



Quintet Educational Cards on Breast Cancer Patients' Knowledge Regarding Nutrition

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ABSTRACT

Introduction. Nutrition is important in undergoing treatment and healing process in breast cancer patients. The incidence of malnutrition and nutritional disorders in breast cancer patients reaches 35-70% of 72 breast cancer patients. One of the factors that can influence patients' attitudes toward managing nutrition in breast cancer patients is increasing knowledge through health education. This study aims to determine the effect of quintet card educational media on breast cancer patients' level of nutrition knowledge. **Methods.** This type of research is a quantitative pre-experimental study with a one-group pretest-posttest design. The population in this study was breast cancer patients in the Association for Supporting Women with Breast Cancer (ASWBC). The sample in this study consisted of 27 respondents. Sampling using a purposive sampling method. The statistical analysis used in this study is the marginal homogeneity test. **Results.** The analysis showed a p-value of 0.000 ($\alpha \leq 0.05$), which showed a significant difference in knowledge about nutrition in breast cancer patients before and after health education was carried out through the quintet card educational media. Nutrition knowledge is urgently needed by breast cancer patients and the quintet card educational media can be used as information material about nutrition in breast cancer patients and can be used in activities in the ASWBC. **Conclusion.** This educational media can be used by breast cancer patients following SOP as a play guide and as a media for health education.

1. Introduction

Breast cancer is the most common cancer in women worldwide (22% of all new cases of cancer in women) and is the second leading cause of cancer death after lung cancer. More than 185.000 women are diagnosed with breast cancer every year. The highest incidence of breast cancer occurs between 40 and 49 years old, while in women under 35 years old, it is less than 5%. Male breast cancer is rare and accounts for up to 1% of all breast cancers. Patients with breast cancer can be treated using various breast cancer treatment methods, namely surgery, radiation therapy, biological therapy, hormone therapy, and chemotherapy, which aim to cure disease, inhibit the growth of cancer cells, and alleviate the symptoms caused by cancer. Therapy can cause side effects in breast cancer patients on the gastrointestinal system, namely nausea, vomiting, stomatitis, anorexia, and changes in taste. This can result in the nutritional intake of breast cancer patients decreasing, even resulting in detrimental effects on nutritional status so that patients can experience malnutrition or cachexia due to lack of knowledge about nutrition,

food components, and adequate nutrition.^{1,2}

2. Methods

This type of research is quantitative within the scope of maternity nursing with a pre-experimental research design with a one-group pretest-posttest design approach. This research aimed to determine the effect of quintet card educational media on the level of knowledge of breast cancer patients regarding nutrition in Palembang, South Sumatra. This research was carried out on June 11, 2023, with the research population, namely all breast cancer patients in the Community Supporting Association for Women with Breast Cancer (ASWBC) in the Palembang area, totaling 50 people with a sample of 27 people. The data in this study were collected through a questionnaire distributed offline to measure the level of knowledge about nutrition before and after providing the quintet card educational media intervention using non-parametric statistical tests. The hypothesis test used in the research was the pairwise categorical comparative hypothesis, specifically the marginal homogeneity

test.

3. Results

1. Univariate Results

1.1. Respondent Characteristics

Based on Table 1, which shows the frequency distribution of respondents who are breast cancer patients, and the results show that the majority are aged 30-50 years with a total of 18 people, the majority of respondents' occupation is housewives with 22 people, the lowest level of education is Diploma I with one person, and the length of treatment experienced by respondents was 1-5 years with a total of 17 people.

1.2. Frequency Distribution of The Level of Knowledge About Nutrition in Breast Cancer Patients Before Giving The Quintet Card Educational Media Intervention

Table 2 describes the level of knowledge in one group of 27 respondents before carrying out the quintet card educational media intervention. Based on Table 2, this study shows that the frequency distribution of respondents' knowledge level before being given the quintet card educational media intervention shows that more than half had poor knowledge.

1.3. Frequency Distribution of The Level of Knowledge About Nutrition in Breast Cancer Patients After Giving The Quintet Card Educational Media Intervention

Table 3 describes the level of knowledge in one group of 27 respondents after carrying out the quintet card educational media intervention. Based on Table 3, this study shows the frequency distribution of respondents' level of knowledge after being given the quintet card educational media intervention. The majority (92.65%) had a good level of knowledge.

2. Bivariate Results

Bivariate analysis was used to determine the difference in knowledge level scores before and after the quintet card educational media intervention in breast cancer patients in one group with 27 respondents. The results of the bivariate analysis were tested using the marginal homogeneity test.

2.1. Differences in The Level of Knowledge of Breast Cancer Patients Regarding Nutrition Before And After Being Given The Quintet Card Educational Media

Based on Table 4, this study shows the difference in the level of knowledge of breast cancer patients regarding nutrition before and after being given the quintet card educational media intervention; there was a total of 27 respondents, with 16 people (59.3%) before the health education intervention regarding nutrition was in the poor category. After the intervention, it was found that 15 (55.6%) experienced an increase in knowledge from poor to good, while one (3.7%) respondent experienced a rise in knowledge from poor to adequate.

Table 1. Respondent characteristics

Respondent characteristics	n	Percentage
Age (Years)		
20-35	0	0
35-50	18	66.7%
>50	9	33.3%
Total	27	100.0%
Employment		
Housewife	22	81.5%
Civil servants	2	7.4%
Retired civil servants	3	11.1%
Total	27	100.0%
Education Level		
Junior high school	3	11.1%
Senior high school	15	55.6%
Diploma I	1	3.7%
Bachelor's degree	8	29.6%
Total	27	100.0%
Duration of Treatment		
<1 Year	6	22.2%
1-5 Years	17	63.0%
>5 Years	4	14.8%
Total	27	100.0%

Table 2. Frequency distribution of knowledge levels regarding nutrition in breast cancer patients before giving the quintet card educational media intervention

Knowledge before intervention is given	Frequency	Percentage
Good	0	0
Adequate	11	40.7%
Poor	16	59.3%
Total	27	100.0%

Table 3. Frequency distribution of levels of knowledge regarding nutrition in breast cancer patients after quintet card educational media intervention

Knowledge after being given intervention	Frequency	Percentage
Good	25	92.6%
Adequate	2	7.4%
Poor	0	0
Total	27	100.0%

Table 4. Differences in the level of knowledge of breast cancer patients regarding nutrition before and after being given the quintet card educational media intervention

Knowledge before giving intervention		Knowledge after being given intervention						Total		<i>p-value</i>
		Good		Adequate		Poor		n	%	
		n	%	n	%	n	%			
Good		0	0%	0	0%	0	0%	0	0%	0.000
Adequate		10	37%	1	3.7%	0	0%	11	40.7%	
Poor		15	55.6%	1	3.7%	0	0%	16	59.3%	
Total		25	92.6%	2	7.4%	0	0%	27	100%	

4. Discussion

4.1. Respondent Characteristics

The age characteristics of the respondents in the study were that the majority were 35-50 years old with a total of 18 people (66.7%) respondents, the rest were >50 years old with a total of 9 people (33.3%) respondents. Based on research, Sulviana & Kurniasari explain that women aged 35-50 years have a high risk of developing breast cancer, which can be caused by several factors such as decreased organ function, exposure to the hormone estrogen, and changes in genetic mutations, decreased body endurance.³ Apart from that, the increased risk of developing breast cancer over the age of 50 years can usually be caused by breast fat and tissue due to the accumulation of toxins that collect in breast fatty tissue. So, the risk of exposure to breast cancer increases with increasing age. This is also in line with research by Dewi et al. which means that knowledge of nutritional status in cancer patients can be caused by internal factors such as age, physical activity, infection, type of cancer, and side effects of therapy. Therefore, those aged 45 to 55 years and elderly people over 60 years old are vulnerable to nutritional disorders due to cell degeneration, which causes a decrease in the body's ability to digest food, and at this age, it also affects the level of knowledge about nutrition due to decreased memory and less exposure to food information related to nutritional knowledge, or food intake that can and cannot be consumed.⁴

The job characteristics of the respondents in this study were that the majority were housewives,

totaling 22 respondents (81.5%) and the remainder working as civil servants, totaling two respondents (7.4%), and retired civil servants, totaling three respondents (11.1%). This aligns with research conducted by Maulida et al. who found that the most common occupation was housewife, totaling 23 respondents (88.5%), and stated that work could provide someone with experience and knowledge. This is also based on research by Rizqiyah & Abdurrachim, which states that someone who works is known to be better at understanding information and obtaining information regarding the level of nutritional knowledge than someone who does not. Because someone can interact with other people to exchange information. On the other hand, if someone is not working, there will be very little communication due to a lack of interaction with other people. This shows that working breast cancer patients can obtain nutritional knowledge information from various relevant sources. Meanwhile, breast cancer patients who do not work can only rely on information from specific sources because of the limited range of social interactions.^{5,6}

Characteristics of the educational level of respondents in this study: the majority of respondents were high school or vocational school graduates, totaling 15 people (55.6%), and the remaining eight people had bachelor's degree degrees (29.6%), three people from junior high school (11.1%), and D1 amounted to 1 person (3.7%). According to Notoatmodjo et al. the higher a person's level of education, the better their knowledge. A

person's ability to receive and understand information is determined by their education level. Apart from that, education can increase a person's intellectual maturity, which can influence insight, ways of thinking, and ways of making decisions. Therefore, the higher a person's level of knowledge, the better your knowledge about your health will be.⁷ This also aligns with research by Sulviana & Kurniasari that someone who has a high education and sufficient knowledge will be easily sensitive to the symptoms of breast cancer.³ Apart from that, research by Herawanto et al. explains that the lower a person's level of education, the lower the level of acceptance and understanding of nutritional knowledge.⁸ So, this can affect the patient's recovery rate, as well as affect nutritional intake due to minimal knowledge about nutrition, and compared to someone who has a high level of knowledge about adequate nutrition, it will be more helpful in the healing process due to adequate nutritional status. Even if someone has a higher education. However, having an unhealthy lifestyle can be a risk factor for breast cancer.²

The characteristics of the duration of treatment for respondents in this study were the majority 1-5 years, totaling 17 respondents (63.0%), and the remainder undergoing treatment for <1 year, totaling six respondents (22.2%), and >5 years totaling 4 (14.8%). Rizqiyah & Abdurrachim, 2022 stated that many respondents found out too late, were aware of the signs and symptoms, and did not know about nutritional knowledge in breast cancer.⁵ Fewer patients have had cancer for >5 years than patients who have had cancer for between 1 and 5 years. There is a connection between the prognosis of breast cancer, especially the possibility of developing the disease in the future about events that occur with the disease. Apart from that, the length of treatment and the level of nutritional knowledge can influence the healing of breast cancer, usually the longer the treatment, the more attention the patient pays to the nutritional intake entering the body. Apart from healing treatment, this also prevents malnutrition in breast cancer patients. Thus, nutritional knowledge in breast cancer patients is very much needed for nutritional intake and to create an ideal nutritional status.²

4.2. Level of Knowledge About Nutrition in Breast Cancer Patients Before Providing The Quintet Card Educational Media Intervention

The research results before being given the quintet card educational media intervention regarding nutrition to 27 breast cancer patients showed that most of the respondents had a level of knowledge with a score of 59.3% in the poor category, and a sufficient score of 40.7%. This is in line with Notoatmodjo, who believes that lack of knowledge is a result of environmental conditions and the media (information sources), which causes a relationship between lack of knowledge and the factors that

influence it. Sharing education through playing quintet cards is a way to broaden individual and group understanding. The results of the analysis of the pre-test questionnaire showed that almost all respondents were wrong in answering questions based on nutritional sub-categories (dietary requirements and characteristics of adequate nutrition), foods that may be consumed (carbohydrates, vegetables, and fats), and foods that should not be consumed (animal protein, and instant vegetables). This is because respondents have not been exposed to material about nutrition in depth.⁷ Nurfila et al. state that increased knowledge is influenced by several external and internal factors. For the level of knowledge of external factors such as various sources of information, economic factors, and culture/environment. For the level of knowledge, internal factors such as education, age, interests, and behavior.⁹

Increased knowledge regarding the effectiveness and acceptability of interventions carried out with respondents. This is also related to various factors such as the respondent's concentration when filling out the questionnaire, nutritional knowledge, time, place, method of delivery, and the media used.⁸ According to the researcher's assumption in this study, the nutritional knowledge of breast cancer patients before being given the quintet card educational media intervention was still low or in the deficient category. This is supported by research by Kurniati Nia et al. which explains that the higher a person's formal education, the easier it will be to understand information.¹⁰ Moreover, respondents in this study were not exposed to in-depth material or information about nutrition.

4.3. Level of Knowledge About Nutrition in Breast Cancer Patients After Providing The Quintet Card Educational Media Intervention

The results of the research after being given the quintet card educational media intervention regarding nutrition to 27 breast cancer patients showed that respondents had a level of knowledge in the good category with a value of 92.6% and in the sufficient category with a value of 7.4%. Meanwhile, the results of research conducted by Nurfila et al. discuss the influence of the quartet card game on knowledge about vegetables and fruits in elementary school students with a total of 55 respondents, who have a good level of knowledge with a median score of 73 (46-90%) which means this value has increased from before and p-value = 0.006 (p-value < α = 0.05) which means health education using quintet cards can increase knowledge. The results of the analysis of the respondents' post-test questionnaires showed that many answered correctly based on the sub-categories of breast cancer (definition, treatment goals, role of disease, treatment and prevention), nutrition (role and goals of nutrition), permitted foods (carbohydrates, animal protein, vegetable

protein), foods that are not permitted (instant vegetables and fruit, as well as drinks). This is in line with the research by Samsiyah et al. that learning media is one way to provide interesting information and explanations. Thus, creating new knowledge that is easy to understand. Apart from that, learning media also functions so that recipients get the latest information and direct and clear knowledge.^{9,11}

According to the researchers' assumption in this study, the nutritional knowledge of breast cancer patients after being given the quintet card educational media intervention increased their level of nutritional knowledge and entered the good category. This is supported by Nurfila et al. who state that quintet cards can increase respondents' nutritional knowledge.⁹ Sulastri et al. also concluded that the quintet card educational media is an alternative learning media that creates an effective educational element, as well as improves reading skills because in the quintet card itself, there is material and visual media in the form of images to support the explanation, It can be said that the learning material is varied and interesting. It can efficiently and quality produce new information to provide knowledge and information to someone.¹²

4.4. Level of Knowledge About Nutrition in Breast Cancer Patients Before And After Giving The Quintet Card Educational Media Intervention

The results of this study, after statistical testing with marginal homogeneity, resulted in p-value = 0.000, where $p < 0.05$, which means there was a significant difference between before and after being given the quintet card educational media intervention. Nurfila et al. show that there is a difference in knowledge before and after playing the game with quintet card educational media in 55 respondents with a p-value = 0.006. The results of the research before being given the intervention were that 16 respondents had a poor level of knowledge regarding nutrition, and 11 respondents had a sufficient level of knowledge regarding nutrition. After being given the quintet card media intervention, almost all respondents changed from the poor and sufficient categories, increasing significantly to 25 respondents with a level of knowledge in the good category and 2 respondents with a level of knowledge in the sufficient category. Nurfila et al. show that before being given the intervention, 55 respondents had a poor knowledge with a median value of 70 (53-86%) and after being given the intervention had good knowledge with a median value of 73 (46-90%), which means that a significant difference was found between before and after being given the quintet card educational media intervention.⁹ Samsiyah et al. show that before being given the intervention, 30 respondents had a poor level of knowledge with a very low average score of 41 and after being given the intervention had good knowledge with an average score of 75, before and after being given the card

educational media intervention and shows that the quintet cards are effective in a person's comprehension ability.¹¹ Dewi et al. state that providing health education regarding nutrition can help increase the level of nutritional knowledge in breast cancer patients.⁴ Good knowledge can form awareness about nutrition to maintain the nutritional intake that enters the body, which ultimately can maintain the ideal nutritional status. In addition, continuous nutritional intake affects nutritional status. Thus, good nutritional intake can help in healing breast cancer patients. In this study, health education was carried out by providing interventions through the quintet card educational media, which has a good influence on receiving information and has advantages as a medium and method.² This is supported by Sulastri et al. 2020 who stated that quintet cards have the benefit of improving reading skills and remembering material because the cards contain material and visuals in the form of interesting images.¹² Apart from that, according to Samsiyah et al. quintet cards have advantages, namely: their use does not depend on electricity, do not require other supporting tools for presentation, can be played in various places, can be played at any time, and quintet cards have specificity and uniqueness. separately.¹¹ Thus, creating an interesting and fun educational game.

According to the researcher's assumption, the level of knowledge regarding nutrition using the quintet card educational media can be used as an alternative to increase the level of nutritional knowledge in breast cancer patients and obtain information in a fun way. Dewi et al. explain that good knowledge can form awareness about nutrition to maintain the nutritional intake that enters the body, which ultimately can maintain an ideal nutritional status and help in healing breast cancer patients.⁴ Furthermore, according to Nurfila et al. using quintet card educational media in implementing knowledge-level interventions has many advantages, one of which is understanding the material or information obtained.⁹ It shows the influence of the quintet card educational media on the level of knowledge of breast cancer patients regarding nutrition.

5. Conclusion

The characteristics of the respondents in this study were 66.7% in age (35-50 years), 81.5% had jobs as housewives, 55.6% had a high school/vocational school education level, and 63.0 % experienced a treatment duration of around 1-5 years, the level of knowledge of breast cancer patients before being given the quintet card educational media regarding nutrition had a level of knowledge in the poor category (59.3%), the level of knowledge of breast cancer patients after being given the quintet card education media regarding nutrition has a level of knowledge in the good category (92.6%), there is a significant difference between the level of knowledge

before and after giving the quintet card educational media regarding nutrition, this is shown in the results of the analysis of the level of knowledge which shows a significant value of p-value = 0.000 (p-value < 0.05).

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