EFFECTIVENESS OF SUPPORTIVE CARE INTERVENTIONS ON PSYCHOLOGICAL DISTRESS IN BREAST CANCER PATIENTS

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ABSTRACT
Supportive care interventions (SCI) are interventions used as symptom management of the side effects of breast cancer disease and treatment. This study aims to analyze the effectiveness of supportive care interventions on psychological distress in patients diagnosed with breast cancer. The research method used a quasi-experimental non-equivalent design with control group pretest-posttest, the research sample was 50 respondents consisting of two groups with each group of 25 respondents. Psychological distress (PD) was assessed using the Hospital Anxiety and Depression Scale (HADS. The bivariate analysis used was paired t-test and independent t-test. The results showed that there was a significant difference in psychological distress in the intervention group and control group after supportive care interventions with an average value of psychological distress (anxiety) in the intervention group (Mean = 4.16; SD = 1.700) and the control group (Mean = 0.24; SD = 0.879), while the average value of psychological distress (depression) in the intervention group was (Mean = 3.24; SD = 1.53) and the control group (Mean = 0.28; SD = 0.76). Statistical results obtained p=0.001 (<0.05). The conclusion of this study is that there is an effectiveness of supportive care interventions on psychological distress of breast cancer patients.

Keywords: breast cancer; psychological distress; supportive care interventions

INTRODUCTION

Breast cancer is the most common malignant tumor diagnosed in women worldwide and is a leading cause of death. The incidence rate of breast cancer continues to increase in various regions. Therefore, despite advances in its detection and treatment that have resulted in improved survival rates, efforts are still needed to find new therapeutic methods, as well as identify predictive and prognostic factors (Smolarz et al., 2022). In 2021, the American Cancer Society estimates that 284,000 U.S. citizens will be diagnosed with breast cancer and 44,130 will die from the disease (Siegel et al., 2022). According to data from the Global Cancer Observatory (GLOBOCAN) in 2022, breast cancer ranked first in the number of new cancer cases in Indonesia, reaching 66,271 cases (16.2%) of a total of 408,661 new cancer cases, and ranked third in the number of cancer deaths, reaching more than 22,598 cases (Bray et al., 2024).

Breast cancer patients experience not only physical symptoms, but also psychological symptoms such as pain, fatigue, cognitive dysfunction, impaired body image, anxiety, social isolation, and distress.(Whisenant et al., 2022;Thakur et al., 2022). Patients with breast cancer who are unable to cope with the physical and psychological challenges they face and who do not receive adequate care from health professionals are at risk of developing psychological distress (Thakur et al., 2022; Jang et al., 2022; Tung et al., 2018). Psychological distress (PD) is a collective term used to describe a range of psychological symptoms, including anxiety, depression, stress, and post-traumatic stress disorder (PTSD). Elevated distress levels are

linked to an increased risk of developing mental health conditions such as depression and anxiety (Kalin, 2020)

The National Comprehensive Cancer Network (NCCN) defines psychological distress (PD) as an unpleasant psychological experience that is multifaceted in nature, encompassing cognitive, behavioral, emotional, social, and spiritual factors. It can impede an individual's capacity to effectively cope with cancer-related symptoms (Riba et al., 2023). Patients with breast cancer experience higher levels of psychological distress (PD) compared to patients with non-cancer diagnoses. Approximately 21% of these patients experience anxiety and 13% experience depression (Marco & White, 2019). This condition has a significant impact on the patient's quality of life. Additionally, research conducted in Oman revealed that over half of the women diagnosed with breast cancer exhibited indications of psychological distress, with a prevalence of depression at 21.6% and anxiety at 17.0% (Al-Fahdi et al., 2023).

The prevalence of psychological distress, as measured using the Thermo Distress scale, is as high as 11-80%. This figure represents the proportion of individuals who experience psychological distress. The main risk factors for psychological distress in breast cancer patients are the highest level of education, late-stage cancer, emotional problems, lack of health insurance, history of mastectomy surgery, and history of depression (Tao et al., 2024). Nonpharmacological and complementary therapies have been extensively utilized in the management of psychological issues among breast cancer patients, particularly in the context of psychological distress (PD). Psychotherapeutic modalities have demonstrated efficacy in addressing PD symptoms in individuals diagnosed with breast cancer (Penberthy et al., 2023). Supportive care interventions represent a prominent example of non-pharmacological therapies employed in the treatment of psychological distress.

Supportive Care Interventions (SCI) constitute a category of care whose objective is to enhance the quality of life of individuals afflicted with the disease. This is achieved either by preventing or treating the early symptoms of the disease and the side effects associated with cancer treatment. SCI encompasses physical, psychological, social, and spiritual dimensions for patients and their families. There are multiple types of supportive care interventions, including pain management, nutrition support, counseling, physical activity, music therapy, meditation, and palliative care. SCI can be provided from the initial diagnosis to the end of life and can be integrated with other medical treatments (Scotté et al., 2023). Supportive care is an essential element of comprehensive breast cancer care that is often overlooked. Psychological and emotional aspects, along with the three most prevalent supportive care needs, require attention. These include the need for assistance in managing depression, anxiety, and stress; the need for guidance in addressing concerns about cancer progression and recurrence; and the need to express fears related to cancer and death (Martínez Arroyo et al., 2019).

METHOD
This study employed a quantitative methodology utilizing a non-equivalent pretest-posttest control group design. The study population consisted of 50 breast cancer patients. The research group was divided into two categories: a control group comprising 25 respondents and an intervention group comprising 25 respondents. The sampling technique utilized was non-probability sampling, as the patients were not selected randomly. The study sample criteria were stage 3 and 4 breast cancer patients, ages >18-70 years, patients able to read, hear and understand Indonesian and receiving chemotherapy. Demographic data were evaluated through the administration of a demographic data questionnaire, which included inquiries pertaining to age, ethnicity, religion, education, occupation, cancer stage, and

duration of illness. The instrument utilized for the assessment of psychological distress is the Hospital Anxiety and Depression Scale (HADS), a questionnaire designed to evaluate the presence and severity of anxiety and depressive symptoms. The questionnaire was comprised of 14 items, with seven assessing anxiety and seven assessing depression. Each item was scored on a scale of 0 to 3, with respondents identified as depressed and anxious if the total score was more than 8 to 21. The statistical analysis used is parametric analysis because the data is normally distributed using the Shapiro-Wilk test. The normality test uses Shapiro-Wilk because the number of samples < 50 respondents. Bivariate analysis used paired t-test to assess differences in paired groups and independent t-test to assess differences in two groups, namely control and intervention groups.

RESULT
Validity and Reliability
The validity test of each question of the HADS instrument was conducted on 30 breast cancer patients in the Oncology Room of Adam Malik Medan Hospital who were not research samples with the criteria that patients received breast cancer treatment. The results of the validity test of this research questionnaire show that the anxiety question in the HADS instrument has the lowest value of 0.590 and the depression question in the HADS instrument has the highest value of 0.589, so the questionnaire can be declared valid because rcount> 0.361. The reliability test of HADS questionnaire was conducted at Adam Malik Hospital Medan and the respondents tested were not the research sample. Reliability test with Cronbach's alpha value on anxiety questions 0.78 and depression 0.73. The Cronbach's alpha value in this study is reliable and trustworthy.

Table 1.
Respondent characteristics (n= 25)

Respondent characteristics	Interventions Groups		Control Groups	
	f	%	f	%
Age				
30-40 Years	1	4	4	16
41-50 Years	9	36	8	32
51- 60 Years	6	24	7	28
61-70	9	36	6	24
Ethnicity				
Jawa	12	48	14	56
Melayu	1	4	0	0
Batak Karo	6	24	2	8
Batak Toba	5	20	6	24
Mandiling	1	4	3	12
Religion				
Islam	14	56	17	68
Kristen Protestan	11	44	8	32
Education				
Elementary	1	4	1	4
Junior High School	4	16	2	48
Senior High School	12	48	15	60
Bachelor	8	32	4	28
Ocupation				
Private Employee	0	0	0	0
Self-employed	2	8	1	4
Housewife	18	72	21	84
Civil Servant	2	8	3	12
Retired	3	12	0	0
Breast Cancer Stage				
3	9	36	10	40
4	16	64	15	60

Respondent characteristics	Interventions Groups		Control Groups	
	f	%	f	%
Duration of Illnes				
<1 Month-1 Years	10	40	12	48
1- 2 Years	4	26	9	36
2- 4 Years	2	8	0	0
3- 5 Years	3	12	3	12
>5 Years	6	24	1	4

The majority of respondents in both groups were between the ages of 40-50 and 60-70, with 9 people (36%) in the intervention group and 8 people (32%) in the control group. Most respondents were Muslim, with 56% in the intervention group and 64% in the control group. Javanese ethnicity was predominant in both groups with 48% in the intervention group and 56% in the control group. The education of the breast cancer respondents was mostly senior high school graduates with 48% in the intervention group and 60% in the control group. The occupation of most respondents was housewife, 72% in the intervention group and 84% in the control group. Most respondents were in stage 4 with 54% in the intervention group and 60% in the control group. Duration of breast cancer majority lasted less than 1 month to 1 year, with 40% in the intervention group and 48% in the control group.

Table 2
Mean diffrence in psychological distress (anxiety) scores of control and intervention groups

Anxiety Variable	N	Mean	Standar Deviasi	95% Confidence Interval	
				Lower	Upper
Intervention group					
Pre test	25	8.56	3.070	7.29	9.83
Post test		4.40	1.893	3.62	5.18
Control group					
Pre test	25	7.44	3.380	6.04	8.84
Post test		7.20	2.195	6.00	8.40

The mean psychological distress (PD) anxiety of the intervention group before being given supportive care interventions was (mean = 8.56; SD = 3.070) with a 95% confidence value in the range of 7.29-9.83, while the mean after being given supportive care interventions was (mean = 4.40; SD = 1.893) with a 95% confidence interval in the range of 3.62-5.18. The mean psychological distress (PD) anxiety of the control group before routine care was (mean = 7.44; SD = 3.380) with a 95% confidence interval in the range of 6.04-8.84, while the mean PD anxiety in the control group after the post-test was (mean = 7.20; SD = 2.915) with a 95% confidence value in the range of 6.00-8.40.

Table 3.

Mean difference in psychological distress (Depression) between control and intervention groups

Depression variable	N	Mean	Standar Deviasi	95% Confidence Interval	
				Lower	Upper
Intervention Group					
Pre test	25	6.52	2.535	5.47	7.57
Post test		3.28	1.838	2.52	4.04
Control Group					
Pre test	25	6.60	2.887	5.41	7.79
Post test		6.40	3.814	5.24	7.56

The results showed the mean value of depressive PD in the intervention group before being given supportive care interventions (mean=6.52; SD=2.535) with a 95% confidence interval

in the range of 5.47-7.57, while after the intervention the mean value (mean=3.28; SD=1.838) with a 95% confidence value in the range of 2.52-4.04. The mean value of depressive PD in the control group before routine care (mean=6.60; SD=2.887) with 95% confidence interval in the range of 5.41-7.79, while the mean depressive PD after routine care (mean=6.40; SD; 2.184) with 95% confidence value in the range of 5.24-7.56.

Table 4.
Normality test

Anxiety	Statistic	Df	Sig.
Interventions Group			
Pre test	0.920	25	0,052
Post test	0.956	25	0,340
Control Group			
Pre test	0.971	25	0,159
Post test	0.900	25	0,230
Depression	Statistic	Df	Sig.
Intervention Group			
Pre test	0.933	25	0,101
Post test	0.957	25	0,355
Control Group			
Pre test	0.971	25	0,683
Post test	0.968	25	0.757

Based on the results of normality test using Shapiro-Wilk test. The significance value of anxiety before and after being given supportive care interventions in the intervention group obtained a value of P=0.052 and P=0.340 (>0.05), while in the control group the value of P=0.159 and P=0.230 (>0.05). The significance value of depression before and after being given supportive care interventions in the intervention group obtained a value of P=0.10 and P=0.355 (>0.05), while the control group had a value of P=0.683 and P=0.584 (>0.05), it can be concluded that psychological distress data (anxiety and depression) before and after supportive care interventions in the intervention and control groups are normally distributed.

Table 5.

Variable		Control Group		Mean diff	95% CI		p value
		Mean	SD		Lower	Upper	
Anxiety	Pre-test	7.44	3.380	0.240	-0.123	0.603	0.185
	Post-test	7.20	2.915				
Depression	Pre-test	6.60	2.887	0.220	-0.115	0.515	0.203
	Post-test	6.40	2.814				

Psychological distress Before and After Routine Care in the Control Group (n=25)

The average score of psychological distress (PD) (anxiety) before the intervention in the control group is (mean = 7.44; SD = 3.380), while the average score of PD anxiety after the intervention is (mean = 7.20; SD = 2.195) with a 95% confidence value in the range -0.123-0.603 and a mean difference of 0.240. Statistical results obtained p value = 0.185 (> 0.05), it can be concluded that there is no effect of routine care on psychological distress before and after the intervention in the control group. The results of the analysis of the mean score of psychological distress (depression) before and after the intervention in the control group. The mean value of PD depression before routine care (mean = 6.60; SD = 2.88) and after routine care (mean = 6.40; SD = 2.81). with a 95% confidence value in the range -0.115-0.515 and a mean difference of 0.220. The statistical results obtained p value = 0.203 (>0.05), it can be concluded that there is no effect of routine care on psychological distress (depression) before and after in the group.

Table 6.
Psychological Distress (Anxiety) Before and After Supportive care interventions in the
Intervention Group (n=25)

Variable		Intervention Group		Mean diff	95% CI		p value
		Mean	SD		Lower	Upper	
Anxiety	Pre-test	8.56	3.070	4.160	3.458	4.862	0.001
	Post-test	4.40	1.893				
Depression	Pre-test	6.52	2.535	3.240	2.606	3.874	0.001
	Post-test	3.28	1.838				

The average value of psychological distress (anxiety) in respondents with breast cancer before and after being given supportive care interventions is (Mean = 8.56; SD = 3.07 and Mean = 4.40; SD = 1.89) with a 95% confidence value in the range of 3,458-4,862 and a Mean difference of 4.160. Statistical results show a value of p = 0.001 (<0.05), it can be concluded that there is an effect of supportive care interventions on psychological distress (anxiety) in the intervention group. The mean value of psychological distress (depression) in respondents with breast cancer before and after being given supportive care interventions is (mean = 6.52; SD = 2.53 and mean = 3.28; SD = 1.83), 95% confidence value in the range of 2.606-3.874 and difference in mean 3.240. Statistical results obtained p value = 0.001 (<0.05), it can be concluded that there is an effect of supportive care interventions on psychological distress (depression) in the intervention group.

Table 7.
Comparison of effectiveness of supportive care interventions between control and
intervention groups on psychological distress

Gain score	Group	N	Mean	Standar Deviasi	p-value
Anxiety	Intervention	25	4.16	1.700	0.001
	Control	25	0.24	0.879	
Depression	Intervention	25	3.24	1.535	0.001
	Control	25	0.28	0.764	

The results of the analysis using the independent t-test showed that there was a difference in the mean value of psychological distress after being given supportive care interventions between the control and intervention groups, the mean value of psychological distress (anxiety) was higher in the intervention group than the control group, namely (Mean = 4.16; SD = 1.700 and Mean = 0.24; SD = 0.879). The static results obtained p value = 0.001 (<0.05), it can be concluded that there is a significant difference in psychological distress (anxiety) after being given supportive care interventions between the intervention group and the control group. The mean value of depressive PD in the supportive care interventions group is higher than the control group, namely (Mean = 3.24; SD = 1.535 and Mean = 0.28; SD = 0.746). The results obtained showed there was a difference in psychological distress (depression) after supportive care interventions between the two groups with a value of p=0.001 (<0.05).

DISCUSSION
The results showed that supportive care interventions (SCI) effectively reduced symptoms of psychological distress (PD) in breast cancer patients compared to the control group. There is a significant difference in psychological distress (anxiety) after receiving SCI compared to psychological distress (anxiety) in the control group, which only received intervention according to hospital standards. While the symptoms of psychological distress (depression) there is also a significant difference after being given supportive care interventions compared to the control group, which is only given interventions according to hospital standards. This study is consistent with previous research, the effect of supportive care interventions in dealing with psychological distress in Latin women with breast cancer, with an intervention program lasting 6 months. The results of the study were the effectiveness of supportive care

interventions on psychological distress (anxiety and depression) in Latinas with breast cancer (Badger et al., 2020).

In another study explained, digital-based Supportive care interventions (SCI) with interventions in the form of health education, psychotherapy, nursing support, remote exercise and rehabilitation programs, the results of SCI research have an influence in improving quality of life and other psychological symptoms such as psychological distress, pain, fatigue and depression (Marthick et al., 2021). Another study explained the effectiveness of suppotive care interventions in improving quality of life and psychological symptoms such as psychological distress in patients living with metastasized breast cancer. Researchers used a systematic review design, with the results of the study that supportive care interventions were effective in improving quality of life and managing psychological symptoms and physical symptoms in breast cancer patients (Keane et al., 2023). Research conducted (Cabanes et al., 2022) using a scoping review research design conducted in middle and low income countries, describes several interventions such as health education, symptom management and psychosocial support as supportive care interventions implemented in cancer patients, The results showed a decrease in depression and anxiety, an increase in the quality of life of breast cancer patients. The relationship between psychological distress (PD) and breast cancer is also due to the fact that patients suffering from breast cancer must go through various stages such as examination, receiving a diagnosis, understanding the prognosis, undergoing treatment, facing side effects, the risk of relapse and uncertainty about the future. All these processes can trigger psychological distress. Psychological symptoms that may arise include stress, difficulty adapting, anxiety, depression, impaired cognitive function, sleep problems, changes in body image, sexual dysfunction, and a general decline in health (Penberthy et al., 2023).

CONCLUSION
Research conclusions there is an effectiveness of supportive care interventions on psychological distress in breast cancer patients. Supportive care interventions (SCI) can be an innovative program for nurses in providing comprehensive care, especially for breast cancer patients. In addition, SCI can also be implemented by all health workers to improve the overall well-being of breast cancer patients.

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