Effectiveness of Aromatherapy for the Fulfillment of Sleep Quantity of Cancer Patients in West Nusa Tenggara Provincial General Hospital

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Abstract. The sleeping patterns of cancer patients can be interrupted due to physical illness due to cancer, pain, side effects of drugs or other cancer therapies so that it can affect the quality of life, immune system, and cognitive ability of the patient. The effort to overcome the lack of sleep needs is with aromatherapy as it can increase alpha waves thereby making the body more relaxed. The purpose of this research is to analyze aromatherapy administration on the fulfillment of sleep quantity in cancer patients. This study used a quasy experiment design with control group. Sampling by purposive sampling amounted to 30 respondents. The independent variable is aromatherapy with 3 variants of peppermint, green tea and lavender and the dependent variable is the quantity of sleep of cancer patients. Data analysis using Wilcoxon Test. Aromatherapy Statistical test Results $P = 0.001$ value and control group $P = 0.008$. Aromatherapy delivery provides better sleep effect than patient control because aromatherapy can activate neurotransmitters in the hypothalamus and regulate neuroreceptor in the immune system, change in mood, reduce anxiety and reduce stress thereby causing the body to be relaxed and the need to sleep cancer patients fulfilled. Aromatherapy needs to be given to cancer patients.

Keywords: aromatherapy, Sleep disorders, cancer

1. Background

Insomnia is a common sleep disorder in cancer patients. The sleep patterns of cancer patients can be interrupted due to physical illness due to cancer, pain, drug side effects or other cancer therapies (e.g., nausea, vomiting, diarrhea), environment (temperature and room noise), lifestyle (diet, exercise, sleep routine, Emotional state), and the psychological effects of cancer (National Cancer Institute, 2014). Patients who are sick often need more sleep and rest than in healthy patients and usually diseases prevent some patients from getting adequate sleep and rest. The hospital's environment or long-term care facilities and service givers often make patients sleeplessness (Perry, 2005).
The International Agency for Research on Cancer says that the World Health Organization (WHO) estimates that there are 18.1 million new cancer cases and 9.6 million deaths occurring in 2018 (Juniman, 2018). Based on RISKESDAS data Ministry of Health 2018, that the prevalence of tumor or cancer in Indonesia showed an increase from 1.4 per 1000 inhabitants in 2013 to 1.79 per 1000 population in 2018. While in West Nusa Tenggara itself based on the statement of Director of West Nusa Tenggara Provincial Hospital, Dr. H. Then Hamzi Fikri said that the number of cancer patient visits in West Nusa Tenggara amounted to 28,643 people with a visit figure of 120 cancer patients per day. In 2015 the number of cancer patient visits in West Nusa Tenggara amounted to 28,643 people with a visitation rate of 120 cancer patients per day (Fitri, 2018).

Sleep disorders can be prevented if known cause that is behind the sleep disorder, so that the quality of life can be maintained. The research was conducted to find out how much aromatherapy is affected in overcoming sleep disorders in cancer patients. Research conducted by Krisdhinyanti (2016), at the General Hospital of Dr. Hasan Sadikin Bandung on the quality of sleep in breast cancer patients undergoing chemotherapy received results from 83 patients undergoing chemotherapy, as much as 44.58% of subjective sleep assessments were quite poor, sleep latency (63.86%), during daytime dysfunction (53.01%). According to pratiwi research, T. Dwinda (2016), that insomnia (66.67%) and Circadian Rhythm disorders (57.33%) is a type of sleep disorder experienced by breast cancer patients undergoing chemotherapy. The perceived sleep disorder is Restless Legs Syndrome (44.0%), sleep apnea (34.67%), and narcolepsy (23.33%). In other studies also mentioned in 300 sufferers of breast cancer known to be 51% experiencing sleep disorders, while 19% were diagnosed with insomnia. Patients with breast cancer, especially at stage 4 are very susceptible to sleep disorders.

Results of preliminary studies conducted by researchers through interviews to 5 patients of breast cancer at Segara Anak in West Nusa Tenggara Provincial General Hospital said that they complained of sleep disturbance in the area because some things like the feeling of heat in the body, taste Pain suffered and worried about thinking about the disease. They also say that the night is a lonely condition that makes them often remember the illnesses that are being suffered today and that causes the respondents to be difficult to start sleeping and often wake up in the evening until the morning feels Dizziness and increased blood pressure. At the time of the interview seemed to look blackish on the area around the eye and often evaporate.

The effort done to overcome insomnia problems is to use aromatherapy, using aromatherapy can alleviate symptoms – symptoms such as: insomnia, pain, and anxiety (Melissa, 2004). The essential oils used in aromatherapy usually spread a fragrant smell, in the form of volatile fluids and help the body cope with the burden thereby causing easy sleep. According to Huch (2006), odors does have a direct influence on the brain. The nose-inhalation scent is going through cilia or fine feathers in the nose. Odors converted cilia into electrical impulses emitted to the brain. These impulses then reach the limbic system, which is part of the brain related to mood (mood), emotion, and memory e.g. lavender is useful for soothing, comfortable feeling, openness, conviction, love, relieves headaches, stress, Frustration, treating panic, dampening hysteria, and treating insomnia.

2. Ingredients And Methods

Design of this research is Quasy Exsperiment (One Group Pre – Post Test Design With Control) design, which aims to see the effect of aromatherapy on quantity of sleep disorder designed by researchers. In this research begins with pre test before being given treatment using a checklist or observation sheet The quantity of sleep is then measured back at the time of post test using the same instrument. The population in this study is a cancer patient in the West Nusa Tenggara Provincial Hospital. The sampling techniques used in this research are using purposive sampling methods. The large sample in this study is 30 which is divided into 15 aromatherapy groups and 15 respondent
controls that meet the inclusion criteria i.e. the general circumstances are good, experiencing sleep impairment, and cooperative. Total Care exclusion criteria, experiencing decreased consciousness, has an allergy to aroma.

The independent variable in this study is aromatherapy and the dependent variable is the fulfillment of the needs of sleep cancer patients. Time and place of research in the room of Gili Moyo, Gili Gede, Segara Anak in August until November 2019, which begins with an ethical clearance test and permits according to the prescribed procedures.

The Data in this study was collected by using an instrument checklist to fulfill the sleep quantity of cancer patients. Respondents were given aromatherapy every night before bedtime for 3 consecutive days in the areas of the hands and neck according to the scent preferred and chosen. After 3 days of fulfilling the quantity of sleep respondents were measured again using the same instrument.

3. Results

Results of univariate analysis get the average age group of respondents cancer patients the largest group of age ≤ 50 years, namely 17 people (56%). The largest group of female respondents was females with a percentage of 90% and the remaining men were 10%. The distribution of respondents based on the most types of cancer is suffering from Ca Cervix as much as 33.3% and least is suffering from ovarian Ca as much as 16.6%. The distribution of respondents with a family history of cancer is only 2 people or 7% compared to no family history of 93%. The distribution of respondents based on the stage of cancer suffered most is stage III of 43.33%.

Bivariate analysis of sleep quantity of the respondent who suffered from cancer before given aromatherapy identified using the Sleep checklist is a category as much as 3 org or 20%, with a bad category 11 people or 73%, 1 person with category Very bad or 6%. The quantity of sleep group control respondents before being administered placebo therapy with a category of enough 2 people or 13%, bad 13 people or 87%. Identify the quantity of sleeping respondents after aromatherapy with either a category of 4 or 26%, a category of enough 7 people or 46%, and 4 people bad category or 26% as well. Identify the quantity of sleep of respondents after aromatherapy with a category of enough as much as 9 people or 60% and with a bad category of 6 people or 40%.

Based on the results of the test statistical analysis Wilcoxon Signed Rank Test obtained the results as shown in the table 1 below:

<table>
<thead>
<tr>
<th>Sleep Quantity</th>
<th>n</th>
<th>Mean Rank Negative</th>
<th>Asymp. sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aromatherapy Post Test-</td>
<td>15</td>
<td>4</td>
<td>0.001</td>
</tr>
<tr>
<td>Pre Test</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control post-test-pre</td>
<td>15</td>
<td>6.5</td>
<td>0.008</td>
</tr>
<tr>
<td>test</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 1. The Result of The Test

Based on the table 1 above shows that the result of the calculation of Wilcoxon Signed Rank Test with P value (Symp. Sig. (2-tailed) can be concluded in each group, namely Aromatherapy 0.001 (P < 0.05) decline in the Zero hypothesis (H0) with the conclusion there are differences in results before and after given aromatherapy in this group treatment against the quantity of sleep. The control group with significance value 0.008 (P < 0.05) which means rejecting the zero hypothesis (H0) with
conclusions there are also differences in results before and after regular intervention before bedtime in this group against the quantity of sleep.

4. Discussion

Based on the results of the study showed that the sleep quantity of cancer patients consisting of prolonged sleep in 24 hours, vital signs such as blood pressure, pulse and respiratory experience a significant decline with a good enough change that is 0.001. In this research the most widely used aromatherapy by respondents is aromatherapy Lavender. Aromatherapy Lavender comes from a part of flowers and a efficacious petal to harmonize, relieve, freshen, balance, relax and soothe. Lavender oil is used to aid in relieving sore muscles, bites, stings, insomnia cures, headaches etc. (Kurnia, Wardhani, & Rusca, 2013). In NREM or Non REM sleep stage, a person's body will experience a state of calm, pulse, breathing and blood pressure will move more calmly and regularly. Maifrisco (2005) reveals the active components contained in aromatherapy especially lavender are free linalool or as esters with aseta acid, butyric, valerianate, and caproate. The difficulty of sleeping can be assisted with a levender aroma because it enhances the alpha waves in the brain and this wave helps to create a relaxed state. According to Faridah (2014), the theory strengthens that aromatherapy in particular aromatherapy lavender positively affects the disturbance of sleep needs, this response is possible because when inhaling one's aroma becomes more comfortable and relaxed.

The physiological benefits of aromatherapy include increasing circulation, both blood and lymph (thus helping to remove toxins from the body), slowing the frequency of the pulse, lowering blood pressure, relaxes tense muscles, strengthening weak muscles and less motion and overcoming cramping conditions. Masase can be performed on the whole body or on specific areas such as hands, neck/shoulders (Cochrane, 1993 in Synder & Lindquist, 2002). Inhaling aromatherapy with a favorite scent can increase alpha waves in the brain that can decrease the activity of vascular vasoconstriction, blood flow becomes smooth so that blood pressure is maintained normal (Jaelani, 2009).

Whereas based on the results of the study showed that the quantity of sleep control group is quite significant namely 0.008 means that there is influence of the effect of praying chosen by the respondent according to his individual belief on the quantity of his sleep. The control group is encouraged to pray before bedtime for its 3 consecutive days of treatment. The use of meaningful phrases can be used as a focus of confidence, so selected words have a depth of belief. Using words or phrases with special meaning will encourage a healthy placebo effect. The stronger the confidence of a person combined with the relaxation response, the greater the relaxation effect gained.

Based on the results shows that the aromatherapy group and the control group both have a value of P value of < 0.05 but the significant level is substantial in this aromatherapy group which means both aromatherapy and read prayers before bedtime in the control group can provide therapeutic effect to increase the sleep quantity of cancer patients. Some factors that affect both of them give the same effect that the Aromatherapy group of cancer stage is mostly advanced stage III and IV and a small part of the initial stage, it greatly affects the quantity of sleep of the patient because the perceived pain tends not to be controlled because it has metastases to other organs. While the selection of respondents in participating as respondents of treatment or control is performed randomly with no consideration of the condition of the patient in general either undergoing chemotherapy or undergoing general condition improvement therapy. The frequency of administration of chemotherapy alone can cause some effects that can exacerbate the functional status and often interfere with the patient's resting sleep pattern (Toulasik, 2019). In addition, some of the respondents in the control group who underwent increased sleep quantity change are those who have been diagnosed long enough to suffer from cancer even though the stage of cancer is varied, while those who are newly undergoing chemotherapy and are not yet long diagnosed are less likely to undergo sleep quantity change.
5. Conclusions

Based on the results of the study, can be concluded:

a. Quantity of sleep responders who suffer from cancer before being administered mostly by aromatherapy with bad categories

b. Quantity of sleep of respondents after being given aromatherapy mostly by categories category quite.

c. Aromatherapy Overcoming cancer patient sleep disorders.

6. Suggestions

The institutions of the West Nusa Tenggara Provincial Hospital need to review the SOP in relation to nursing care for the fulfillment of the patient's sleep needs by adding aromatherapy as one of the complementary therapies used in overcoming his sleep disorders.

Reference


journal of oncology nursing, 22(2).