

Knowledge and Income Determining Treatment Options for Breast Cancer Patients

Oktavia Nur Azizah Jain¹, Laili Rahayuwati², Lilis Mamuroh³, Kusman Ibrahim⁴, Raden Nabilah Putri Fauziyyah^{5*}

^{1,5}Faculty of Nursing, Universitas Padjadjaran, Bandung, West Java, Indonesia

²Department of Community Nursing, Faculty of Nursing, Universitas Padjadjaran, Bandung, West Java, Indonesia

³Department of Maternity Nursing Faculty of Nursing, Universitas Padjadjaran, Bandung, West Java, Indonesia

⁴Department of Medical Surgical Nursing, Faculty of Nursing, Universitas Padjadjaran, Bandung, West Java, Indonesia

*Korespondensi : nabilahputrif@gmail.com

Abstract: Breast cancer is still the most common case in many countries. Breast cancer can threaten a person's quality of life, especially for someone who has difficulty choosing treatment due to lack of understanding of treatment options. In choosing a treatment influenced by knowledge and income which are internal factors that must be present in determining treatment options, because it will determine the right choice of treatment. This study aims to discover the choice of treatment in breast cancer patients based on knowledge and income. This research is a cross sectional study. This study used secondary data from a Leading Tertiary Study grant in 2015. Sampling in this study were 200 breast cancer patients undergoing chemotherapy. Data processing used univariate and crosstabs techniques with the correlation test using Chi-Square. In this study, there was a relationship between knowledge and choice of treatment, but there was no relationship between income and choice of treatment. The conclusion from this research is the treatment of breast cancer is significantly influenced by the patient's knowledge. this is obtained from the p value of $0.008 < 0.05$, which indicates that the relationship significantly influences each other It is hoped that this research can be a source of information that can be used by health workers in providing nursing care.

Keywords: breast cancer, income, knowledge, treatments option

INTRODUCTION

People who have low income or low level of education can be the cause of greater tumor growth on Clinical Breast Examination (CBE) and low treatment rates. The delay in diagnosis in patients with low incomes can occur because fewer of them have health insurance and have a heavier burden of living. In early stage breast cancer does not have severe symptoms, this group of people can attribute their symptoms to malignant disease to produce effects on their family until severe symptoms appear, such as larger tumor size, metastases to lymph nodes, local invasion, and even already metastasized (Wang et al., 2013).

Breast cancer is the most common cancer in the world. In 2020 there will be 2.3 million women with breast cancer with mortality rate around 685,000. It is known that breast cancer is the second most common cancer in the world, amounting to 2,088,849 out of a total of 18,078,957 cancer cases (The Global Cancer Observatory, 2018; WHO, 2021). In Indonesia, breast cancer are the most common cancer cases for women with 42.1 per 100,000 people with a mortality rate of around 17 per 100,000 people (Ministry of Health of the Republic of Indonesia, 2019). Seeing the high rate of breast cancer case, there are serious impacts that require handling and attention as early as possible, so the impact can be handled immediately (Marsanti et al., 2016).

Breast cancer can be treated in various ways. The stage of treatment has both positive and negative impacts. Therefore, in choosing the treatment, patients and their family must be able to consider carefully. Treatment of breast cancer are radiation, chemotherapy, surgery and combination, which are part of modern medicine (Irawan et al., 2017). Breast cancer patients who look for treatment, in addition to using modern medicine, they also use traditional medicine, because of the belief that traditional medicine is more trusted and relatively more affordable compared to modern medicine which costs relatively higher (Ain & Asriyadi, 2018; Shabrina & Iskandarsyah, 2019).

Apart from using modern and traditional medicine, there are also breast cancer patients who use complementary medicine (Irawan et al., 2017). Complementary medicine is a treatment that is carried out in conjunction with conventional medical treatment. Someone chooses to use complementary medicine because they have a belief, see the reactions that are caused, consider their income, or do not want to use chemicals in their treatment (Rahayuwati et al., 2017). The decision to choose treatment must be based on knowledge, because by having a lot of knowledge, one can find out the impact of the chosen treatment option (Desni et al., 2011). There are factors that can influence the choice of treatment, namely knowledge, attitudes, and education. Socio-culture and the amount of income that someone earns can also influence the choice of treatment (Ismail, 2015; Rahayu, 2012).

Knowledge is the domain that must exist in taking actions which can provide benefits for someone, especially for breast cancer patients in determining treatment. Knowledge also has the goal of being able to solve one's problems in resolving the issue at hand. Income is also a factor that influences someone in choosing treatment (Ismail, 2015). Knowledge and income are among the internal factors possessed by breast cancer patients, which can influence the choice of treatment. Many health facilities are available for the treatment of a person in dealing with the disease she is experiencing. One of the referral health facilities for breast cancer treatment in the province of West Java is Hasan Sadikin Hospital in Bandung.

From similar studies suggest that the occupation and educational level of women with breast cancer affect the clinical and pathological characteristics of their tumors, the level of CBE implementation and treatment patterns. The study found that people with lower incomes or lower levels of education were likely to have larger tumors at presentation and implementation of lower levels of CBE and treatment (Wang et al., 2013). There are several factors that can influence breast cancer patients in choosing a treatment. The knowledge as well as the amount of income owned by breast cancer patients varies. Therefore, differences in knowledge and income will affect a person in choosing a treatment to overcome her health problem. Treatment options in this study were classified into three groups, namely modern medicine, traditional medicine and complementary medicine. The purpose of this study was to determine treatment options in breast cancer patients based on knowledge and income.

METHOD

This research is a cross sectional study. Descriptive statistics were used to summarize the level of knowledge breast cancer patients, income, and sources of information that explain breast cancer. The data is explained in terms of percentage and frequency. The data analyze used univariate and crosstabs techniques with the correlation test using Chi-square. $P < 0.05$ was considered statistically significant. This study used secondary data from a Leading Tertiary Study grant in 2015. The population in this study was 200 breast cancer patients undergoing chemotherapy. The sampling technique used in this study was a total of 200 breast cancer patients undergoing chemotherapy.

This research has passed the ethics test with the primary data number for ethical license: 277 / UN6.C1.3.2 / KEPK / PN / 2015 and ethics for secondary data permit number: 320 / UN6.KEP / EC / 2020 by upholding the principle of maintaining data confidentiality and processing the data obtained in accordance with the procedure to get maximum and useful results.

RESULTS

Table 1 Characteristic-Frequency Distribution of Breast Cancer Patients

Characteristics	Frequency (f)	Percentage (%)
Breast Cancer Patient Knowledge		
High	83	41,5
Moderate	63	31,5
Low	54	27,0
Income		
Less than the minimum wage (UMR)	159	79,5
More than the minimum wage (UMR)	41	20,5
Sources of Information Obtained About Breast Cancer		
Books	1	0,5
Electronic media	14	7,0
Health workers	140	70,0
Friends	12	6,0
Neighbors	6	3,0
Others	27	13,5

Table 2 Cross Tabulation Table between Knowledge and Income with Choice of Treatment

	Treatment Selection								<i>p-value</i>
	Modern		Traditional		Complementary		Total		
	<i>F</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	
Knowledge									
High	51	47,7	1	5,9	31	40,8	83	41,5	0,008
Moderate	31	29,0	6	35,3	26	34,2	63	31,5	
Low	25	23,4	10	58,8	19	25,0	54	27,0	
Income									
Less than the UMR	86	80,4	15	88,2	58	76,3	159	79,5	0,519
More than the UMR	21	19,6	2	11,8	18	23,7	41	20,5	

From table 1, that almost half of breast cancer patients or 83 patients (41.5%) have knowledge about breast cancer in the high category, and half of breast cancer patients or 54 patients have knowledge in the low category (27.0%) and 63 patients in the moderate knowledge category (31.5%).

The result from the percentage of income per-month of breast cancer patients in table 1 shows that most patients have an income less than the UMR (79.5%). Table 1 also shows that in the choice of treatment, breast cancer patients mostly choose modern medicine (53.5%), and only 8.5% choose traditional medicine. Table 4.1 shows the results of the percentage of breast cancer patients' knowledge regarding the source of information obtained from health workers (70.0%), and from books (0.5%).

In table 2, it is known that the p-value is 0.008. Because the p-value is $0.008 < 0.05$, it means that there is a relationship between knowledge and the choice of treatment in breast cancer patients. In table 2 it is also known that the p-value is 0.519. Because the p-value is $0.519 > 0.05$, it means that there is no relationship between income and the choice of treatment in breast cancer patients.

DISCUSSION

In this study, most patients had knowledge of breast cancer in the high category (41.5%). Knowledge is something that is directly owned, from not knowing to knowing an object by sensing through the five

senses. Knowledge is considered important to shape of someone's actions. Knowledge has a very close relationship with information that owned by a person. The more knowledge breast cancer patients own, the higher the insight that breast cancer patients have in taking action, including by choosing the right treatment. In breast cancer patients, low knowledge of important information on the disease and treatment to be chosen will result in inconsistency of breast cancer patients in undergoing treatment (Pertiwi et al., 2012).

Patients should be informed about their illness, the benefits and side effects of therapy, and give their informed consent before treatment. Relevant and understandable information should be provided to patients to obtain sufficient knowledge to support them actively involved in joint decision making, to comply with the treatment plan, to make them aware of potential effects and side effects to understand what to do if side effects occur (Berger et al., 2018).

High knowledge will make a person more likely to identify physical changes in the breast, which may indicate the presence of breast cancer and choose to undergo screening or treatment regularly. In this study, the knowledge of more than half (70.0%) of breast cancer patients was high, because breast cancer patients also got information from health workers who understood breast cancer and provided all information about breast cancer (Subramanian et al., 2019). From a study in Norway, patients gained a higher level of knowledge about their disease and planned treatment after being informed by doctors and other health workers during their treatment. This also occurred in patients with the lowest level of knowledge at baseline (Berger et al., 2018).

Based on the results of the frequency distribution in Table 1, most breast cancer patients had an income in the category less than the UMR (79.5%) and 20.5% breast cancer patients had an income in the category more than the UMR. In this study, the categorization of less than the UMR and more than the UMR is taken from the average UMR in 2016 in West Java province, that is if $> \text{Rp. } 2,250,000$ then it is categorized to be less than the UMR and if $< \text{Rp. } 2,250,000$ it is categorized to more than the UMR (Badan Pusat Statistik Indonesia, n.d.). The group of patients with low incomes allows for delay in clinical diagnosis because they tend to have less insurance and suffer a heavier burden of life. Delay in diagnosis can result in severe symptoms such as an enlarged tumor size to a tumor that has metastasized (Wang et al., 2013).

Based on the frequency distribution in table 1, it was found that breast cancer patients choose modern medicine (53.5%), complementary medicine (38.0%) and traditional medicine (8.5%). It can be seen that breast cancer patients preferred modern medicine (53.5%). From the results of research by Irawan, et al (2017) according to his research, the use of modern medicine can improve the quality of life of breast cancer patients, because modern medicine has been medically proven to reduce symptoms caused by breast cancer, resulting in an increase in the quality of life of breast cancer patients.

Based on the frequency distribution table in table 1, it was found that breast cancer patients had information sources from medical personnel (70.0%), other sources of information in this study (13.5%) were obtained from magazines, family, husband, and children. There are also information sources obtained from electronic media (7.0%), information sources obtained from friends (6.0%), information sources obtained from neighbors (3.0%) and information sources for breast cancer patients obtained from books (0, 5%). Different with a research that said the largest source of information about breast cancer was obtained from television / radio (34.8%), newspapers (20.2%), others (14.5%), seminars (5.7%) recitation (0.3%), while medical personnel was only 10.5% (Desanti et al., 2010).

Based on the cross-tabulation results between the choice of treatment and knowledge in table 2, breast cancer patients who chose modern medicine had high knowledge (47.7%), and breast cancer patients who chose traditional medicine were mostly in the low category level of knowledge (58, 8%), while breast cancer patients who chose complementary treatment had high knowledge (40.8%). Breast cancer patients who chose complementary medicine also had sufficient knowledge (34.2%). The p-value in this study is 0.008. Because the p-value is $0.008 < 0.05$, it means that there is a relationship between knowledge and the choice of treatment in breast cancer patients. Likewise with the research of Rahayu (2012) which states that there is a relationship between knowledge and the choice of treatment, because the level of

knowledge in patients can affect the choice of treatment chosen. Someone who has high knowledge will be more selective in choosing treatment, because there is a fear in choosing treatment.

In this study, almost half of breast cancer patients knowledge is in high category and most of the patients choose modern medicine. With a high level of knowledge, breast cancer patients can understand the impact of the chosen treatment. Meanwhile, low knowledge of breast cancer patients can affect the chosen treatment. For example, by not paying attention to the impact of the chosen treatment. Knowledge is one of the factors that relates to women in finding and choosing breast cancer treatment. This knowledge includes a person's personal factors that can influence the choice of breast cancer treatment (Ayu et al., 2020). The higher their level of education, the more likely the patient is to undergo radiotherapy, chemotherapy and endocrine therapy (Wang et al., 2013).

Based on the results of the cross tabulation table, between the income earned per month and the choice of treatment chosen by breast cancer patients as illustrated in table 2, most breast cancer patients who chose modern medicine had an income in the category of less than the UMR (80.4%). while breast cancer patients who chose traditional medicine had an income in the category less than the UMR (88.2%). In this study, there were still those who choose traditional medicine, as well as the results from a research that there is still someone who uses traditional medicine because it is considered cheaper, practical, and easy to reach compared to modern medicine which requires high costs (Desni et al., 2011). In a study that found among women who said cost was important in the decision to choose surgical treatment, 58% experienced a significant financial burden. Costs were important to women facing decisions for breast cancer surgery, especially at lower household incomes (Greenup et al., 2019).

Meanwhile, not all traditional treatments provide satisfactory results, especially for serious physical ailments such as heart disease, diabetes and cancer. Breast cancer patients who chose complementary medicine had an income of less than the UMR (76.3%). Although in this study income did not affect the choice of treatment, respondents in this study preferred modern medicine, because breast cancer patients did not only use their monthly income, but also most of them used health insurance to cover their choice of treatment (94.0%). There are also those who used insurance (4.5%) and Jamkesmas in Indonesian or community health insurance (1.5%) to pay for the treatment they chose. However, this is different with a research which states that the amount of income is a factor that determines the choice of treatment. Someone who has a high income will choose modern medicine, while someone who has less income will prefer traditional medicine (Ismail, 2015). Income is one of the main factors in seeking treatment and income can affect a person in their treatment (Atashbahar et al., 2013; Knight et al., 2015; Subramanian et al., 2019).

In this study obtained the p-value of 0.519, with a p-value of $0.519 > 0.05$, it means there is no relationship between the income obtained by breast cancer patients and the choice of treatment in breast cancer patients. Meanwhile, knowledge affects the choice of treatment in breast cancer with a p value the is $0.008 < 0.05$.

CONCLUSION

In this study, the choice of breast cancer treatment is influenced by the patient's level of knowledge. This study also shows that there is a relationship between knowledge and treatment choices. On the other hand, there is no significant relationship between income and the choice of treatment. Researchers hope that the result from this study can be used as a source of information in making further research and can be used by health workers as a source of information in providing nursing care. It is also hoped that health professionals able to provide better health socialization and promotion to someone who has symptoms of breast cancer or who has already experienced breast cancer in terms of knowledge of breast cancer and good treatment options.

REFERENCES

- Ain, S., & Asriyadi, F. (2018). Hubungan Tingkat Pendapatan dengan Penggunaan Obat Tradisional pada Pasien Diabetes Melitus di Desa Kertabuana Wilayah Kerja PUSKESMAS Separi III Tenggara Seberang. Universitas Muhammadiyah Kalimantan Timur.
- Atashbahar, O., Bahrami, M., Asqari, R., & Fallahzadeh, H. (2013). An examination of treatment seeking behavior affecting factors: A qualitative study in Iran. *World Applied Sciences Journal*, 25(5), 774–781. <https://doi.org/https://doi.org/10.5829/idosi.wasj.2013.25.05.1086>
- Ayu, I., Prami, A., Made, L., & Sukmayanti, A. (2020). Gambaran perilaku mencari pengobatan pada perempuan dengan kanker payudara. *Jurnal Psikologi Udayana*, 1–11.
- Badan Pusat Statistik Indonesia. (n.d.). Upah Minimum Regional/Provinsi (UMR/UMP) dan rata-rata Nasional per tahun (Dalam Rupiah), 1997-2016. <https://www.bps.go.id/linkTableDinamis/view/id/917>
- Berger, O., Grønberg, B., Loge, J. H., Kaasa, S., & Sand, K. (2018). Cancer patients' knowledge about their disease and treatment before, during and after treatment: a prospective, longitudinal study. *Bio Med Central Cancer*. <https://doi.org/https://doi.org/10.1186/s12885-018-4164-5>
- Desanti, O. I., Sunarsih, I., & Supriyati. (2010). Persepsi Wanita Berisiko Kanker Payudara Tentang Pemeriksaan Payudara Sendiri Di Kota Semarang, Jawa Tengah. *Berita Kedokteran Masyarakat*, 26(3), 152–161.
- Desni, F., Wibowo, R., & Rosyidah. (2011). Hubungan Pengetahuan, Sikap, Perilaku Kepala Keluarga Dengan Pengambilan Keputusan Pengobatan Tradisional Di Desa Rambah Tengah Hilir Kecamatan Rambah Kabupaten Rokan Hulu, Riau. *Jurnal Kesehatan Masyarakat (Journal of Public Health)*, 5(3). <https://doi.org/10.12928/kesmas.v5i3.1074>
- Greenup, R. A., Rushing, C., Fish, L., Campbell, B. M., Tolnitch, L., Hyslop, T., Peppercorn, J., Wheeler, S. B., Yousuf Zafar, S., Myers, E. R., & Shelley Hwang, E. (2019). Financial costs and burden related to decisions for breast cancer surgery. *Journal of Oncology Practice*, 15(8), E666–E676. <https://doi.org/10.1200/JOP.18.00796>
- Irawan, E., Rahayuwati, L., & Yani, D. I. (2017). Hubungan Penggunaan Terapi Modern dan Komplementer terhadap Kualitas Hidup Pasien Kanker Payudara Relationship between Modern and Complementary Therapies on the Life Quality of Breast Cancer Patients Undergoing Chemotherapy. *JKP*, 5(19–28).
- Ismail, I. (2015). Faktor Yang Mempengaruhi Keputusan Masyarakat Memilih Obat Tradisional Di Gampong Lam Ujong. *Idea Nursing Journal*, 6(1), 7–14.
- Knight, A., Hwa, Y. S., & Hashim, H. (2015). Complementary alternative medicine use amongst breast cancer patients in the northern region of peninsular Malaysia. *Asian Pacific Journal of Cancer Prevention*, 16(8), 3125–3130. <https://doi.org/10.7314/APJCP.2015.16.8.3125>
- Marsanti, Febriana, C., Ibrahim, A., & Rahmawati, D. (2016). Karakteristik dan Pola Pengobatan Pasien Kanker Payudara di RSUD Abdul Wahab Sjahrane. *Prosiding Seminar Nasional Kefarmasian Ke-3*. <https://doi.org/https://doi.org/10.25026/mpc.v3i1.60>
- Ministry of Health of the Republic of Indonesia. (2019). Hari Kanker Sedunia 2019. <https://www.kemkes.go.id/article/view/19020100003/hari-kanker-sedunia-2019.html>
- Pertiwi, M. P., Karini, S. M., & Agustin, R. W. (2012). Hubungan antara Resiliensi dan Pengetahuan tentang Pengobatan Kanker Payudara dengan Kepatuhan Pasien di RSUD Dr. Moewardi Surakarta. *Jurnal Wacana*. <https://doi.org/https://doi.org/10.1111/j.1525-142X.2009.00391.x>
- Rahayu, D. A. (2012). Faktor-faktor yang berhubungan dengan pemilihan pengobatan tradisional di wilayah kerja Puskesmas Muara Siberut Kecamatan Siberut Kabupaten Kepulauan Mentawai tahun 2012. Universitas Andalas.
- Rahayuwati, L., Ibrahim, K., & Komariah, M. (2017). Pilihan Pengobatan Pasien Kanker Payudara Masa Kemoterapi: Studi Kasus. *Jurnal Keperawatan Indonesia*, 20(2), 118–127. <https://doi.org/https://doi.org/10.7454/jki.v20i2.478>

- Shabrina, A., & Iskandarsyah, A. (2019). Pengambilan Keputusan mengenai Pengobatan pada Pasien Kanker Payudara yang Menjalani Pengobatan Tradisional. *Jurnal Psikologi*, 46(1). <https://doi.org/https://doi.org/10.22146/jpsi.31902>
- Subramanian, S., Gakunga, R., Jones, M., Kinyanjui, A., Ochieng, E., Gikaara, N., Maluni, Wata, D., Korir, A., & Ali, Z. (2019). Financial barriers related to breast cancer screening and treatment: A cross-sectional survey of women in Kenya. *Journal of Cancer Policy*, 22. <https://doi.org/https://doi.org/10.1016/j.jcpo.2019.100206>
- The Global Cancer Observatory. (2018). Breast Cancer. <http://gco.iarc.fr/today>
- Wang, K., Li, X., Zhou, C., Ren, Y., Wang, X.-B., & He, J.-J. (2013). Socio-economic Factors Influencing Tumor Presentation and Treatment Options in Chinese Breast Cancer Patients. *Asian Pacific Journal of Cancer Prevention*, 14(1), 267–274. <https://doi.org/http://dx.doi.org/10.7314/APJCP.2013.14.1.267>
- WHO. (2021). Breast cancer. <https://www.who.int/news-room/fact-sheets/detail/breast-cancer>