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Relationship between Lifestyle with Quality of Life in Breast Cancer Patients

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Abstract: *The high rate of increase in mortality due to breast cancer shows the need for lifestyle modifications to reduce the mortality rate due to breast cancer. an increase in pain which results in a decrease in quality of life so that it can reduce compliance with patient treatment which hurts prognosis and death due to cancer. So it is important to target quality of life in breast cancer patients. Something closely related to a better quality of life is lifestyle, lifestyle modifications need to be made to maintain the lives of breast cancer patients. This research uses quantitative methods using a correlational design with a cross-sectional approach to determine the relationship between lifestyle and quality of life in breast cancer patients. Researchers used the pearson correlation test if the data is normally distributed (>0.05) and use the spearman correlation test if the data is not normally distributed (<0.05), this test is used to see whether there is a relationship between lifestyle and the quality of life of breast cancer patients. The research was conducted at the RSUD Kota Bogor with the total 116 respondents by filling in the Lifestyle Questionnaire Related to Cancer and the EORTC QLQ-30 quality of life instrument for breast cancer patients and the results of the two were correlated with a p-value <0.001, r = 0.88. Analysis of the relationship carried out on 8 lifestyle factors with 3 quality of life scales, was found that 5 lifestyle factors were interconnected with the quality of life scale. Overall, quality of life influences the lifestyle of breast cancer patients in Bogor City Regional Hospital with a strong positive relationship. This research can help clinicians in the development and management of cancer to improve the quality of life of breast cancer patients.*

Keywords: *Lifestyle, Quality of life, Cancer, Breast Cancer*

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INTRODUCTION

Breast cancer or mammary carcinoma is a malignant tumor that originates from ductal or lobular epithelial tissue in the breast (Rizka et al., 2022). In 2020, WHO recorded 2.26 million cases of breast cancer worldwide, and GLOBOCAN reported that this cancer ranked fifth in cancer deaths with 2.3 million new cases (Stanisławek, 2021). Out of 396,914 new cases of cancer recorded in Indonesia, 68,858 new cases of breast cancer were reported (GLOBOCAN, 2020), with a total of more than 22 thousand deaths due to breast cancer. In Bogor City, there were 367 cases of breast cancer in 2021 with 39 deaths and in 2023 there were 300 cases of breast cancer in RSUD Kota Bogor.

The death rate caused by breast cancer is increasing in most countries, especially developing countries, due to low health knowledge and limited medical (Aoki et al., 2023) This high death rate shows the need for lifestyle modifications to reduce the death rate due to breast cancer (Orman et al., 2020). Lifestyle is a risk factor for breast cancer (Britt et al., 2020). Not only is it a risk factor, but lifestyle has a big role in the survival of cancer sufferers. Decreased physical function and increased pain are

often experienced by patients, resulting in a decrease in quality of life and compliance with treatment, thus hurting prognosis and mortality (Montagnese et al., 2021). A patient's good quality of life will have a positive impact on the patient's life, but if the quality of life is poor it will certainly have an impact on the survival of breast cancer patients.

According to Alam et al., (2020) Out of the 279 total respondents, 14 individuals (5.02%) reported having a good quality of life, 35 people (12.54%) an average quality of life, 150 people (53.76%) a low quality of life, and 80 people (28.67%) a very low quality of life respectively. For the nutrion status, the prevalence of poor nutrition was 12.5% and 43.7%, this demonstrates that poor nutrition significantly worsens patients quality of life (Alam et al., 2020). Accoarding to Kim & Jo, (2023) research, it was found that 22.6% of respondents had a low quality of life, where symptoms such as insomnia, fatigue (related to physical activity), anxiety, and depression over three years among breast cancer patients. These factors further contributed to a decline in the respondents quality of life, indicating that physical activity and poor mental health negatively impact the quality of life (Kim & Jo, 2023). A good quality of life has a positive effect on a patient's overall life, whereas a poor quality of life inevitably affects the survival of breast cancer patients.

Maintaining a healthy lifestyle is strongly associated with having a higher quality of life, including diet and physical activity (Montagnese et al., 2021). Lifestyle modifications, such as healthy nutrition, physical activity, weight loss, and reducing alcohol and tobacco consumption, need to be implemented to enhance the lives of those suffering from breast cancer (Orman et al., 2020). Physical exercise can reduce treatment side effects, improve quality of life, and decrease the risk of breast cancer recurrence (Montagnese et al., 2021). Rainey's research, however, indicates that while exercise can lower the incidence of breast cancer, it does not always directly affect quality of life (Rainey et al., 2020). Although it is known that a patient's lifestyle has an impact on their quality of life, the precise elements of lifestyle that have an impact on quality of life have not been thoroughly studied or examined (Papageorgiou et al., 2019).

Based on this preliminary study and in line with research conducted by Montagnese et al., (2021), To ascertain the mechanism and the link between lifestyle factors and HRQoL (quality of life) in patients with breast cancer, more study is required. In order to determine whether there is a relationship between lifestyle and quality of life in people with breast cancer, researchers are interested in looking at the relationship between lifestyle and quality of life in breast cancer patients at the RSUD Kota Bogor.

METHOD

Researchers use quantitative methods where the data obtained will be measured using mathematical or computational statistical techniques (Jahan et al., 2016). The research was conducted at the RSUD Kota Bogor with a total population was 166 people obtained from previous research by (Papageorgiou et al., 2019) in his research entitled *"Clinical assessment of quality of life in patients with breast cancer"* Based on this, the sample size in this study obtained from the results of Lemeshow calculations resulting in 116 respondents. The criteria for respondents were based on the research inclusion criteria: (1) Female, (2) patients diagnosed with breast cancer, (3) breast cancer patients at Bogor City Regional Hospital (both in the chemotherapy room and polyclinic), (4) patients who are willing to be respondents and research exclusion criteria: (1) Cancer patients other than breast cancer, (2) Patients who experience decreased awareness due to breast cancer treatment so they are not cooperative in filling out the questionnaire. Respondents who qualify for research requirements will be explained the research. If the respondent agrees to paarticipate in the research, the respondent will fill out an informed consent form.

This study uses a correlational design or analyzes two variablesspecifically, employing a cross-sectional method, the way of life and quality of life of breast cancer patients. Research using surveys, questionnaires, and interviews to determine the link between independent and dependent variables is known as a cross-sectional study (Donsu, 2017) Researchers used the pearson correlation test if the data is distributed normally (>0.05) and used the spearman correlation test if the data is distributed non-

normally (<0.05), this test is used to examine if there is a relationship between lifestyle with the quality of life of breast cancer patients.

The data collection for the research was conducted in May 2024. The research instrument is divided into 3 questionnaires, the first is a questionnaire containing the characteristics of the respondent including the respondent's name/initials, age, education level, income, marital status, and stage of breast cancer. Data on the type of treatment, cancer stage, and length of time suffering from cancer were obtained from the patient's medical records. The second questionnaire sheet is questionnaire sheet B which contains a cancer patient lifestyle questionnaire using the Lifestyle Questionnaire Associated to Cancer instrument which contains 60 questions with 8 categories: Physical health, physical activity, balanced food consumption, weight control, mental health, health reporting, drug and alcohol use, and tobacco use. Each question has a weighted point used (0 = never, 1 = sometimes, 2 = usually, and 3 = always). The higher score obtained by the respondent indicates a good lifestyle (Momayyezi et al., 2015). This instrument has been tested for validity and reliability by Momayyezi et al., (2015) with Cronbach's alpha coefficient results in α = 0.84, which shows that the questionnaire has been tested as valid. The reabillity result is 0.84–0.94, this shows that the reliability of the questionnaire is appropriate.

The last is C questionnaire, which measures the quality of life for cancer patients using the EORTC QLQ-*30 (European Organization for Research and Treatment of Cancer of Life Questionnaire-C30)* instrument. It consists of 30 questions designed to assess the quality of life for patients with breast cancer. The point weights used in this instrument are (1 = no, 2 = a little, 3 = often, and 4 = very often). Quality of life is assessed on a scale from 0 to 100 across five key functional areas (physical, role functioning, emotional well-being, cognitive function, and social functioning), as well as nine symptom domains (fatigue, pain, nausea and vomiting, shortness of breath, diarrhea, constipation, insomnia, appetite loss, and economic impact), and an overall perception of well-being (Shafaie et al., 2019). This instrument has been tested for validity and reliability by Noviyani et al., (2016) with the validity value determined based on the loading factor (λ) >0.70 which means the questionnaire has been tested as valid. The reliability results show a VE value = 0.90 (>0.50) which means all the question items in the questionnaire are reliable (Noviyani et al., 2016).

The research began after the researcher received a certificate of ethical suitability issued with number 013/KEP-RSUD/EC/IV/2024 by the Bogor City Regional Hospital Research Ethics Committee by complying with applicable ethical standards to ensure the confidentiality of patient data.

RESULTS

This research was carried out in the surgical oncology polyclinic, oncology polyclinic, and chemotherapy room at RSUD Kota Bogor in May 2024. The data collected included patient demographic characteristics (age, education level, occupation, marital status, type of treatment, stage, length of treatment). time suffering from cancer), Lifestyle and Quality of Life of breast cancer patients at RSUD Kota Bogor.

Table 1 shows that, of the total 116 respondents, the majority of respondents were adults (30-59 years) with 96 respondents. The majority of respondents' final education was high school or middle school with a total of 37 and 42 respondents. On average, respondents did not work with a total of 100 respondents. Almost all respondents were married with a total of 101 respondents, the type of treatment most frequently used by respondents was chemotherapy with 67 respondents. The stages suffered by respondents varied, but the most dominant were stages IIB and IIIA with a total of 35 and 30 respondents with the most common duration of cancer being < 2 years, with 78 respondents.

Table 1. Frequency Distribution of Respondent Characteristics

Characteristics	Frequency (n)	Percentage (%)
Age		
Young Adult	3	2.6
Adult	96	82.8
Elderly	17	14.7
Total	116	100
Educational Level		
Elementary School	20	17.2
Junior High School	37	31.9
Senior High School	42	36.2
Diploma/academic	17	14.7
Total	116	100
Occupation		
Housewives/Not Working	100	86.2
Retired	4	3.4
Employee	8	6.9
Government employee	4	3.4
Total	116	100
Marital Status		
Married	101	87.1
Single	2	1.7
Divorced	5	4.3
Widowed	8	6.9
Total	116	100
Treatment		
Chemotherapy	67	57,8
Surgery	26	22.4
Hormone Therapy	23	19.8
Total	116	100
Stage of Cancer		
IA	2	1.7
IB	9	7.8
IIA	13	11.2
IIB	35	30.2
IIIA	30	25.9
IIIB	12	10.3
IIIC	6	5.2
IV	9	7.8
Total	116	100
Long Suffering from Cancer		
< 2 Years	78	67.2
≥ 2 Years	38	32.8
Total	116	100

Table 2. Lifestyle Score of Breast Cancer Patients at RSUD Kota Bogor

Lifestyle	Frequency	Percentage
Less	18	15.5
Good	98	84.5
Total	**116**	**100**

Table 2 shows that from a total of 116 respondents, the majority of respondents had a high lifestyle score (good) with a total of 98 respondents and a less score with a total of 18 respondents.

Table 3. Quality of Life Score of Breast Cancer Patients at RSUD Kota Bogor

Quality of Life	Frequency	Percentage
Less	18	15.5
Good	98	84.5
Total	**116**	**100**

Table 3 shows that from a total of 116 respondents, the majority of respondents had a high quality of life score (good) with a total of 98 respondents and a less score with a total of 18 respondents.

Table 4. Normality Test Results for Independent and Dependent Variables

Variable	Skewness/Std. Error	Results	Description
Life Style	0.545/0.225	**2.422**	Data is abnormal distributed
Factor 1	-0.305/0.225	-1.355	Data is normally distributed
Factor 2	0.930/0.225	**4.133**	Data is abnormal distributed
Factor 3	-0.295/0.225	-1.311	Data is normally distributed
Factor 4	0.095/0.225	0.422	Data is normally distributed
Factor 5	-0.173/0.225	-0.768	Data is normally distributed
Factor 6	-0.158/0.225	-0.702	Data is normally distributed
Factor 7	-0.459/0.225	**-2.040**	Data is abnormal distributed
Factor 8	-3.161/0.225	**-14.04**	Data is abnormal distributed
Quality of Life	0.416/0.225	1.848	Data is normally distributed
Functional Scale	-0.688/0.225	**-3.057**	Data is abnormal distributed
Symtom scale	-0.176/0.225	-0.782	Data is normally distributed
Global health scale	-0.313/0.225	-1,391	Data is normally distributed

In this study, the normality test at table 4 uses the skewness value divided by Std Error, with the information that the data is normally distributed in the range (-2 to +2), so it can be concluded that in the lifestyle section and factors 1,3,4,5,6 Life pattern results show normal distribution values, while factors 2,7,8 have abnormal distribution. In the quality of life scale data that is not normal is only on the functional scale.

Table 5. Analysis of the Relationship between Lifestyle and Quality of Life in Breast Cancer Patients

Variable	Life Style		
Quality of Life	N	r	P value
	116	0.886*	<0.001*

***Spearman Test**

The spearman test was carried out in table 5, Lifestyle and Quality of Life variables to determine the relationship between the two. It can be concluded that lifestyle variables have a relationship with quality of life, as evidenced by the p-value <0.001 (<0.05). The value r = 0.886 in the results above shows a strong positive relationship, meaning that the higher the lifestyle score, the higher the lifestyle, and vice versa.

Based on table 6, eight lifestyle factors were associated with 3 quality of life scales including the functional scale, symptom scale, and global health scale using the spearman and pearson test. Analysis of the relationship carried out on 8 lifestyle factors with 3 quality of life scales, was found that 5 lifestyle factors were interconnected with the quality of life scale.

Factors 3, 4, 6 lifestyles are related to the functional and global health scale with a p-value, factor 3 (0.016, 0.041), factor 4 (0.025, 0.038), factor 6 (0.009, 0.005) with an r value that shows there is a

relationship between factors 3,4,6 with the functional and global health scale, the correlation value shows a weak value. Factor 5 lifestyle shows a relationship with the 3 quality of life scales, with a p-value of factor 5 (<0.001, 0.016, 0.002) with an r value showing there is a relationship between factor 5 with the functional scale, symptom scale, and global heath scale with the correlation value shows a weak value. The final factor that has a relationship with the quality of life scale is factor 8. The p-value between factor 8 lifestyle and the functional quality of life scale shows a p value of 0.020 (<0.05) with a value of r = 0.216 which shows a weak correlation.

Table 6. Analysis of the Relationship between Lifestyle and Quality of Life in Breast Cancer Patients (divided by factors)

Variable	N	Quality of Life					
		Functional Scale	Symptom scale	Global Health Scale	Functional Scale	Symptom scale	Global Health Scale
Life Style		r			P value		
Factor 1	116	0.127*	0.176**	0.135**	0.174*	0.058**	0.150**
Factor 2	116	0.124*	0.156*	0.159*	0.184*	0.094*	0.089*
Factor 3	116	0.223*	0.155**	0.190**	**0.016***	0.096**	**0.041****
Factor 4	116	0.207*	0.152**	0.193**	**0.025***	0.104**	**0.038****
Factor 5	116	0.318*	0.224**	0.290**	**<0.001***	**0.016****	**0.002****
Factor 6	116	0.240*	0.169**	0,257**	**0.009***	0.070**	**0.005****
Factor 7	116	0.091*	0.174*	0.149*	0.330*	0.062*	0.110*
Factor 8	116	0.216*	0.082*	0.177*	**0.020***	0.380*	0.057*

***Spearman Test, **Pearson Test**

DISCUSSION

A person's assessment of his or her life's values, which are based on how their life aligns with their aspirations, expectations, and concerns, is known as their quality of life. A person's quality of life is influenced by a variety of factors, including their emotional, physical, sexual, and social function. It holds significant importance for individuals with breast cancer as it influences disease prognosis and guides patient management, medical decision-making, symptom management, and healthcare service planning (Shafaie et al., 2019). A high quality of life will positively affect the patient's life, but a low quality of life will undoubtedly affect the survival rate of patients with breast cancer. An improved quality of life is strongly associated with a healthy lifestyle that includes exercise and a balanced diet (Montagnese et al., 2021).

Lifestyle can be defined as an individual's lifestyle that pays attention to certain factors that influence their daily life. Lifestyle is one of the factors causing breast cancer with accompanying factors such as smoking habits, consumption of alcoholic drinks, and obesity. Unhealthy lifestyles are the cause of breast cancer cases continuing to increase every year (ITS, 2021).

This data was obtained from research involving 128 respondents covering various lifestyle patterns and quality of life, with high, and medium scores. This is in line with research conducted by Wulandari (2019) at Sanglah Hospital Denpasar showing that the respondents' quality of life was in the fair to good range (9-16) from the 0-16 range.

Overall, the study's findings show a strong positive relationship between breast cancer patients' lifestyle choices and their level of happiness. More specifically, better lifestyle scores are correlated with better lives, and worse lifestyle scores are correlated with worse lives. This is supported by the results of research (Montagnese et al., 2021) where the following 12 months of lifestyle modifications, patients experienced notable reductions in scores related to side effects from systemic therapy (P<0.001) and

symptoms associated with breast health (P=0.004), Lifestyle modifications, both in terms of diet and physical activity, have a positive impact on the quality of life of breast cancer patients.

In this study Seib et al., (2022) the results of a total of 351 respondents who carried out a lifestyle change intervention program were also explained. The outcomes demonstrated statistically significant gains in overall health, body pain, vitality, and global physical and mental health scores, suggesting that lifestyle modifications can enhance the prognosis of patients with gynecological, breast, and blood cancers.

Research by Zheng et al., (2021) also shows that lifestyle patterns and quality of life are interconnected, However, there are differences in the relationship between nine lifestyle factors and health-related quality of life (HRQoL) between younger and older women. The total FACT-B score (p = 0.028), the breast cancer subscale (p = 0.038), functional well-being (p = 0.006), and emotional well-being (p = 0.003) all show statistically significant differences. Research results by Papageorgiou et al., (2019) assert that lifestyle is one of the elements that affects quality of life. However, this is not in line with the research by Rainey et al., (2020), while physical activity was able to lower the risk of breast cancer with risk reductions ranging from 20% to 80%, this study did not discover any advantages for individuals with breast cancer.

For each lifestyle factor and the quality of life scale, almost all of the data states that there is a relationship, with correlation values showing weak values. There were no correlation found between component 1 lifestyle and the three quality of life scales in factor 1, which addresses physical health in connection to the functional, symptom, and global health scales. This contradicts study by Cheng et al., (2016), which shows that psychological issues following cancer treatment, such as exhaustion and heightened anxiety, have an impact on cancer patients' physical well-being. Factor 2 which discusses physical activity and exercise with 3 quality of life scales shows an influence on the functional scale and global health scale. This contradicts studies by Cheng et al., (2016) It found that exercise and physical activity play a significant role in their quality of life in terms of both psychological and physical health (p= <0.001).

Factor 3 which discusses mental health with 3 quality of life scales shows an influence on the functional scale and also the global health scale. This aligns with studies conducted by Marlin et al., (2022) where the outcomes showed a significant correlation (p=0.000), indicating that emotional intelligence—a component of mental health—and quality are related. the lives of advanced cancer patients in the unit. oncology and chemotherapy services at RSUD Prof. DR. W.Z. Johannes Kupang.

Factor 4 which discusses avoiding smoking and alcohol with 3 quality of life scales shows an influence on the functional scale and also the global health scale. The part about avoiding smoking is not in line with research by Weiland et al., (2014) which states that there is no relationship between smoking and quality of life, but smokers have a much lower quality of life compared to non-smokers. -smokers and ex-smokers, while in research by Chinty et al., (2018) there was a relationship between people who consumed alcohol and quality of life where respondents who consumed alcohol had a poor quality of life with a *p-value = 0.037.*

Factor 5 which discusses a balanced diet with 3 quality of life scales shows an influence on the functional scale and also the global health scale. This is in line with research by Vajdi & Farhangi (2020) which was obtained from 13 studies with a total of 43,445 subjects. It was concluded that healthy eating patterns were associated with better quality of life dimension scores, while unhealthy eating patterns were associated with lower quality of life dimension scores.

Factor 6 which discusses environmental pollutants and dangerous compounds with 3 quality of life scales shows an influence on the functional scale and global health scale. No research that explains the relationship between environmental pollution and dangerous compounds on quality of life, but research by Permatahati & Yanti (2021) states that there are several dangerous compounds commonly used in cosmetic and food products that have an impact on health. The human body, one of which is Rhodamine. B, which if exposed for a long period will cause liver function disorders.

Factor 7 which discusses weight control and nutrition with 3 quality of life scales shows an influence on the symptom scale, This contradicts a study by Susetyowati et al., (2018) that found a relationship

between food intake and cancer patients' quality of life. breast (p = 0.002). Factor 8 which discusses reproductive health with 3 quality of life scales shows an influence on the functional scale. In previous research, no details were found on the connection between reproductive health and life satisfaction, however in studies conducted by Palomba et al., (2018) it was stated that the relationship between reproductive health and quality of life was greater in infertile women than in fertile women.

CONCLUSION

The discussion above leads to the conclusion that there is a strong beneficial association between the lifestyle of breast cancer patients at Bogor City Hospital and their overall quality of life. Following their categorization into several factors and scales based on prior research, factor 1, 2, and 7 show no correlation with any of the three quality of life scales out of a total of eight lifestyle factors and three quality of life scales. Weak association values exist between factors 3, 4, and 6 and the functional and global health scales. Three scales—the global health scale, the symptom scale, and the functional scale—have relationships with factor 5. One scale—the symptom and functional scales—has a link with factor 8. According to earlier research, this study has identified the lifestyle factors that affect quality of life; however, because of the small number of references, additional research is still required to determine the specific ways in which each lifestyle component affects the three quality of life scales in patients with breast cancer.

REFERENCE

Alam, M. M., Rahman, T., Afroz, Z., Chakraborty, P. A., Wahab, A., Zaman, S., & Hawlader, M. D. H. (2020). Quality of Life (QoL) of cancer patients and its association with nutritional and performance status: A pilot study. *Heliyon*, *6*(10), e05250. https://doi.org/10.1016/j.heliyon.2020.e05250

Aoki, Y., Niitsu, A., Baba, H., & Nishizawa, Y. (2023). Associations of increasing breast cancer incidence with the current drinking habits and the past smoking habits among Japanese women. *Proceedings of Singapore Healthcare*, *32*, 201010582311783. https://doi.org/10.1177/20101058231178397

Britt, K. L., Cuzick, J., & Phillips, K. A. (2020). Key steps for effective breast cancer prevention. *Nature Reviews Cancer*, *20*(8), 417–436. https://doi.org/10.1038/s41568-020-0266-x

Cheng, Y.-L., Lee, C.-Y., Huang, Y.-L., Buckner, C. A., Lafrenie, R. M., Dénommée, J. A., Caswell, J. M., Want, D. A., Gan, G. G., Leong, Y. C., Bee, P. C., Chin, E., Teh, A. K. H., Picco, S., Villegas, L., Tonelli, F., Merlo, M., Rigau, J., Diaz, D., … Mathijssen, R. H. J. (2016). Quality of Life and Physical Activity: Their Relationship with Physical and Psychological Well-Being. https://www.intechopen.com/books/advanced-biometric-technologies/liveness-detection-in-biometrics.http://dx.doi.org/10.5772/intechopen.69151

Chinty, P., Sekeon, S. A. S., & Kalesaran, A. F. C. (2018). Hubungan Status Merokok Dan Konsumsi Alkohol Dengan Kualitas Hidup Penduduk Di Desa Tambun Kepulauan Talise Kecamatan Likupang Barat Kabupaten Minahasa Utara. *Jurnal KESMAS*, *7*(5), 8. https://ejournal.unsrat.ac.id/index.php/kesmas/article/view/22141/21842.

Donsu D. T , (2017). *Metodologi Penelitian Keperawatan*. Pustakabarupress. https://opac.perpusnas.go.id/DetailOpac.aspx?id=1073862

ITS. (2021). *Kanker dan Pola Hidup Masa Kini.* https://www.its.ac.id/news/2021/02/04/kanker-dan-pola-hidup-masa-kini/

Jahan, S., Al-saigul, A. M., & Abdelgadir, M. H. (2016). Effect of the Lifestyle, Exercise, and Nutrition (LEAN) Study on Long-Term Weight Loss Maintenance in Women with Breast Cancer. *Journal of the Royal Society of Medicine*, *70*(8), 515–517. https:// doi.org/10.3390/nu13093265

Kim, S. H., & Jo, H. Y. (2023). Factors Associated with Poor Quality of Life in Breast Cancer Survivors: A 3-Year Follow-Up Study. *Cancers*, *15*(24). https://doi.org/10.3390/cancers15245809

Marlin Nau, Akto Yudowaluyo, M. A. B. (2022). Hubungan Kecerdasan Emosional Dan Spiritual Dengan Kualitas Hidup Pasien Kanker Stadium Lanjut Di Unit Pelayanan Onkologi Dan Kemoterapi Rsud Prof. Dr. W.Z. Johanes Kupang. *Chmk Nursing Scientific Journal*, *5*(1), 18–33.

https://cyber-chmk.net/ojs/index.php/ners/article/view/942

Momayyezi, M., Fallahzadeh, H., & Momayyezi, M. (2015). *Construction and Validation the Lifestyle Questionnaire Related to Cancer*. *8*(5). https://doi.org/10.17795/ijcp-3965

Montagnese, C., Porciello, G., Vitale, S., Palumbo, E., Crispo, A., Grimaldi, M., Calabrese, I., Pica, R., Prete, M., Falzone, L., Libra, M., Cubisino, S., Poletto, L., Martinuzzo, V., Coluccia, S., Esindi, N., Nocerino, F., Minopoli, A., Grilli, B., … Augustin, L. S. A. (2021). Quality of life in women diagnosed with breast cancer after a 12-month treatment of lifestyle modifications. *Nutrients*, *13*(1), 1–15. https://doi.org/10.3390/nu13010136

Noviyani, R., Tunas, K., Indrayathi, A., & Budiana, N. G. (2016). Validity and Reliability of EORTC QLQ C-30 Questionnaire in Assessing Quality of Life of Gynecological Cancer Patients in Sanglah Hospital Denpasar. *Indonesian Journal of Clinical Pharmacy*, *5*(2), 106–114. https://doi.org/10.15416/ijcp.2016.5.2.106

Orman, A., Johnson, D. L., Comander, A., & Brockton, N. (2020). Breast Cancer: A Lifestyle Medicine Approach. *American Journal of Lifestyle Medicine*, *14*(5), 483–494. https://doi.org/10.1177/1559827620913263

Palomba, S., Daolio, J., Romeo, S., Battaglia, F. A., Marci, R., & La Sala, G. B. (2018). Lifestyle and fertility: The influence of stress and quality of life on female fertility Rosario Pivonello. *Reproductive Biology and Endocrinology*, *16*(1), 1–11. https://doi.org/10.1186/s12958-018-0434-y

Papageorgiou, D., Konstantinidis, T., & Govina, O. (2019). Clinical Assessment of quality of life in patients with breast cancer. *Hellenic Journal of Nursing*, *58*(2), 120–125. https://doi.org/10.4103/IJPC.IJPC

Permatahati, D. M., & Yanti, L. P. D. (2021). Metode Identifikasi Rhodamine B pada Makanan dan Kosmetik. *Bima Nursing Journal*, *2*(1), 62. https://doi.org/10.32807/bnj.v2i1.712

Rainey, L., Eriksson, M., Trinh, T., Czene, K., Broeders, M. J. M., van der Waal, D., & Hall, P. (2020). The impact of alcohol consumption and physical activity on breast cancer: The role of breast cancer risk. *International Journal of Cancer*, *147*(4), 931–939. https://doi.org/10.1002/ijc.32846

Rizka, A., Akbar, M. K., & Putri, N. A. (2022). Carcinoma Mammae Sinistra T4bN2M1 Metastasis Pleura *Averrous: Jurnal Kedokteran Dan Kesehatan Malikussaleh*, *8*(1), 23. https://doi.org/10.29103/averrous.v8i1.7006

Seib, C., Anderson, D., McGuire, A., Porter-Steele, J., McDonald, N., Balaam, S., Sapkota, D., & McCarthy, A. L. (2022). Improving health-related quality of life in women with breast, blood, and gynaecological Cancer with an eHealth-enabled 12-week lifestyle intervention: the women's wellness after Cancer program randomised controlled trial. *BMC Cancer*, *22*(1), 1–12. https://doi.org/10.1186/s12885-022-09797-6

Shafaie, F. S., Mirghafourvand, M., & Amirzehni, J. (2019). *Prediktor Kualitas Hidup Penderita Kanker Payudara*. 73–78. https://doi.org/10.4103/IJPC.IJPC

Stanisławek, A. (2021). *Breast Cancer—Epidemiology, Risk Factors, Classification, Prognostic Markers, and Current Treatment Strategies— An Updated Review*. 1–30. https:// doi.org/10.3390/cancers13174287

Susetyowati, S., Pangastuti, R., Dwidanarti, S. R., & Wulandari, H. (2018). Asupan makan, status gizi, dan kualitas hidup pasien kanker payudara di RSUP DR Sardjito Yogyakarta. *Jurnal Gizi Klinik Indonesia*, *14*(4), 146. https://doi.org/10.22146/ijcn.18392

Vajdi, M., & Farhangi, M. A. (2020). A systematic review of the association between dietary patterns and health-related quality of life. *Health and Quality of Life Outcomes*, *18*(1), 1–15. https://doi.org/10.1186/s12955-020-01581-z

Weiland, T. J., Hadgkiss, E. J., Jelinek, G. A., Pereira, N. G., Marck, C. H., & Van Der Meer, D. M. (2014). The association of alcohol consumption and smoking with quality of life, disability and disease activity in an international sample of people with multiple sclerosis. *Journal of the Neurological Sciences*, *336*(1–2), 211–219. https://doi.org/10.1016/j.jns.2013.10.046

Wulandari, S. (2019). Kualitas Hidup Pasien Kanker Payudara: Setting Rawat Jalan. *Jurnal Riset Kesehatan Nasional*, *3*(2), 78–81. https://doi.org/10.37294/jrkn.v3i2.179

Zheng, C., Yu, L. X., Jia, H. Y., Cui, S. De, Tian, F. G., Fan, Z. M., Geng, C. Z., Cao, X. C., Yang, Z. L.,

Wang, X., Liang, H., Wang, S., Jiang, H. C., Duan, X. N., Wang, H. B., Li, G. Lou, Wang, Q. T., Zhang, J. G., Jin, F., … Yu, Z. G. (2021). Relationship Between Lifestyle Habits and Health-Related Quality of Life of Recently Diagnosed Breast Cancer Patients: A Comparison Between Younger and Older Women in China. *Frontiers in Public Health*, *9*(December), 1–11. https://doi.org/10.3389/fpubh.2021.767151