

THE BENEFIT OF MINDFULNESS TRAINING TO REDUCE ANXIETY FOR CANCER PATIENTS WITH CHEMOTHERAPY

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ABSTRACT

Anxiety can impair the ability of cancer patients to run chemotherapy. Mindfulness training with meditation methods can improve empathy for self in activating affective, cognitive, moral, intra and interpersonal dimension so as to decrease anxiety especially in cancer patient who will undergo chemotherapy. The purpose of this study was to determine the benefits of mindfulness training in reducing anxiety in cancer patients with chemotherapy. The research method used Quasi experiment design with pretest and posttest control group design, in 60 samples taken at Indonesia Cancer Foundation in Yogyakarta, analyzed with Mann Whitney z distribution test for category ordinal and t-test data for experiment and control group differences. The results showed most of the characteristics of age >40 years and female gender with breast cancer type. Conclusions were obtained, mindfulness training can provide benefits for cancer patients in achieving relaxation in order to reduce anxiety when faced with treatment with chemotherapy action, thereby raising awareness to better accept the situation conditions that are happening. Suggestions that health care workers both nurses and doctors can train patients who experience anxiety in the face of chemotherapy or other invasive measures.

Keywords: Mindfulness, anxiety, cancer patients

A. Background

Cancer is one of the non-communicable diseases that is the leading cause of death worldwide. Because of its malignant nature grows uncontrollable and causes death, the cancer is also referred to as malignant disease and cancer cells are also

called malignant cells. All body cells can be affected by cancer except hair, teeth, and nails (Samantha, W. 2015).

According to data from the Ministry of Health, cancer is the number 7 cause of death in Indonesia. Breast cancer is ranked second only to women after cervical cancer, and is

the leading cause of death in women. The area with most cancer patients in Indonesia is Yogyakarta. In Indonesia, the prevalence of cancer in all age groups is 0.14%. Types of cancer that often attacks are lung cancer, breast cancer, liver cancer, and cervical cancer. In DIY province the highest prevalence was 0.41%. Of the many types of cancer, cervical cancer and breast occupy the highest order in Indonesia. Daerah Istimewa Yogyakarta has the highest number of cervical cancer patients in Indonesia (Depkes, 2010). Province with highest prevalence of prostate cancer is D.I. Yogyakarta, Bali, North Sulawesi, and South Sulawesi at 0,5 %, whereas based on estimation of prostate cancer patients in East Java and Central Java Province (Pamungkas, 2011).

For example, breast cancer treatment in addition to breast self-care programs is also required adherence to cancer patients in chemotherapy, because both of these in the long term can reduce morbidity and mortality of the sufferer. Obediently continuing the chemotherapy program can inhibit

and kill cancer cells and reduce the risk of death (Nikbakhsh, N., et al., 2014). Chemotherapy is used in the early stages to control cancer cells that may still be left behind after surgery, and to reduce the risk of cancer coming back, in some cases chemotherapy is given after surgery is called chemotherapy (adjuvean), some are given before surgery aims to shrinking cancer and this is commonly called (non-adjuvean) (Narod, et al., 2013; Pamungkas, 2011).

Anxiety is one of the common psychological states that occur because of the unpleasant experience experienced by every human being, so it is not surprising that anxiety occurs in people with physical disorders, with up to 50% of medical patients reporting clinically anxiety. Anxiety is also a state of worry, nervousness or fear when faced with a difficult experience in one's life and assumes that something bad will happen. The anxiety symptom is very different and varies for each individual. Symptom anxiety can disrupt the quality of life of a person because it can affect a person's ability

to run various activities (Khalil., et al, 2014).

One approach to therapy that can deal with anxiety is cognitive-behavioral therapy by developing a more adaptive way of thinking that is mindfulness. Mindfulness has in common with cognitive and behavioral alignments in some ways, including cognition changes as a result of observing the mind as a momentary phenomenon without meaning, not as an accurate reflection of reality. Mindfulness is a form of mind meditation that involves focusing on every event of all life experiences regardless of whether the experience is great or just mediocre. Mindfulness training is a method of meditation that can enhance empathy and consists of a combination of affective, cognitive, moral, intrapersonal and interpersonal dimensions (Simkin, & Black, 2014).

Nikbakhsh, et al., (2014) explains the training of mindfulness will cause the individual to learn to realize the current experience with openness and curiosity, accepting the life experience as it is without the desire to judge or change it.

Mindfulness training teaches individuals to develop the ability to manage the transfer of center of awareness / attention from one target to another and to observe their mental state. The main view of the mindfulness method is our own mind that shapes the world, and it has some similarities with the view of cognitive behavioral theory. In the study Rosenzweig also proved that the method of mindfulness can reduce depression, anxiety and psychological stress in people with type 2 diabetes. The mindfulness approach is also based on aspects of cognition and behavior but with different development. The training of mindfulness program used in the study was adapted from mindfulness program designed by Jon Kabat-Zinn. This research was conducted at Indonesian Cancer Foundation in Yogyakarta.

The purpose of the study was to determine the benefits of mindfulness training in reducing anxiety pada cancer patients with chemotherapy. While the specific purpose is to know the characteristics of cancer patients who do

chemotherapy, knowing the difference in anxiety of cancer patients undergoing chemotherapy, and know the difference in mean anxiety as the effect of training training mindfulness.

B. Theoretical Review

Chemotherapy is a treatment action using drugs given orally or injected. Chemotherapy commonly uses high-dose drugs that work inside cells. Chemotherapy aims to weaken cancer cells and inhibit division or even kill cancer cells (Nurcahyo, 2010 & Narod, et al., 2013).

Chemotherapy treatment is usually used to prevent cancer cells from growing and spreading by destroying their cells or stopping them from breeding. Chemotherapy weakens and destroys cancer cells in native sites and cancer cells that grow rapidly throughout the body (Narod, et al., 2013).

Side effects of chemotherapy according to Nurcahyo (2010) & Narod, et al., (2013) are: Limp, nausea and vomiting, indigestion, sprue, hair loss, muscle and nerves, effects on blood, skin can become dry

and change color more sensitive to the sun, hormone production decreases sexual appetite and fertility is caused by changes in self-actualization and the effects of chemotherapy drugs such as vomiting, nausea, and dizziness.

Cancer is known to be a group of diseases characterized by uncontrolled growth of certain body cells that result in damaging other cells and tissues, often even ending deaths (Maraz, et al., 2014). Cancer is one of the non-communicable diseases that is the leading cause of death worldwide. Because of its malignant nature grows uncontrollable and causes death, the cancer is also referred to as malignant disease and cancer cells are also called malignant cells. All body cells can be affected by cancer except hair, teeth, and nails (Khalil, A., et al., 2016).

C. Research methodology

This type of research is Quasi experiment using pretest and posttest control group design. To know the difference of anxiety that occurred because of the influence of the

treatment, the design was made two groups: the experimental and control groups were selected similarly cited in Shadish, Cook, & Campbell, (2002). The population is all cancer patients who underwent chemotherapy at Yayasan Kanker Indonesia in Yogyakarta for 2 consecutive months.

The sample size of 60 respondents included 30 treatment groups and 30 controls. Sampling with probability sampling technique is simple random sampling through lottery method. The technique is as follows: after determining the number of samples, the researcher along with the enumerator conducts a draw to select respondents on each cancer patient who will perform chemotherapy. Patients selected and willing to subsequently sign informed consent. The determination of the experiment and control group was conducted at different times and places.

The data analysis was Mann Whitney test because it tested experimental and control group. In the categorical data Mann Whitney test, while the numerical data t-test.

D. Result

Characteristics of respondents who participated in this study can be seen in the following table:

Table 1. Distribution of Respondents by Age and Sex

Variable	Category	Experiment (n=30)		Control (n=30)	
		f	%	f	%
Age	<40	9	30	7	23,3
	>40	21	70	23	76,7
Sex	M	4	13,3	6	20
	W	26	86,7	24	80

Age of respondents >40 years most 21 respondents (70%) in the experimental group, as well as control group >40 years 23 respondents (76.7%). The most sexes in the experimental group were women (26,6%), and 24 respondents (80%).

Table 2. Frequency Distribution of Mindfulness Training and Type of Cancer

Variable	Category	Experiment (n=30)		Control (n=30)	
		f	%	f	%
Training participation	Ever	3	10	4	13,3
	Never	27	90	26	86,7
Type Ca	Breast Ca	24	80,2	24	80,2
	Blood Ca	3	10	2	6,6
	Prostat Ca	2	6,6	2	6,6
	Skin Ca	1	3,2	2	6,6

The highest number of mindfulness training in the category was never 27 respondents (90%) in the experimental group, as well as the control group of 26 respondents (86.7%). The most cancer types in the experimental group were breast cancer, 24 respondents (80.2%), also

in the control group of 24 respondents (80.2%).

The data were analyzed with chi-square test to determine the relationship or differences between experimental and control groups based on age, sex, participation in mindfulness training, and type of cancer.

In the pre-test, the test p value of Mann Whitney is 1,000 so $> \alpha$ (0,05). This means there is no difference in pretest anxiety between experimental and control groups. While the post-test p value of Mann Whitney test of 0.000 so that $< \alpha$ (0,05). This means that there is an anxiety post-test difference between the experimental and control groups.

The mean value of t-test of experimental group was 52.2 while the control group was 38.2. That is, the control group has higher anxiety than the experimental group.

Nilai p uji t sebesar 0,896 sehingga $> \alpha$ (0,05). Artinya tidak terdapat perbedaan pre-test kecemasan antara kelompok eksperimen dan kontrol. Sedangkan nilai p uji t sebesar 0,000 sehingga $< \alpha$

(0,05). The p value of t test is 0.896 so that $> \alpha$ (0,05). This means there is no difference in pre-test anxiety between the experimental and control groups. While the p value of t test is 0.000 so that $< \alpha$ (0,05). That is, there is an anxiety post-test difference between the experimental and control groups.

The delta value is searched by subtracting the post and pre values. The post test group experimental score was greater than the control group (52.20 > 38.43). Bigger scores indicate an increasingly low anxiety, because the scores answer respondents 1 = anxious and 2 = not anxious.

Pre-test and post-test data in the experimental and control group can be seen in the following graph:

Graph 1. Distribution of Respondents to Pre-Test Experiments and Control Groups



Graph 2. Distribution of Post-Test Respondents Experiment and Control Group



E. Discussion

Age of respondents > 40 years was the most age group (70-76,7%) in both study groups. Similarly, the most sexes in the experimental group were women, 26 respondents (86.7%), also in the control group of 24 respondents (80%). Previous epidemiological studies have shown that the age of cancer patients in Indonesia is younger than in developed countries. More than 30% of cases are found in patients aged 40 years or younger, while in developed countries, patients less than 50 years old are only 2-8% (Nurchahyo, 2010). Similarly, the Jakarta Cancer Registry, that colorectal cancer ranks fourth for cancer that attacks women (3.15 per 100,000) and ranks second (4.13 per 100,000) for cancer affecting males.

The age and sex of the respondents in this study were the most at age above 40 years and occurred in women. Data proves that

in Indonesia especially Yogyakarta breast cancer and cervical cancer ranks highest and based on age occurs at age above 50 years. Shelter home at the Foundation Cancer Indonesia in Yogyakarta provide facilities to cancer patients to be able to stay in the shelter house at a very low cost and generally the cancer patients who use the shelter is an elderly woman because they feel closer to the source of health services that is House Pain Sarjito when having to do chemotherapy.

Mindfulness training is very rare in Yayasan Kanker Indonesia in Yogyakarta especially in shelters, so it is one of the reasons to conduct mindfulness training in reducing anxiety of cancer patients undergoing chemotherapy, so that pre-test data is obtained 90% of respondents have never attended the training. Based on the above number of breast cancer cases 24 respondents (80.2%) in the experimental group and 24 respondents (80.2%) in the control group, ranks highest compared to other types of cancer.

To determine the relationship or differences between experimental

and control groups based on age, gender, participation of mindfulness training, and type of cancer, chi-square test was performed. The test results obtained p value on the variable age, gender, training participation and type of cancer is greater (> 0.05) means there is no difference between the experimental group and the control on the data.

On the difference in anxiety as the effect of training in mindfulness, the most appropriate statistical test on the data is Mann Whitney, because the data of anxiety includes the type of ordinal categorical data. Therefore, the data were analyzed with Mann Whitney. However, as a result comparison, t tests were conducted between the experimental groups and the controls.

The result of pre-test that the test p value Mann Whitney equal to 1,000 so $> \alpha (0,05)$. That is, there is no difference in pretest anxiety between experimental and control groups. While the post-test p value of Mann Whitney test of 0.000 so that $< \alpha (0,05)$. This means that there is an anxiety post-test difference between the experimental and control groups.

According to Khalil, A., et al. (2016), that anxiety will increase in people who have cancer because the treatment process panjang and expensive, so it requires patience and awareness of patients to remain on medical treatment lines.

Supporting the results of research Shader, & Taylor, (2017), that individuals who experience health problems are susceptible to psychological problems, such as anxiety. High and prolonged anxiety can exacerbate the illness suffered. Similarly Simkin, & Black, (2014), explains that mindfulness training can reduce anxiety because it provides morning relaxation for people with health problems.

The benefits of mindfulness training include being able to reduce feelings of suffering and achieve a feeling of comfort and prosperity in every situation and condition. Likewise mindfulness can cultivate an appreciation of self and others, so that everyone does not blame themselves and reduce feelings of guilt.

On the difference of average anxiety in experiment and control group. Result of difference test of

anxiety average in experimental group 52,2 while control group 38,2. That is, the control group had higher anxiety than the experimental group. The data suggest that experimental groupings that were intervened with mindfulness training were less anxious than those in the control group. As research results, Maráz's, et al. (2014), that patients who have cancer and are undergoing chemotherapy desperately need peace of mind and a state to be able to accept consciously that chemotherapy is part of the expected healing. Similarly, anxiety experienced by patients with blood cancer or childhood leukemia is anxiety severe, moderate and mild. The effect of vigilance training on anxiety reduction in cancer patients or leukemia to moderate and severe anxiety levels becomes lighter.

At value p t-test equal to 0.896 so that $>\alpha$ (0,05). This means there is no difference in pre-test anxiety between the experimental and control groups. While the p value of t test is 0.000 so that $<\alpha$ (0,05). That is, there is an anxiety post-test difference between the experimental and control

groups. The differences experienced by the experimental group are the benefits or effects of the provision of mindfulness. Thus it can be concluded based on the average results that training mindfulness can provide benefits for cancer patients in reducing anxiety in the face of treatment with chemotherapy measures.

F. Conclusions & Suggestions

Chemotherapy measures in cancer patients have not been fully accepted by cancer patients, so the action becomes a separate stressor for the concerned. In general patients who have undergone chemotherapy, experience anxiety that may interfere with the procedure of treatment, so this should be anticipated.

Mindfulness training is very rarely performed at the Indonesian Cancer Foundation in Yogyakarta, especially in shelter homes, so it is one of the reasons to do mindfulness training in reducing the anxiety of cancer patients undergoing chemotherapy.

Mindfulness training can benefit cancer patients in achieving relaxation in the face of treatment

with chemotherapy, thereby raising awareness to better accept the current situation.

In order to raise awareness of chemotherapy in cancer patients, before chemotherapy, patients can be mindfulness for themselves.

Mindfulness training is very simple but great benefits, so it is expected to be mastered by every health officer, especially doctors and nurses in order to train patients according to their needs.

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