57% (42 people). This proves that there is a self-efficacy factor against him to protect himself. Self-protection is carried out because of the existence of self-efficacy, it is important to do so that perceptions of success in carrying out something related to the belief that they can successfully carry out behavior to produce certain results. Self-efficacy increases a person's ability to change behavior and is always alert [10].

In the research, there is still a level of knowledge about BSE that is not good. This can be caused by several things, including experience factors that affect one's knowledge and depend on one's memory at the time of filling out the questionnaire. Knowledge occurs after people sense a certain object [7]. Sensing occurs through the five human senses, namely the senses of sight, hearing, smell, taste, and touch. Good sensing will improve understanding of an object or information. Understanding is defined as an ability to explain correctly about known objects and can interpret the information correctly. Therefore, even though the respondent had received information about breast cancer and BSE but the respondent did not sense it well, this resulted in a poor understanding of the respondent..

CONCLUSSION

PMT is a threat assessment process and a response assessment process that results in an intention to carry out an adaptive (protective motivation) or maladaptive (putting a person at risk) response. PMT consists of 4 domains, namely severity, vulnerability, response effectiveness, and self-efficacy. From the results of respondents' answers, the four domains can be identified in the factors that cause respondents to carry out self-protection efforts from breast cancer with the BSE method. In addition, respondents have good knowledge of the BSE method so that they can try to do early detection of breast cancer.

REFERENCES

[1] Intan Milenia, V. Pengaruh Media Video Sadari Terhadap Peningkatan Pengetahuan Dan Sikap Deteksi Dini Kanker Payudara Pada Siswi Sma N 1 Bambanglipuro Kelas Xi (*Doctoral dissertation, Poltekkes Kemenkes Yogyakarta*). (2022).

[2] Handayani, S., & Sudarmiati, S. Young Women Knowledge of How to Do Mindfulness. In *JURNAL NURSING STUDIES* (Vol. 1). http://ejournal-s1.undip.ac.id/index.php/jnursing . (2012).

[3] Angrainy, R. Relationship Knowledge, Attitude About Awareness In Early Detecting Breast Cancer In Youth. *Jurnal Endurance*, 2(2), 232. https://doi.org/10.22216/jen.v2i2.1766 . (2017).

[4] Situmorang, H. E. *et a* . Training on Early Detection of Breast Cancer Using the "Breast Self-Examination" Method for Senior High School Students in Jayapura, Papua. *JOURNAL OF COMMUNITY SERVICE CREATIVITY 5*(7), 2152–2159. https://doi.org/10.33024/jkpm.v5i7.6219. (2022).

[5] South Kalimantan Provincial Health Office as of September 13, 2022. https://data.kalselprov.go.id/dataset/data/1323/bar. (2022)

[6] Zhang, M. *et al.* Determinants of intention to participate in breast cancer screening among urban chinese women: An application of the protection motivation theory. *International Journal of Environmental Research and Public Health*, *18*(21). https://doi.org/10.3390/ijerph182111093 . (2021).

[7] Nugraheni, A. 'Relationship of Knowledge Level About Consciousness With Conscious Behavior as Early Detection of Breast Cancer', *Journal of the Faculty of Medicine*, Universitas Sebelas Maret. (2017)

[8] Haditya, T. *et al.* 'Evaluation of Menstrual Pain Management (Dysmenorrhea) With Protection Motivation Theory', *Journal of Pharmaceutical Care and Science*, 2(2), (2022) . pp. 12–20.

[9] Amir, N. The Effectiveness Of Counseling To Reduce Mental Health Problems In Breast Cancer Diagnosis Patients And Treating Chemotherapy: A Systematic Review (Doctoral dissertation, Universitas Hasanuddin). (2022).

[10] Nopriadi, N., Rustam, M. and Fitri, A. 'The Relationship of Community Self-Efficacy to COVID-19 Vaccination at the Siak Hulu I Health Center, Kampar Regency in 2021', *Jurnal Kesehatan Komunitas*, 8(2), (2022). pp.181–187.

[11] Mou, J. *et al.* 'A Test of Protection Motivation Theory in the Information Security Literature : A Meta-Analytic Structural Equation Modeling Approach', 23, doi: 10.17705/1jais.00723. (2022)