ORIGINAL ARTICLE

The Five-Finger Relaxation Techniques on Anxiety, Stress and Quality of Life in Breast Cancer Patients

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ABSTRACT

Introduction: Breast cancer is a major cause of morbidity and mortality globally, and the patient experiences anxiety, stress, and reduced quality of life. The five-finger relaxation technique is a non-pharmacological effort used to overcome these symptoms. Therefore, this study aims to determine the effect of the five-finger relaxation technique on anxiety, stress, and quality of life of breast cancer patients. **Methods:** This is a quasi-experiment with a pre and post-test control group, involving 30 breast cancer patients who used the health services at Sekarwangi Hospital and they were divided into control and intervention groups. The effect measured include anxiety, stress, and quality of life, where the Zung Self-rating Anxiety Scale (ZSAS) and the DASS were used to assess anxiety and stress, while the European Organization for Research and Treatment of Cancer Quality of Life Questionnaire (EORTC QLQ-C30) was used to assess the quality of life. Furthermore, the statistical analysis used Paired and Independent Sample t-test. **Results:** The results showed the differences in pre and post-test scores for anxiety ($p=0.002$), stress ($p=0.040$), and quality of life ($p=0.043$) in the control group, and the scores for anxiety ($p<0.001$), stress ($p<0.001$), quality of life ($p<0.001$) in the intervention group. Also, there were differences in scores for anxiety ($p=0.013$), stress ($p=0.044$), and quality of life ($p<0.001$) between the groups, where the intervention group scored better than the control. The five-finger relaxation technique causes relaxation and peace, which reduces mental stress and tension leading to less anxiety and stress and improved quality of life of the patients. **Conclusion:** The five-finger relaxation technique affects anxiety, stress, and quality of life of breast cancer patients. Furthermore, the technique should be a form of independent nursing intervention when providing nursing care to breast cancer patients.

Keywords: Anxiety, Stress, Quality of Life, and Breast Cancer

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INTRODUCTION

Cancer is a leading cause of morbidity and mortality globally, and about 19.3 million in the world are breast cancer patients, with a percentage of 11.7. There were 396,914 cancer cases with a death rate of 145 people per 100,000 patients, specifically in Indonesia, and breast cancer was common with 65,858 cases (1).

Generally, breast cancer patients can be treated in two ways, namely pharmacological and non-pharmacological (2). The treatments include surgery, chemotherapy, radiation, and combination therapies (3). Furthermore, pharmacological therapy is effective in overcoming symptoms, such as pain, nausea, difficulty sleeping, and constipation, which reduces the quality of life of the patients. However, the patients experience physiological and psychological side effects which make them anxious, stressed, and decreased quality of life (4). Previous studies demonstrated that breast cancer patients receiving treatment reported a decrease in the physical, psychological, and quality of life (5). The psychological side effects can be in the form of feelings, such as anxiety and stress (4, 6,7). Anxiety is an unpleasant and unjustifiable feeling of fear accompanied by physiological symptoms, while anxiety disorders contain elements of significant suffering and functional disturbances caused by anxiety (8). Meanwhile, stress is a condition caused by the interaction between the individual and environment, resulting in a feeling of pressure due to demands that originate from a person's biological, psychological, and social status (9,10).

Non-pharmacological treatments have proven effective in treating cancer symptoms, including cognitive behavior therapy (CBT) which is effective to overcome psychological and physiological problems and it includes relaxation, distraction, and biofeedback (11,12). There are several relaxation techniques, including the five-

finger relaxation technique. This technique is the fastest and easiest method in producing relaxation, hence having advantages over others (12).

The five-finger relaxation is an effort to divert attention that reduces pulse and respiration, thereby decreasing muscle tension and metabolic rate and producing a feeling of peace and relaxation. Consequently, the individual's perception of anxiety and stress changes through accepting suggestions on the verge of subconsciousness or in a relaxed state by moving their fingers according to orders (13). Although the use of the five-finger relaxation technique in breast cancer patients has not been applied to reduce stress and improve quality of life, few studies have used this technique to reduce anxiety. The purpose of this study was to determine the effect of the five-finger relaxation technique on anxiety, stress, and quality of life of breast cancer patients.

MATERIALS AND METHODS

Study design

This is a quasi experiment with a pre and post-test control group design. Furthermore, this study determined the consequences of the treatment on the subject under investigation by comparing one experimental group that was given treatment with one group comparator without treatment (14).

Setting and sample

The study was conducted in Sukabumi Regency, West Java Province, Indonesia, and the data were collected in May 2021. In addition, the population involved 30 breast cancer patients on treatment at the Sekarwangi Hospital, Sukabumi Regency, who were divided into two groups, namely the control and intervention groups, which contains 15 respondents each. The inclusion criteria include those over 18 years of age and stage 1, 2, and 3 breast cancer. Meanwhile, the exclusion criteria involved hand defects and decreased consciousness, and the purposive sampling technique was used.

Variable

The dependent variables include anxiety, stress, and quality of life, while the independent variable was the five-finger relaxation technique.

Instrument

The Zung Self-rating Anxiety Scale (ZSAS) was used to assess anxiety and stress, where the internal consistencies (coefficient alpha) for two scales for the DASS normative sample were 0.84 and 0.90, respectively. Also, the quality of life was assessed using the European Organization for Research and Treatment of Cancer Quality of Life Questionnaire (EORTC QLQ-C30) with validity referring to Perwitasari (2011), where the items had a loading factor and reliability with Cronbach alpha > 0.70 and 0.80, respectively.

Intervention

The pre-test data were taken at the beginning of the meeting and before the intervention was carried out from the control and intervention groups, respectively. Furthermore, the five-finger relaxation was conducted 10 times in the intervention group for 3 weeks with an interval of one day and each action was carried out for 10-15 minutes. The post-test data in the control group was collected after 3 weeks from the first meeting, while that of the intervention group was taken after the intervention was completed at the end of the third week.

Data analysis

Statistical analysis used paired and independent sample t-test using the SPSS version 22. The hypothesis test is rejected if the p-value < 0.05.

Ethical clearance

Ethical approval was conducted through the study ethics committee of RSUD R. Syamsudin, SH Sukabumi City with letter number 35/KEP-RS/RSUD/VII/2021. The potential participants were met and obtained their consent to participate.

RESULTS

Table I showed the characteristics of the respondents in the intervention and control groups, which were aged between 36-45 years (46.7% and 60%), high school education (53.4% and 86.7%), and unemployed (80% and 93.3%), long-suffering respondents > 1 year and stage 2 in the control group (40%) and stage 3 in the intervention group (60%). The homogeneity test results for the respondents' characteristics obtained a p-value > 0.05, indicating that the characteristics of the respondents in the two groups are the same or homogeneous.

Table II showed that the pre-test and post-test of the control group had a decrease in the average value of anxiety from 20.53 (9.694) to 14.73 (6.386). Meanwhile, in the pre-test and post-test stress, there was a decrease in the average value from 42.00 (9.503) to 36.20 (14.274). The pre and post-test of the quality of life increased on average from 67.27 (27.01) to 73.67 (19.02).

Also, table II showed the level of anxiety in the intervention group, where the pre-test and post-test demonstrated a decrease in the average value of anxiety from 24.87 to 14.60 with a difference of 10.27 and a decrease in SD from 7.873 to 5.792. The pre-test and post-test stress indicated a decrease in the average value from 72.13 to 60.00 with a difference of 12.13 and a decrease in SD from 15.226 to 11.988. In the pre and post-test of the quality of life, there was an increase in the average value from 55.20 to 82.27 with a difference of 27.07 and an increase in SD from 8.436 to 11.209.

Table III shows that in the control group, there was a

Table I: Characteristics of Respondents Based on Age, Education and Occupation of Respondents Control Group and Intervention Group

Characteristics	Group				p
	Control		Intervention		
	F	%	F	%	
Age (years)					
17-25	1	6.7	1	6.7	
26-35	3	20	2	13.3	
36-45	7	46.7	9	60	
46-55	1	6.7	1	6.7	0,895
56-65	3	20	1	6.7	
>65	0	0	1	6.7	
Total	15	100	15	100	
Education					
elementary	4	26.7	0	0	
Junior high school	3	20	1	6.7	
Senior high school	8	53.4	13	86.7	0,444
university	0	0	1	6.7	
Total	15	100	15	100	
Job					
employee	3	20	1	6.7	
unemployed	12	80	14	93.3	0,060
Total	15	100	15	100	
Stadium					
Stadium 1	4	26.7	2	6.7	
Stadium 2	6	40.0	4	13.3	0.000
Stadium 3	5	33.3	9	30.0	
Period of disease					
> 1 year	15	100	15	100	-

Table II: Overview of Anxiety, Stress and Quality of Life Before and After Five Finger Relaxation

Control Group					
Test	**N**	**Mean**	**SD**	**Min Value**	**Max Value**
Anxiety					
Pre-Test	15	20.53	9.694	6	41
Post-Test	15	14.73	6.386	5	29
Stress					
Pre-Test	15	42.00	9.502	29	60
Post-Test	15	36.20	14.274	15	57
Quality of Life					
Pre-Test	15	67.27	27.012	40	99
Post-Test	15	73.67	19.018	41	96
Intervention Group					
Test	**N**	**Mean**	**SD**	**Min Value**	**Max Value**
Anxiety					
Pre-Test	15	24,87	7,873	11	40
Post-Test	15	14,60	5,792	7	27
Stress					
Pre-Test	15	72.13	15.226	34	95
Post-Test	15	60.00	11.988	36	80
Quality of Life					
Pre-Test	15	55.20	8.436	41	65
Post-Test	15	82.27	11.209	57	100

Table III: Hypothesis Testing Differences in Anxiety, Stress, and Quality of Life in the Control Group and the Intervention Group

Control Group					
Test	**Mean**	**Mean Differ-ence**	**SD**	**t**	**p-value**
Anxiety					
Pre-Test	20.53	5.8	5.858	3.835	0.002
Post-Test	14.73				
Stress					
Pre-Test	42.00	5.8	9.923	2.264	0.040
Post-Test	36.20				
Quality of Life					
Pre-Test	67.27	-6.40	11.134	-2.226	0.043
Post-Test	73.67				
Intervention Group					
Test	**Mean**	**Mean Differ-ence**	**SD**	**t**	**p-value**
Anxiety					
Pre-Test	24.87	10.27	2.789	14.255	0.000
Post-Test	14.60				
Stress					
Pre-Test	72.13	-12.133	6.010	7.819	0.000
Post-Test	60.00				
Quality of Life					
Pre-Test	55.20	- 27.07	9.960	-10.525	0.000
Post-Test	82.27				
Group	**Mean**	**Mean Difference**		**t**	**p-value**
Anxiety					
Control group	5.800	-4.467		-2.667	0.013
Intervention group	10.267				
Stress					
Control group	5.800	-6.333		-2.114	0.044
Intervention group	12.133				
Quality of Life					
Control group	-6.400	20.667		5.358	0.000
Intervention group	-27.067				

difference in the average pre-test and post-test scores on anxiety (p = 0.002), stress (p = 0.040), and quality of life (p = 0.043). Also, it demonstrated that in the intervention group, there were differences in the average pre-test and post-test scores on anxiety (p<0.001), stress (p<0.001), and quality of life (p<0.001). There is a significant difference between the control and intervention groups in the average anxiety (p = 0.013), stress (p=0.044), and quality of life (p=0.000), where the increased score in the intervention group was greater than that in the control.

DISCUSSION

The results of this study showed that there was a decrease in anxiety in breast cancer patients in the control and intervention groups, though the decrease in the intervention group was significant. These results

were in line with the study by Juniarti et al., (2019) which indicated a significant decrease in anxiety in breast cancer patients receiving chemotherapy, though the results of this study were higher in decreasing anxiety (15). Furthermore, the anxiety experienced by these patients arises when the patient is diagnosed with cancer and during treatment. This anxiety feeling is experienced by all patients throughout their lives.

The five-finger relaxation technique helps the patients reduce anxiety, as it is a form of self-hypnosis that affects the limbic system or structures in the brain related to emotions, thereby affecting the release of hormones that stimulate anxiety so that it will be reduced (16). Several studies also provide evidences that the five-finger relaxation technique is effective for causing a relaxation effect and reducing anxiety. Furthermore, the patients that performed the five-finger relaxation technique were led back to pleasant experiences in their subconscious, to achieve the feeling of comfort and relaxation, hence decreasing the anxiety level. The results indicated that the stress in the control and the intervention groups decreased, where the intervention group had a significant reduction than the control. Also, it had similarities with previous studies related to the use of relaxation techniques, such as the study of Widyastuti et al., (2020) with progressive muscle relaxation techniques which effectively reduce stress levels in breast cancer patients (17).

A person diagnosed with breast cancer will be stressed even though the results were at an early stage, so stress control techniques are needed for a breast cancer patient. Hence, a way to deal with stress is through the non-pharmacological five-finger relaxation technique. According to Davis & McKay, the five-finger relaxation technique can overcome psychological disorders, such as stress, because it utilizes the power of the mind by moving the body for self-recovery and maintaining health or a relaxed state of mind through inner communication that involves the senses, such as smell, sight, and hearing, thereby reducing stress. The brain increases the secretion of endorphins, melatonin, and serotonin when the mind and body are relaxed. These hormones function to reduce stress levels experienced by patients (18).

The results showed an increase in the quality of life in the control and intervention groups, where the intervention group experienced a significant increase compared to the control. Therefore, the five-finger relaxation technique affects the improvement of the quality of life in breast cancer patients, and this relaxation technique is part of hypnotherapy. Subsequently, studies by Tellez et al. (2017) showed similar results that hypnotherapy improves the quality of life of breast cancer patients (7,19).

Generally, relaxation techniques aim to reduce heart rate, respiratory rate, restore chronically contracted muscles, and relieve muscle tension, hence improving various negative symptoms which lead to an improvement in the quality of life (20,21). According to Barre et al., (2018), relaxation therapy helps the individuals during the treatment process while in the hospital. The therapy has an impact on cognition, affection, and individual behavior in overcoming various symptoms such as stress, anxiety, depression, and improving the quality of life (22). However, this study is small in sample obtaining from one city in West Java, hence it limits its generalizability.

CONCLUSION

The five-finger relaxation technique has a significant effect in reducing anxiety, stress and improving the quality of life in breast cancer patients. This study provided new information compared to previous studies which focused on one symptom. Therefore, the five-finger relaxation technique should be a form of independent nursing intervention when providing nursing care to breast cancer patients. The respondents' daily activities were not fully controlled in this study, hence that of the future respondents are expected to be tightly controlled.

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