ISSN 1978-6743
E-ISSN 2477-3948
Jurnal Ilmiah Kesehatan
(Journal of Health Science)
Fakultas Keperawatan dan Kebidanan | Universitas Nahdlatul Ulama Surabaya

Relationship between Stress Levels and Sleep Quality of Breast Cancer Patients Undergoing Chemotherapy at Dharmais Cancer Hospital, DKI Jakarta Province in 2022

Umi Salamah[1], Yuni Susilowati[2], Ayu Pratiwi[3], Bernardo Oliber A. Arde[4]

[1,2,3] *Nursing Study Program, Yatsi Madani University, Tangerang, Indonesia*
[4] *Master of Arts in Nursing Philippines University of Northern Philippines*

ARTICLE INFORMATION

Received: March 8, 2023
Revised: July 10, 2023
Available online: August 2023

KEYWORDS

Cancer, Chemotherapy, Stress Level, Sleep Quality

CORRESPONDENCE

E-mail: umisalamah040905@gmail.com

A B S T R A C T

Breast cancer ranks first for women worldwide, with an incidence rate of 40 per 100,000 women with a death rate of 21.5% per year. It is estimated that around 15% of all female deaths worldwide are caused by breast cancer. Breast cancer causes physical and psychological problems simultaneously related to the disease or its treatment. One of the most common disturbances in breast cancer patients is stress. Stressors that breast cancer patients constantly face can impact the disruption of the hormone melatonin and increase adrenaline and cortisol hormones, resulting in disturbed sleep quality of cancer patients. Research objective: To determine the relationship between stress levels and sleep quality in breast cancer patients undergoing chemotherapy. Research method: Correlational quantitative research with a cross-sectional approach. The total sample is 156 breast cancer patients taken by purposive sampling technique. Results: The results of the univariate analysis showed that most breast cancer patients undergoing chemotherapy at Dharmais Cancer Hospital experienced severe stress (51.9%), and most had poor sleep quality (60.9%). The results of the bivariate analysis showed that there was a significant relationship between stress levels and sleep quality in breast cancer patients undergoing chemotherapy at the Dharmais Cancer Hospital in 2022 (p-value: 0.000). Conclusions and Suggestions: It is hoped that the hospital will carry out stress management in cancer patients by providing health education or with relaxation techniques. So, it is hoped that this can improve the sleep quality of cancer patients

INTRODUCTION

Breast cancer incidence ranks as the number one cancer in women globally, with an incidence rate of 40 per 100,000 women and 30.5% new cases found, with 21.5% deaths per year (Smith *et al.*, 2018). According to Isfahani, Hossieni Zare and Shamsaii (2020), breast cancer affects 2.1 million women annually and is the leading cause of cancer death in women. In 2018, it was estimated that about 15% of all female deaths worldwide were caused by breast cancer. Based on GLOBOCAN (Global Burden Cancer) data in 2018, the incidence of breast cancer in the world is around 12.7 million cases, with a death rate of 7.6 million, of which 56% of cases and 64% of deaths occur in developing countries. As many as 24% of all breast cancers are diagnosed in the Asia-Pacific region, with enormous numbers in China (46%), Japan (14%), and Indonesia (12%). Southeast Asia ranked fourth in these cases. Indonesia ranks third in Southeast Asia with 19,750 breast cancer cases (Kocarnik *et al.*, 2022). The Indonesian Ministry of Health in 2020 revealed that every year there is an increase in breast cancer cases in Indonesia. In 2018 the RISKESDAS results recorded that the incidence of breast cancer was 42.1 per 100,000 population (Narartа, Juliantara and Amelia, 2022). Data from the Hospital Information System

https://doi.org/10.33086/jhs.v16.i03.3992

(SIRS) noted that breast cancer ranks first among diseases that cause inpatient and outpatient care in all hospitals in Indonesia, which is 28.7% (Dimyati and Haryatmi, 2014).

According to data from Dharmais Cancer Hospital, the top number of new cases is breast cancer patients; in 2019, there were 1,065 patients, in 2020 it increased to 1,116 patients; in 2021, it increased to 1,146 patients and in 2022, it increased to 1,152 patients, with the most types of cancer being Ca Mamae (Breast Cancer), Ca Cervix (Uterine neck Cancer), Ca Paru (Lung Cancer), Ca Thyroid (Thyroid Cancer) and the least amount is Central Nervous System Cancer.

The main cancer treatments include surgery, chemotherapy, radiation, and hormone therapy. All these treatments have side effects for cancer patients. Chemotherapy is one of the primary therapies in cancer patients given to patients with systemic cancer (Leukemia, myeloma, lymphoma) and cancer with clinical or subclinical metastases. According to the Indonesian Association of Oncology Surgeons (PABOI), chemotherapy is cancer management by administering anti-cancer drugs (cytostatic) to kill cancer cells. Chemotherapy therapy can cause side effects that can be detrimental to several physiological functions of the patient. Some side effects of chemotherapy therapy include bone marrow suppression, gastrointestinal symptoms such as nausea, vomiting, weight loss, changes in taste, constipation, diarrhea, and other symptoms (Gautama, 2022).

Lestari, Budiyarti and Ilmi, (2020) in her journal states that cancer can cause physical and psychological problems simultaneously related to the disease or its treatment. One of the most common disorders in cancer patients is stress. Stuart (2021) explains that stress is a worry or anxiety that is unclear and uncertain about an object, to which everyone will respond with different reactions to the same stressor.

Disease conditions, fatigue or the result of ongoing treatment can cause stressors in cancer patients. Septilia (2018) mentioned that chemotherapy is one of the treatments that can trigger stress in cancer patients. Some factors that cause it are the length of time or the treatment process, the effects of chemotherapy, and the patient's environment. In their journal, Septilia found that the stress level in breast cancer patients varies. His research found that 23.3% of cancer patients experienced moderate stress, 50% experienced severe stress, and 23.3% experienced very severe stress.

Stressors that cancer patients constantly face can have an impact on hormonal melatonin chaos and increased adrenaline and cortisol hormones and can result in disturbed sleep quality for cancer patients. If stress is unable to be controlled and overcome, it will have a negative impact; in cancer patients, the negative impact of stress cognitively includes difficulty concentrating; emotional impacts include difficulty motivating oneself, feelings of anxiety, sadness, and frustration and physiological impacts include decreased endurance and disturbed sleep patterns (Amelia *et al.*, 2023).

https://doi.org/10.33086/jhs.v16.i03.3992

Preliminary studies conducted at Dharmais Cancer Hospital by researchers on 10 breast cancer patients undergoing chemotherapy obtained data that all of them (100%) claimed to be anxious and stressed with the conditions they are currently facing, then as many as 9 patients (90%) claimed to have difficulty sleeping due to thinking about the condition of the disease and the chemotherapy they had to undergo.

Khairani, Keban and Afrianty (2019) in his journal found that all patients undergoing chemotherapy all experienced fatigue, one of which was caused by sleep disorders. This results in a decrease in the quality of life of cancer patients. Alifiyanti, Hermayanti and Setyorini, (2017) in his journal stated that of 83 cancer patients undergoing chemotherapy, 69 people (83.1%) had poor sleep quality.

From the background description and several studies on stress and sleep quality in cancer patients, researchers are interested in researching "The relationship between stress levels and sleep quality of breast cancer patients undergoing chemotherapy at Dharmais Cancer Hospital in 2022".

METHOD

This research design is a correlational quantitative study with a cross-sectional approach. The study population was all breast cancer patients undergoing chemotherapy at Dharmais Cancer Hospital Jakarta, averaging 220 patients per month. Based on the calculation of the Slovin formula with an error degree of 5%, a sample size of 156 respondents was obtained. The sampling technique uses purposive sampling, which is done with specific considerations. Alternatively, based on certain criteria that follow the research topic (Notoatmodjo, 2010b).

The instruments in this study were the DASS 21 stress level questionnaire used to identify the stress level of breast cancer patients and the Pittsburgh Sleep Quality Index (PSQI) sleep quality questionnaire. Data analysis conducted in this study was univariate analysis and bivariate analysis.

RESULT

Univariate Analysis Results

Table 1. Frequency Distribution of Characteristics (Age and Education) in Breast Cancer Patients Undergoing Chemotherapy

Age	frequency (n)	Percentage (%)
≥ 45 year	102	65,4
< 45 year	54	34,6
Education level		
Low	96	61,5
High	60	38,5
Total	156	100

https://doi.org/10.33086/jhs.v16.i03.3992

Based on Table 1, it can be seen that out of 156 breast cancer patients undergoing chemotherapy at Dharmais Cancer Hospital, the majority of 102 patients were aged ≥ 45 years (65.4%), and the majority or 96 patients had low education (61.5%).

Table 2 Frequency Distribution of Stress Levels of Breast Cancer Patients Undergoing Chemotherapy

Stress Level	Number (n)	Percentage (%)
Severe	81	51,9
Moderate	58	37,2
Mild	17	10,9
Total	156	100

Based on Table 2, it can be seen that out of 156 breast cancer patients undergoing chemotherapy at Dharmais Cancer Hospital, the majority, or 81 patients experienced severe stress (51.9%).

Table 3 Frequency Distribution of Sleep Quality of Breast Cancer Patients Who Underwent Chemotherapy

Sleep Quality	Number (n)	Percentage (%)
Bad	95	60,9
Good	61	39,1
Total	156	100

Based on Table 3, it can be seen that out of 156 breast cancer patients undergoing chemotherapy at Dharmais Cancer Hospital, most or as many as 95 patients have poor sleep quality (60.9%).

Bivariate Analysis Results

Table 4 Relationship between Stress Level and Sleep Quality in Breast Cancer Patients Who Underwent Chemotherapy

Stress Level	Sleep Quality				P Value
	Bad		Good		
	n	%	n	%	
Severe	61	75,3	20	24,7	
Moderate	34	58,6	24	41,4	0,000
Mild	0	0,0	17	100,0	
Total	95	60,9	61	39,1	

Table 4 shows that out of 81 cancer patients with severe stress, 61 patients have poor sleep quality (75.3%). Of the 58 breast cancer patients with moderate stress, 34 had poor sleep quality. While of the 17 breast cancer patients with mild stress, there were no patients with poor sleep quality (0.0%).

The statistical test results obtained p value = 0.000, at $\alpha = 0.05$ ($p < \alpha$). It can be concluded that there is a significant relationship between stress levels and sleep quality in breast cancer patients undergoing chemotherapy at Dharmais Cancer Hospital in 2022.

https://doi.org/10.33086/jhs.v16.i03.3992

DISCUSSION

Univariate Analysis Results

A. Overview of Characteristics (Age and Education) in Breast Cancer Patients Undergoing ChemotherapyThe results showed that breast cancer patients undergoing hormonal therapy at Dharmais Cancer Hospital were mostly aged ≥ 45 years (65.4%). The results of this study follow the theory of Washbrook (2006), which states that age is one of the risk factors associated with the incidence of breast cancer. Breast cancer is relatively rare in women under the age of 40 but increases significantly at the age of over 40 years.

   The risk of breast cancer increases as age affects the body's metabolism and the process of cell formation. The body's ability to control and repair gene damage decreases as we age. In addition, the age of 40 years and above is the premenopausal period. The hormone progesterone cannot be produced sufficiently, so the estrogen hormone becomes excess, which will trigger cancer (Trabert *et al.*, 2020).

   Critchley *et al.*, (2020) also explained that women over the age of 40, especially those who are still experiencing the reproductive period, every month will experience menstruation, but not ovulation, so the progesterone hormone produced is not enough to counteract the estrogen hormone, which is a trigger for breast cancer.

   The results showed that breast cancer patients undergoing chemotherapy at Dharmais Cancer Hospital had a majority of low education, as much as 61.5%. Notoatmodjo (2010a) states that lifestyle can be influenced by the level of education, which is indirectly related to motivation and attitudes toward maintaining health. Higher education makes it easier for someone to receive information and understand a concept to make the proper analysis that will positively impact health perceptions and behavior.

   Shahin, Kennedy and Stupans, (2019) also states that education level is related to therapy compliance. This result happened because the education level directly affects knowledge and creates good compliance behavior. A person with higher education better understands the information provided and responds to that information.

   The results of this study are more or less the same as those of Bidari and Virawati, (2023), which found that most breast cancer patients studied had a high education of 47.8%, then those with high school education were 44.8%. Those with low education were 7.4%. Heena *et al.*, (2019), in her journal, stated that the higher the education, the more awareness of the importance of screening in breast cancer patients. This result shows that the level of education greatly influences a person's awareness of their disease.

https://doi.org/10.33086/jhs.v16.i03.3992

Heena *et al.*, (2019) states that education shows the level of intelligence associated with a person's thinking power. Education is a determining factor in gaining knowledge. Education is a process of self-development of one's personality that is carried out consciously and responsibly to improve knowledge, skills and attitudes, and values to adapt to their environment.

B. Overview of Stress Levels in Breast Cancer Patients Undergoing Chemotherapy Stress levels in this study affect breast cancer patients' emotions, thought processes, and physical conditions related to breast cancer disease and chemotherapy treatment (Kozier *et al.*, 2015). The results showed that 51.9% of patients experienced severe stress, 37.2% experienced moderate stress, and 10.9% experienced mild stress. The results illustrate that the stress level in breast cancer patients undergoing chemotherapy varies, but the majority experience severe and moderate stress.

The results of this study are bythe theory of Hafsah (2022), which states that chemotherapy often causes psychological disorders for patients who undergo it, such as anxiety, depression and stress. Side effects from chemotherapy treatments, such as hair loss, uncomplicated infection, dry and itchy skin, nausea, abdominal pain, decreased fertility and sexual appetite, often trigger this psychological disorder. According to the Indonesian Association of Oncology Surgeons (PABOI), chemotherapy is cancer management by administering anti-cancer drugs (cytostatics) to kill cancer cells. Chemotherapy therapy can cause side effects that can be detrimental to several physiological functions of the patient. Some side effects of chemotherapy therapy include bone marrow suppression, gastrointestinal symptoms such as nausea, vomiting, weight loss, changes in taste, constipation, diarrhea, and other symptoms (Gautama, 2022).

Lestari, *et al.*, (2020) in her journal states that cancer can cause physical and psychological problems simultaneously related to the disease or its treatment. One of the most common disorders in cancer patients is stress. Miaskowski *et al.*, (2020) states that disease conditions, fatigue or the result of ongoing treatment can cause stressors in cancer patients. Cancer patients with chronic diseases such as cancer face a slight chance of life and prolonged physical and psychological suffering, so rejection, anxiety, stress and depression often occur.

Septilia (2018) mentioned that chemotherapy is one of the treatments that can trigger stress in cancer patients. Some factors causing it are the length of time or the treatment process, the effects of chemotherapy, and the patient's environment. Stress levels vary for breast cancer patients. His research found that 23.3% of cancer patients experienced moderate stress, 50% experienced severe stress, and 23.3% experienced severe stress.

Amelia *et al.*, (2023) states that if stress cannot be controlled and overcome, it will have a negative impact. In cancer patients, the negative impact of stress cognitively includes difficulty concentrating;

https://doi.org/10.33086/jhs.v16.i03.3992

emotional impacts include difficulty motivating oneself, the emergence of feelings of anxiety, sadness, and frustration and physiological impacts include decreased endurance and disturbed sleep patterns. Excessive stress in chemotherapy patients can also affect patient motivation in carrying out chemotherapy.

Stress in cancer patients undergoing chemotherapy needs attention and nursing intervention because this situation can impact therapy compliance and the quality of life of cancer patients. According to the researcher, mental or psychological preparation is essential when cancer patients undergo chemotherapy because mentally unprepared or unstable patients can trigger stress. One of the things that can be done to reduce stress levels in cancer patients undergoing chemotherapy is to provide health education about the benefits of chemotherapy measures. If cancer patients know that the benefits are more significant than the impact, it can reduce the stress levels of cancer patients who will undergo chemotherapy.

C. Overview of Sleep Quality of Breast Cancer Patients Undergoing ChemotherapySleep quality is a subjective description that states the ability to maintain sleep and the absence of disturbances during sleep objectively (Alifiyanti *et al.,* 2017). The results showed that most breast cancer patients undergoing chemotherapy had poor sleep quality (60.9%).

This study's results align with Alifiyanti *et al.,* (2017), who found that almost all breast cancer patients undergoing chemotherapy had poor sleep quality (83.1%). Mystakidou *et al.,* (2015) stated that sleep disturbance is a complication often found in more than 70% of patients with advanced cancer, either due to medical disorders or drugs used in treatment. Sleep problems in cancer patients are associated with mood changes, decreased tolerance to pain and decreased quality of life. Sleep is a critical need that must be fulfilled sufficiently, namely, 7-9 hours per day. If cancer patients have sleep disorders, it will affect their cancer cure.

Potter and Perry (2015) state that in ordinary people, prolonged sleep disturbances will result in changes in the biological sleep cycle, decreased endurance and work performance, irritability, depression, lack of concentration, and fatigue, and can affect the safety of oneself or others. Khairani *et al.,* 2019) in his journal stated that patients undergoing chemotherapy all experience fatigue, one of which is caused by sleep disorders. This results in a decrease in the quality of life of cancer patients.

Sun *et al.,* (2021) explains that sleep disorders can be present independently or medical or psychiatric disorders, such as chronic pain and depression. Insomnia is the most common sleep disorder and can be a persistent problem for patients with severe or life-threatening illnesses such as cancer. Chronic sleep disorders are heavy for patients, and the impact can affect physical, psychological, occupational, and economic well-being.

https://doi.org/10.33086/jhs.v16.i03.3992

Potter and Perry (2015) said that physiological functions will also be disturbed when there is sleep disturbance, such as decreased appetite, weight loss, irritability and difficulty in making decisions. Insufficient sleep quantity causes changes in natural and cellular immune function. Kwekkeboom *et al.*, (2018) also stated that sleep deprivation occurs due to difficulty initiating sleep or being unable to maintain sleep can interfere with the body's normal functions, which, if not treated immediately, can cause a decrease in neurological abilities, thus affecting the patient's quality of life, immune system, cognitive abilities, and ability to perform daily activities.

Bivariate Analysis Results

A. Relationship between Stress Level and Sleep Quality in Breast Cancer Patients Undergoing Chemotherapy

The results of the analysis of the relationship between stress levels and sleep quality in breast cancer patients showed that the percentage of poor sleep quality at the stress level, namely, in severe stress by 75.3%, in moderate stress by 58.6%, and in mild stress there were no patients with poor sleep quality. These results show that the higher the stress level, the greater the percentage of poor sleep quality. In other words, the higher the stress level of breast cancer patients, the worse their sleep quality. The statistical test results obtained p value = 0.000, so statistically, it can be concluded that there is a significant relationship between stress levels and sleep quality in breast cancer patients undergoing chemotherapy at Dharmais Cancer Hospital in 2022.

This study's results follow the theory of Potter and Perry (2015), which states that stress can cause sleep disturbances. Stressors that cancer patients constantly face can have an impact on hormonal melatonin chaos and increased adrenaline and cortisol hormones and can result in disturbed sleep quality in cancer patients. Suppose the stress in cancer patients cannot be controlled and overcome. In that case, it will have a negative impact, one of which is a physiological impact, namely decreased endurance and disturbed sleep patterns in cancer patients.

According to researchers, the side effects of chemotherapy for breast cancer patients cause their stress. Most breast cancer patients are women who consider their appearance and body image very important so when undergoing chemotherapy and experiencing side effects that damage their body image it can cause depression. Therefore, adaptation to side effects needs to be considered for breast cancer patients undergoing chemotherapy, and patients must have a coping strategy to overcome psychological pressures due to the side effects of chemotherapy.

https://doi.org/10.33086/jhs.v16.i03.3992

CONCLUSION

Based on the results of research on 156 breast cancer patients at Dharmais Cancer Hospital about the relationship between stress levels and the quality of sleep of breast cancer patients, researchers can draw that there is a significant relationship between stress levels and sleep quality in breast cancer patients undergoing chemotherapy at Dharmais Cancer Hospital in 2022.

REFERENCES

Alifiyanti, D., Hermayanti, Y. and Setyorini, D. (2017) 'Kualitas tidur pasien kanker payudara berdasarkan terapi yang diberikan di RSUP dr. Hasan Sadikin Bandung', *Jurnal Pendidikan Keperawatan Indonesia*, 3(2), pp. 115–125.

Amelia, W. *et al.* (2023) 'Relationship between anxiety and sleep quality in cancer patients undergoing chemotherapy at Dr. M. Djamil Central Public Hospital', *Gaceta Médica de Caracas*, 131(4S).

Bidari, A.D. and Virawati, D.I. (2023) 'Keefektifan Media Video Breast Care Sadari Dan Leaflet Terhadap Minat Melakukan Praktik Sadari Pada WUS Di Klinik Aminah Amin Rianta 1', *JUMANTIK: Journal Of Students and Health Researchers*, 10(1), pp. 43–51.

Critchley, H.O.D. *et al.* (2020) 'Menstruation: science and society', *American journal of obstetrics and gynecology*, 223(5), pp. 624–664.

Dimyati, H. and Haryatmi, S. (2014) 'Weibull regression model for testing factors affecting survival of cancer patients with Electro-Capacitive Cancer Therapy (ECCT)', *Supported by*, p. 149.

Gautama, W. (2022) 'Breast cancer in indonesia in 2022: 30 years of marching in place', *Indonesian Journal of Cancer*, 16(1), pp. 1–2.

Hafsah, L. (2022) 'Gambaran Tingkat Kecemasan pada Pasien Kanker yang Menjalani Kemoterapi di RSUD dr. M. Yunus Bengkulu', *Jurnal Vokasi Keperawatan (JVK)*, 5(1), pp. 21–28.

Heena, H. *et al.* (2019) 'Knowledge, attitudes, and practices related to breast cancer screening among female health care professionals: a cross sectional study', *BMC women's health*, 19, pp. 1–11.

Isfahani, P., Hossieni Zare, S.M. and Shamsaii, M. (2020) 'The Prevalence of depression in Iranian women with breast cancer: A meta-Analysis', *Internal Medicine Today*, 26(2), pp. 170–181.

Khairani, S., Keban, S.A. and Afrianty, M. (2019) 'Evaluation of drug side effects chemotherapy on quality of life (QOL) breast cancer patients at hospital x in Jakarta', *Jurnal Ilmu Kefarmasian Indonesia*, 17(1), pp. 9–13.

Kocarnik, J.M. *et al.* (2022) 'Cancer incidence, mortality, years of life lost, years lived with disability, and disability-adjusted life years for 29 cancer groups from 2010 to 2019: a systematic analysis for the global burden of disease study 2019', *JAMA oncology*, 8(3), pp. 420–444.

Kozier, B. *et al.* (2015) *Kozier and Erb's Fundamentals of Nursing [3rd Australian edition]*. Pearson Australia.

Kwekkeboom, K.L. *et al.* (2018) 'The role of inflammation in the pain, fatigue, and sleep disturbance symptom cluster in advanced cancer', *Journal of pain and symptom management*, 55(5), pp. 1286–1295.

Lestari, A., Budiyarti, Y. and Ilmi, B. (2020) 'Study fenomenologi: psikologis pasien kanker yang menjalani kemoterapi', *Jurnal Keperawatan Suaka Insan (Jksi)*, 5(1), pp. 52–66.

Miaskowski, C. *et al.* (2020) 'Stress and symptom burden in oncology patients during the COVID-19 pandemic', *Journal of pain and symptom management*, 60(5), pp. e25–e34.

Mystakidou, K. *et al.* (2015) 'Self-efficacy and its relationship to posttraumatic stress symptoms and posttraumatic growth in cancer patients', *Journal of Loss and Trauma*, 20(2), pp. 160–170.

Nararta, M.D., Juliantara, P.E. and Amelia, C. (2022) 'Comparison of Consistency Value of Absorbent Dose of Plastisin and Silicone Bolus Using Electron With 6 Mev Energy at Sanglah Rsup Denpasar', *Journal of Social Research*, 1(12), pp. 558–565.

Notoatmodjo, S. (2010a) 'Ilmu Perilaku Kesehatan. Jakarta: Rineka Cipta'. Jakarta.

Notoatmodjo, S. (2010b) *Metodologi Penelitian Kesehatan*. Jakarta. Rineka Cipta Indonesia.

Potter, P. and Perry, A. (2015) 'Nursing Fundamental Textbooks: Concepts, Processes & Practices (Vol. I)', *Jakarta: EGC* [Preprint].

Septilia, F. (2018) 'Hubungan tingkat stres dengan kualitas hidup pasien kanker payudara pada berbagai tingkatan stadium'.

Shahin, W., Kennedy, G.A. and Stupans, I. (2019) 'The impact of personal and cultural beliefs on medication adherence of patients with chronic illnesses: a systematic review', *Patient preference and adherence*, pp. 1019–1035.

Smith, R.A. *et al.* (2018) 'Cancer screening in the United States, 2018: a review of current American Cancer Society guidelines and current issues in cancer screening', *CA: a cancer journal for clinicians*, 68(4), pp. 297–316.

Stuart, G.W. (2021) *Prinsip dan Praktik Keperawatan Kesehatan Jiwa Stuart, Edisi Indonesia 11*. Elsevier Health Sciences.

Sun, Y. *et al.* (2021) 'Prevalence of sleep disturbances in patients with chronic non-cancer pain: a systematic review and meta-analysis', *Sleep medicine reviews*, 57, p. 101467.

Trabert, B. *et al.* (2020) 'Progesterone and breast cancer', *Endocrine reviews*, 41(2), pp. 320–344.

Washbrook, E. (2006) 'Risk factors and epidemiology of breast cancer', *Women's Health Medicine*, 3(1), pp. 8–14.