E-ISSN - 2477-6521
Vol 9(2) June 2024 (280-289)
Jurnal Endurance : Kajian Ilmiah Problema Kesehatan
Available Online http://ejournal.kopertis10.or.id/index.php/endurance

THE EFFECT OF A COMBINATION OF LAVENDER AROMA THERAPY AND ART THERAPY ON FATIGUE AND QUALITY OF LIFE BREAST CANCER PATIENTS WHO UNDERGOING CHEMOTHERAPY

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Submitted: 27-05-2024, Reviewed: 17-06-2024, Accepted: 08-07-2024
DOI: http://doi.org/10.22216/jen.v9i2.2964

ABSTRACT

Introduction: Fatigue is one of the complaints that breast cancer sufferers often experience while undergoing chemotherapy. Based on research conducted by Mostafaei et al in 2021, it was stated that 99% of breast cancer sufferers undergoing chemotherapy complained of fatigue. Likewise, the incidence of low quality of life in breast cancer is 56.3%. Poor quality of life causes poor health status during treatment. This study aims to analyze the effect of a combination of lavender aroma therapy and art therapy in reducing fatigue and improving the quality of life in breast cancer sufferers undergoing chemotherapy. Method: This research consists of two stages, namely the first stage of preparing the module and the second stage using a quasi-experiment with a pre-test - post test design. The sampling technique used purposive sampling with a total of 33 people in the reinforcement group and 33 people in the control group. Results: The effect of a combination of lavender aroma therapy and art therapy carried out for seven days was found on fatigue and quality of life in breast cancer patients undergoing chemotherapy in the intervention group. This is proven by the difference between pre and post after being given intervention in the treatment group on fatigue and quality of life variables with a p value <0.05. Meanwhile, in the control group there was no effect because the p value was >0.05. Conclusion: The combination of lavender aromatherapy and art therapy can be an alternative activity for breast cancer patients undergoing chemotherapy to reduce fatigue scores and improve quality of life.

Keywords: *Lavender Aromatherapy, Art Therapy, Fatigue, Chemotherapy, Quality of Life*

INTRODUCTION

Breast cancer is a type of cancer that often occurs in women throughout the world, one of the treatments used for the healing process is chemotherapy (Vulpen et al., 2018). Chemotherapy is a therapy that uses certain drugs to stop the growth of cancer cells (Neuss et al., 2017). Chemotherapy works on cells that divide rapidly, so apart from cancer cells, normal cells that grow quickly will be damaged by chemotherapy drugs (Wardani et al., 2014). Chemotherapy treatment in breast cancer patients has both physiological and psychological impacts (Li et al., 2022).

Chemotherapy drugs are prone to causing destruction of cells at a large growth rate. These drugs can also have an impact on several body systems which can cause a person to feel tired (Smeltzer, 2001). Fatigue is an unpleasant condition such as lethargy, weakness, exhaustion, and lack of energy associated with prolonged stress (Karadag & Baglama, 2019). Fatigue is one of the complaints that breast cancer sufferers often experience while undergoing chemotherapy. Based on

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research conducted by Mostafaei et al., (2021) it is stated that 99% of breast cancer sufferers who underwent chemotherapy complained of fatigue. Fatigue is defined as a mental and unpleasant feeling in the form of physical, emotional and cognitive exhaustion (Mostafae et al., 2021). The impact of fatigue causes disruption to health and well-being and creates a financial burden for families and society (Jiang et al., 2020). Fatigue can affect an individual's ability to tolerate treatment, which can result in discontinuity and participation in essential activities of daily living (Compos et al., 2020).

Likewise, the incidence of low quality of life in breast cancer is 56.3% (Lee et al., 2021). This is similar to research conducted by Mirzae et al. (2021) that there is a decrease in quality of life with a percentage of 57.1% in breast cancer patients. The disruption to the quality of life in breast cancer patients undergoing chemotherapy is caused by the physical and psychological impacts of chemotherapy (Li et al., 2022). Some breast cancer sufferers perceive that physical complaints from chemotherapy are very sad (Ruiz-Casado et al., 2021). Apart from that, breast cancer sufferers who undergo chemotherapy think that they are worthless. The existence of subjective perceptions related to satisfaction makes them think that they are good or not, compared to what they consider possible or ideal (Silva & Lancellotti, 2021).

Thoughts and perceptions then influence their body condition, psychological condition, self-dependence, relationship with society, self-confidence, and ultimately impact their relationship with the surrounding environment (Mahfouz and Almaghrabi, 2020). Then quality of life significantly influences patient prognosis and their survival (Gloria and Steinhardt, 2016). Poor quality of life causes their health status to become worse during treatment (Binotto et al., 2020).

The theory used in this research is comfort theory which is taken from Kolkaba's Comfort theory. According to Kolcaba, comfort is something that strengthens and ergonomic which is directly related to appearance at work (Aligood, 2014). Kolcaba said that there are four contexts of comfort received by individuals in terms of physical, psychological, spiritual, sociocultural and environmental aspects. The hypotheses in this research include: 1) There is an effect of a combination of lavender aroma therapy and art therapy on fatigue in breast cancer sufferers; 2) There is an influence of the combination of lavender aroma therapy and art therapy on the quality of life of breast cancer sufferers.

This research aims to analyze the effect of a combination of lavender aroma therapy and art therapy in reducing fatigue and improving the quality of life in breast cancer sufferers undergoing chemotherapy. This research consists of two stages, namely the first stage is the preparation of modules by conducting literature studies, field studies, and expert consuls. The second stage of research used a quasi-experiment with a pre-test - post test design with sampling techniques *purposive sampling.*

The total sample in this study consisted of 66 respondents, namely, 33 intervention groups and 33 control groups. The instruments in this research used the WHOQOL-Brief and BFI questionnaires. The independent variable in this study was a combination of lavender aroma therapy and art therapy, while the dependent variables were fatigue and quality of life. The statistical analysis used in this research was the Wilcoxon Signed Rank Test and the Mann-Witney test.

In the first stage of research, researchers prepared modules for intervention guidelines used in the second stage. The aim of phase one research is to support the preparation of an intervention module combining lavender aroma therapy

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and art therapy to reduce fatigue and improve the quality of life in breast cancer patients undergoing chemotherapy. Phase one research consists of several steps, the first is that the researcher conducts a literature study. The literature data sources used in this research are articles of international and national reputation related to fatigue and quality of life in cancer patients undergoing chemotherapy. After that, researchers conducted a field study by interviewing 5 breast cancer patients undergoing chemotherapy at Dr. M. Djamil Hospital. Interview results showed that 80% experienced moderate fatigue and 60% of breast cancer patients experienced poor quality of life.

The next stage is to prepare a module draft by determining the module title, objectives that must be achieved after studying the module, developing material in an outline, re-examining the draft that has been prepared and conducting expert consultations. The aim of this expert consultation is to obtain recommendations and implement interventions combining lavender aroma therapy and art therapy to reduce fatigue and improve quality of life. The researcher held an expert consultation with a nurse in the field of oncology at Dr. RSUP. M. Djamil Padang. After that, the researchers developed a lavender aroma therapy and art therapy intervention module as a guide for phase 2 research on breast cancer patients undergoing chemotherapy. The second phase of the research found the effect of a combination of lavender aroma therapy and art therapy carried out for seven days on fatigue and quality of life in breast cancer patients undergoing chemotherapy in the intervention group. This is proven by the difference between pre and post after being given intervention in the treatment group on fatigue and quality of life variables with a p value <0.05. Meanwhile, in the control group there was no effect because the p value was >0.05.

When inhaling the aroma of lavender can reduce cortisol secretion from the adrenal glands and produce relaxation by inhibiting sympathetic activity and stimulating the parasympathetic system (Mardhiyataini et al, 2022). In addition, the lavender aroma given through inhalation is more effective in increasing attention, providing a relaxation response. This is because by inhalation the molecules will enter the body through smell which is related to the limbic system. The combination of lavender aroma therapy and art therapy will relax the body. This is because the imagination process in drawing activates the visual cortex in the brain which triggers a person's feelings of happiness, calm, and changes in mood and feelings of well-being. The combination of lavender aroma therapy and art therapy is significantly effective in reducing fatigue scores and improving the quality of life of breast cancer patients undergoing chemotherapy, this is proven by the significant difference in the intervention group compared to the control group.

MATERIALS AND METHODS

Design

This research design uses a quasi-experimental with pre-test – post test design. Research reveals the relationship between cause and effect by involving a control group in addition to the experimental group.

Population and Sample

The population in this study was breast cancer patients who underwent chemotherapy in the last three months, totaling 88 people. Determining the sample in this study used a purposive sampling technique, namely selecting samples according to research criteria. The sample in this study amounted to 66 people, namely 33 experimental groups and 33 control groups.

Intervention

The intervention in this study was carried out with the patient sitting in a

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comfortable position. Then place gauze containing 2 drops of lavender aromatherapy on the patient's collar for 20 minutes. At the same time, continue drawing using drawing books, pencils and crayons with free themes so that you can explore thoughts, emotions and be creative. The intervention was carried out within 20 minutes, for 7 consecutive days with the same steps every morning in the time range 08.00 – 12.00 at each patient's home independently. To ensure that the respondent really carries out the intervention at home, the researcher will remind the respondent or the respondent's companion with a wake-up call system or telephone call every day and instruct the respondent to fill out a checklist if they have carried out the intervention. This study used a pre-post test design method, namely conducting a pre-test before the intervention was given and conducting a post-test on the seventh day by visiting each patient's house.

Instrument

Fatigue measurement using the BFI (Brief Fatigue Inventory) instrument on fatigue consists of 9 question components. Each question uses a scale of 0 – 10, with a value of 0 meaning "nothing" and 10 being "the most severe fatigue". All questionnaire component scores are added up and then divided by 9 and classified according to the level of fatigue with the interpretation of a score of 1-3 indicating mild fatigue, a score of 4 - 6 indicating moderate fatigue and a score of 7 - 10 indicating severe fatigue. Meanwhile, quality of life uses the WHOQOL-Brief instrument with 26 question items to assess the quality of life of breast cancer patients (WHO, 2004). This questionnaire consists of 4 dimensions, namely physical, psychological, social and environmental dimensions. The physical health dimension consists of 7 question items, namely questions in numbers 3, 4, 10, 15, 16, 17, and 18. The psychological dimension consists of 6 question items, namely questions in numbers 5, 6, 7, 11, 19, and 26. Each component of the question will be added up and the quality of life is said to be very poor if the score is 0 – 20, the quality of life is poor if the score is 21-40, the score 41 – 60 is said to be moderate quality of life, the score 61 – 80 is good quality of life, and the score 81 – 100 excellent quality of life.

Data analysis

Univariate analysis in this study uses a frequency distribution. Meanwhile, bivariate analysis uses the Wilcoxon Signed Rank Test and to see significance between groups, researchers will use the Mann-Witney test. The test results are said to be significant if the p value <0.05.

Ethical Clearance

This research has received recommendations and ethical permission from the ethics commission of RSUP Dr. M. Djamil Padang. This research has gone through an ethical review procedure and was deemed feasible to carry out.

RESULTS

The intervention group did a combination of lavender aromatherapy and art therapy exercises for 20 minutes once per day for seven consecutive days. The total sample was 66 people, with details of 33 people in the intervention group and 33 people in the control group. The control group in this study was not given combination therapy with lavender aromatherapy and art therapy.

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Respondent Characteristic

Table 1 Age Distribution of Breast Cancer Patients Undergoing Chemotherapy at RSU Dr. M. Djamil Padang

Group	N	Mean	SD	Min – Maks	P *value*
Treatment	33	49,66	9,6	25 – 68	
Control	33	49,12	9,1	30 - 65	0,826
Total	**66**	**49,39**	**9,35**	**25 – 68**	

Based on the table above, the average patient age is 49 years, with the youngest age being 25 years and the oldest being 68 years. Based on the homogeneity test, the p value was > 0.05, which means that the ages of patients in the treatment group and the control group had the same age range.

Table 2 Distribution of Education, Occupation, Cancer Stage, and Chemotherapy Cycle of Breast Cancer Patients Undergoing Chemotherapy

Characteristics	Group			
	Treatment		Control	
	Frequency	Percentage	Frequency	Percentage
Education				
SD	2	6.1 %	5	15.2 %
SMP	6	18.2 %	5	15.2 %
SMA	16	48.5 %	14	42.4 %
DIII	4	12.1 %	3	9.1 %
DV/S1	5	15.2 %	6	18.2 %
Total	**33**	**100 %**	**33**	**100 %**
Work				
IRT	25	75.8%	24	72.7 %
PNS	2	6.1%	4	12.1 %
Other	6	18.2%	5	15.2 %
Total	**33**	**100%**	33	**100%**
Cancer Stage				
Satu	3	9.1 %	6	18.2 %
Dua	30	90.9 %	27	81.8 %
Total	**33**	**100 %**	**33**	**100 %**
chemotherapy				
cycle	12	36. 4 %	12	36.4 %
Two	8	24.2 %	5	15. 2
Three	6	18.2%	6	18.2%
Four	3	9.1 %	3	9.1 %
Five	4	12.1 %	7	21.2 %
Six	**33**	**100 %**	**33**	**100 %**
Total				
chemotherapy				
schedule	33	100%	33	100%
Per week / 21 days	-	-	-	-
Moon	**33**	**100%**	**33**	**100%**
Total				

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Based on the table above, it was found that most breast cancer patients undergoing chemotherapy had an education level at high school level with a percentage of (48.5%) in the intervention group and in the control group the percentage was (36.4%). The majority undergoing chemotherapy entered the second-grade cancer stage with a percentage of (90.9%) in the intervention group and (81.8%) in the control group

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Fatigue

Table 3 Distribution of Fatigue Frequency Before and After Intervention

Variable	Group Treatment		Group Control	
Fatigue	**Frequency**	**%**	**Frequency**	**%**
Pre-Intervention				
Light	10	30,3	11	33,3
Currently	23	69,7	22	66,7
Post Intervention				
Light	25	75,8	13	39,4
Currently	8	24,2	20	60,6

Based on the table above, the percentage of mild fatigue was found (30.3%) in the intervention group and (33.3%) in the control group. Meanwhile, those experiencing moderate fatigue were (69.7%) in the intervention group and (66.7%) in the control group. Then during the post test the majority of respondents experienced mild fatigue with a percentage (75.8%) in the intervention group, while in the control group the majority of respondents experienced moderate fatigue (60.6%). Even though there was a reduction in fatigue in the control group, the percentage reduction in fatigue in the intervention group was greater than in the control group.

Quality Of Life

Table 4. Distribution of Frequency Quality of Life Before and After Intervention

Variable Quality of Life	Group Treatment		Group Control	
Pre-Intervention	**Frequency**	**%**	**Frequency**	**%**
Very bad	0	0	0	0
Bad	8	24,2	9	27,3
Currently	25	75,8	24	72,7
Good	0	0	0	0
Very Good	0	0	0	0
Post Intervention	Frekuensi	%	Frekuensi	%
Very bad	0	0	0	0
Bad	0	0	2	6,1
Currently	6	18,2	27	81,8
Good	20	60,6	4	12,1
Very Good	7	21,2	0	0

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Based on the table above, it can be explained that in the pretest results of the intervention group the quality-of-life level was mostly in the moderate category with a percentage of (75.8%) and in the post test results the level of quality of life increased to good (60.6%) and very good (21 .2%). Meanwhile, the level of quality of life in the pre-test results of the control group was mostly in the moderate category with a percentage of (72.7%) and the post-test results of the level of quality of life were in the moderate category, increasing to (81.8%), the rest were in the poor category (61 .1%) and good (12.1%).

Table 5. Differences in Fatigue Before and After Intervention

Variable	Group		N	Min-Max	*p-value*
Fatigue	Intervention	Pre	33	26-49	0,000
		Post	33	20-37	
	Control	Pre	33	28-46	0,379
		Post	33	20-46	

Based on the table above, it shows the results of the Wilcoxon signed rank test in the treatment group (p value = 0.000), which means the p value is <0.05, so statistically there is a significant difference between the pretest and post test. So, it can be concluded that there is an effect of the combined intervention of lavender aroma therapy and art therapy on fatigue in breast cancer patients undergoing chemotherapy.

From the table 6, it was found that after analyzing the data using the Wilcoxon signed rank test in the intervention group, the p value was 0.000, so the p value was <0.005, which means that there was an effect of the combined intervention of lavender aroma therapy and art therapy on the quality of life in breast cancer patients undergoing chemotherapy.

Table 6 Differences in Quality of Life Before and After Intervention

Variable	Group		N	Min-Max	*p-value*
Quality of Life	Intervention	Pre	33	36-63	0,000
		Post	33	58-88	
	Kontrol	Pre	33	36-64	0,053
		Post	33	37-64	

Meanwhile in the group control test results wilcoxon signed the rank test shows the p value is 0.053, so the p value is >0.05, which means there is no significant change in the control group before and after observation.

DISCUSSION

Interpretation of research results is carried out by comparing the results of research that has been carried out with concepts, theories and research results that are appropriate to the research context to analyze similarities and differences. This study aims to see the effect of a combination of lavender aroma therapy and art therapy on fatigue and quality of life in breast cancer patients undergoing chemotherapy at Dr.M. Djamil General Hospital, Padang.

Based on the results of research conducted by researchers, it shows that there is a difference in the pre-post mean between the treatment group and the control group regarding fatigue in breast cancer patients undergoing chemotherapy. Based on these facts, the decrease in fatigue between before and after the intervention

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shows that lavender aroma therapy combined with art therapy carried out within 20 minutes for seven days can have a positive impact on breast cancer patients undergoing chemotherapy as a non-pharmacological therapy in reducing fatigue scores.

This is proven by the percentage of respondents in the intervention group who experienced moderate fatigue before being given the intervention (69.7%), after being given the combination intervention of lavender aroma therapy and art therapy, the fatigue score decreased by a moderate percentage (24.25%). Meanwhile, in the control group, at the pre-test, respondents experienced moderate fatigue (66.7%), and at the post-test it was (60.6%). Even though there was a decrease in fatigue scores in the control group, the percentage reduction in fatigue in the intervention group was greater than in the control group.

This study showed that there was a reduction in fatigue after being given a combination of lavender aroma therapy and art therapy for fatigue in breast cancer patients undergoing chemotherapy. This is proven by the results of the Wilcoxon signed rank test in the treatment group (p value = 0.000), which means the p value is <0.05, so statistically there is a significant difference between the pretest and post test. So, it can be concluded that there is an influence of the combined intervention of lavender aroma therapy and art therapy on fatigue in cancer patients undergoing breasts Chemotherapy. This change occurred because the patient's body condition became more relaxed after using a combination of lavender aroma therapy and art therapy. Thus, making patients feel more comfortable without burden after the intervention. Apart from that, patients said they felt happy when carrying out the intervention without feeling burdened and reducing the fatigue they felt. Furthermore, changes in fatigue in the control group may be due to factors such as the patient's psychological condition being good, so that respondents do not have a burden on their minds. Apart from that, researchers assume that a non-pharmacological approach in the form of a combination of lavender aroma therapy and art therapy is an effective therapy in reducing fatigue. Meanwhile, the decrease in fatigue scores in the control group was influenced by several factors such as physical activity, psychosocial, mental and medication factors (Bower, 2014).

Furthermore, the results of research related to quality of life showed that there was an influence of the combination of lavender aroma therapy and art therapy on the quality of life in breast cancer patients undergoing chemotherapy. The results of this study showed that there was an increase in quality of life between before and after the intervention was given to the treatment group. This is proven by the results of the Wilcoxon signed rank test in the intervention group, which showed that the p value was 0.000, so the p value was <0.005, which means that there was an effect of the combined intervention of lavender aroma therapy and art therapy on the quality of life in breast cancer patients undergoing chemotherapy. Researchers assume that the improvement in quality of life after being given the intervention is due to the relaxation effect felt by the patient. The relaxation that occurs is caused by the linalool and linaly acetate content in lavender activating the limbic system and stimulating the thalamus to release relaxation hormones. So, when the body is in a state of relaxation, the mind will be calm, making you feel more comfortable, and enjoying life well.

CONCLUSION

This research proves that a combination of lavender aromatherapy and art therapy exercises carried out once a day for 20 minutes for seven consecutive days has a significant effect on reducing fatigue scores and improving the quality of life in breast cancer patients undergoing

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chemotherapy. The implication of this research is that it can be an independent therapeutic modality for breast cancer patients to reduce fatigue scores and improve quality of life.

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