

EFFECT OF ROSEMARY AROMATHERAPY (ROSMARINUS OFFICINALIS) TO MEMORY OF SHORT-TERM MEMORY IN ELDERLY

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Submitted :03-01-2018, Reviewed:09-01-2018, Accepted:14-03-2018

DOI: <http://doi.org/10.22216/jen.v3i2.3016>

ABSTRACT

Aromatherapy is a way of healing by using the concentration of highly aromatic essential oils that was extracted from plants. The purpose of this research is to identify the effects the provision of aromaterapy rosemary to short-term memory elderly. The design of this research is Quasi Experiment Design and research design of One Group Pre-test Post-test and sampling technique using Purposive Sampling. The population in this study were all elderly in Elderly Social Institution Sabai Nan Aluih Sicincin with a sample of 16 people. Data were analyzed by using Paired T-Test with significant value $\alpha = 0,005$. The results showed before giving rosemary aromatherapy average short-term memory of elderly is 24,31. The results after giving rosemary aromatherapy the average short-term memory of the elderly is 26.50. Bivariate results obtained p value 0,000. So it shows there is a significant difference of short-term elderly significant memory before and after giving aromatherapy to elderly. The influence aromatherapy rosemary can improve short-term memory in elderly. So that we hopes officer in the nursing home can collaborate with health worker specially nurses can increase their service to elderly, one of them is to apply non-pharmacological treatment to increase memory.

Keywords : Aromatherapy rosemary, Short-term memory, Elderl

INTRODUCTION

In improving the health of the elderly, Indonesia is undergoing a change of demographic structure over the past few decades. This is marked by a decrease in the proportion of young people (0-14 years), which at the same time increases the proportion of the elderly. Increasing the number of elderly population indirectly will bring challenges in various fields. In the field of health challenges that arise often relate to how to maintain the quality of life and health status of the elderly. In other words the elderly should be able to achieve

'optimal aging' in his life (Sundariyati dkk, 2014). Aromatherapy can provide a useful complementary medical service both in healthcare settings and in private practice, e.g. in cancer care, dementia, and depression.(Steflitsch & Steflitsch, 2008)

According to the World Health Organization (WHO), the elderly are a group of people aged 60 years or older. The

population of people aged 65 years and over now is already numbered 617 million people. This figure is equivalent to 8.5% of the total population of the world. Worldwide, life expectancy increased from 68.6 years (2015) to 76.2 years (2050). On average, people over the age of 80 are expected to triple from 126.5 million people to 446.6 million people worldwide (Lumbantobing, 2016).

Based on data from the Central Bureau of Statistics in 2014 the number of elderly in Indonesia approximately as much as 19,142,861 inhabitants. By 2015 the number of elderly is approximately 24,446,290 people and by 2020 it will increase to an estimated 29,021,128 people. Even in 2020-2025 Indonesia will be ranked nation with structure and number of elderly population after PRC, India, and United States, with life expectancy above 70 years (Nugroho, 2008). Some process and an area of the brain involved when individual the koran

and its relation to short-term memory. (Julianto & Etsem, 2011)

Statistical data of West Sumatera Province number of elderly in year 2014 counted 430.406 soul with details of man 190.387 soul and woman 240,019 soul. While the number of elderly in 2015 as many as 435,776 inhabitants with details of men 192,911 souls and women 242,865 inhabitants. Padang Pariaman District Health Office in 2015 the number of elderly is 47,547 souls with details of men as many as 20,834 people and 27,113 female. The number of elderly in Elderly Social Institution Sabai Nan Aluih Sicincin of 110 people with details of men 63 people and 47 women with an average age of 65 years.

In aging there is aging. Where this process is so natural that can not be avoided, running continuously, and continuously. The decline that occurs is cognitive abilities such as forgetfulness, decline orientation to time, space, place, and not easy to accept new ideas or ideas (Werdha et al., 2015)

Decrease in memory function is influenced by several factors, among others: Age, sex, physical activity and exercise, stress and depression. The inability to pay enough attention to information and encode it to short-term memory makes the elderly everyday activities difficult, so it often affects the social, psychological, and physical activity of the elderly. Psychically, this cognitive impairment can make the elderly become frustrated to depression (Sundariyati et al, 2014).

There are several methods to improve cognitive function, such as sports, brain gym, humor therapy, and aromatherapy. Aromatherapy is becoming increasingly popular due to technological advances. One of the most commonly used aromatherapy is Rosemary. Rosemary is believed to improve memory, concentration, and creativity (Nadya& Tan, 2012).

Inhalation of the rosemary essential oil increased the memorization of numbers, and inhalation of the lavender essential oil

weakened this process (Filiptsova, Timoshyna, Naboka, Dyomina, & Ochkur, 2017)

METHODS

This study discusses the influence of rosemary aromatherapy on short-term memory of the elderly at the TresnaWerdha Sabai Nan Aluih Sicincin Social House in February 2017. The population in this study is semua lansia in PSTW Sabai Nan Aluih Sicincin with a sample of 16 people.

The design of this research is Quasi Experiment Design and research design of One Group Pre- test Post-test and sampling technique using Purposive Sampling. Hypothesis test used is testdependent T-test. The instrument used in this research is Mini Mental State Examination (MMSE) checklist. (Notoatmodjo, 2010)

RESULT AND DISCUSSION

The result of analysis get the average age of all respondents is 68.88 with standard deviation 3,538 age minimum is 64 years and maximum 75 years. The results showed that respondents of male sex 6 people and female respondents as many as 10 people.

Table 1 shows that the mean differences in short-term memory of the elderly before and after aromatherapy were given 24.31 and 26.50. Standard deviations of short- term memory memory before and after treatment are 1.078 and 0.730. Value of pvalue = 0,000 for short- term memory measurement after rosemary aromatherapy.

Table 1. The results of short-term memory difference analysis before and after rosemary aromatherapy were given

Variable	N	Mean	Mean	SD	Min-	Pvalue
Short-term Memory			difference		Maks	
Pre test		24,31		1,078	23-26	
Post test	16	26,50	2,188	0,730	25-27	0,000

DISCUSSION

1. Univariate Analysis

The result of data analysis obtained the average short-term memory of elderly before given aromatherapy is 24,31 with standard deviation 1,078. The minimum and maximum value of short-term memory of the elderly is 23 - 26.

The process of aging is a natural process characterized by a decrease or changes in physical, psychological and social conditions in interacting with others. The aging process can decrease cognitive and dementia abilities (Umam and Handayani, 2014).

According to research Festi (2010) that the decreased ability of elderly cognitive function due to the central nervous system in elderly experience morphological and biochemical changes. According to the statement Hartono (2007) which revealed that the increase in age to make memory capacity began to decline naturally.

According to researcher assumption most of elderly difficulties in time orientation, place and recall. This happens because the elderly have experienced aging. In addition to aging, depression also affects short-term memory of the elderly. The elderly at the Tresna Werdha Social House has different backgrounds.

Many elderly are forcibly entered by their families. Even many who are not visited by his family. This can lead to depression in the elderly. Life it is different from life in the middle of the family. Loss of social and emotional support due to abandoned it tends to cause depression in the elderly.

The result of data analysis obtained the average short-term memory of elderly after given aromatherapy is 26,50 with standard deviation 0,730. The minimum and maximum value of short-term memory of the elderly is 25 - 27. Aromatherapy rosemary able to improve memory because it has a certain content. The content that plays a role in brain activity, namely 1.8-cineole. Through inhalation, the 1.8-

cineole contained in rosemary oil that is inhaled through the nose will be in contact with the olfactory cilia and binds to the receptor protein.

The impulse is passed to the olfactory bulb and the olfactory tract. The impulse then proceeds to the limbic system, the hippocampus as the center of memory, the hypothalamus and the amygdala as the center of emotion (Wahyuningsih, 2014).

In the hypothalamus will cause stimulation of the sympathetic nervous system. When the sympathetic nervous system is stimulated, the pulse rate will increase, cardiac muscle contraction also increases, resulting in increased cardiac output, one of which causes increased blood flow to the brain. The more oxygen and nutrients pumped into the brain, the more optimal the brain functions, especially in the process of memory formation. (Sinaga & Olivia, 2008)

This is in accordance with the statement of Moss et al (2003), that rosemary has been associated with improved cognition and memory and improved performance on cognitive assessment tests.

According to the researcher's assumptions, rosemary aromatherapy interventions given to the elderly who have mild cognitive impairment for 14 times can make the elderly more relaxed and calmer so that indirectly affect the cognitive side and effect on the improvement of short-term memory of the elderly.

2. Bivariate Analysis

The results showed the average increase in elderly memory before rosemary aromatherapy was 24.31 with a standard deviation of 1.078. Meanwhile, after breathing rosemary aromatherapy the average short-term memory of the elderly is 26.50 with a standard deviation of 0.730. Based on the results of the study, there was a significant difference between before and after rosemary aromatherapy.

There are many methods to improve

memory such as aromatherapy, humor therapy, memory therapy, memory training (Nadya and Tan, 2012). Aromatherapy is an essential oil that can cause various good effects, such as anti-inflammatory, antiseptic, stimulates appetite and stimulates blood circulation. One of the most commonly used aromatherapy is the rosemary plant. Rosemary can be trusted to improve memory, concentration, and creativity (Wahyuningsih, 2014).

Therefore, the essential oil of rosemary has significantly increased the image memory compared to the control. Inhalation of the rosemary essential oil increased the memorization of numbers as well. (Filipitsova, Timoshyna, Naboka, Ye, & Ochkur, 2017)

This is reinforced by research conducted by Umam and Handayani (2014), from 53 respondents got elderly before getting humor therapy that is 3 and maximum 14. The result of research interval interval concluded that 95% is believed the average short-term memory score is 10.27 - 12.07.

This is also reinforced by the research of Putra, et al (2014) where 14 respondents experienced an increase in the value of cognitive function after being given memory therapy. Analysis by using paired t- test statistic test obtained $p = 0,000$.

These results indicate that there is a significant influence between memory therapy on improving cognitive function in the elderly. Based on research conducted by Nadya and Tan (2012) with the title of rosemary aromatherapy effect on short-term memory in adult women obtained an increase in short- term memory score after inhaling rosemary essential oil. This can be seen from the average short-term memory score before inhaling aromatherapy of 53.47 (SD = 13.679) rose to 74.93 (SD = 13.874) after inhaling rosemary aromatherapy.

According to the researcher's assumptions, therapies that can improve the memory are essentially therapeutic interventions using stimuli that stimulate

happy expressions and have a positive impact and take place in a relaxed atmosphere. Before breathing rosemary aromatherapy many elderly people who experience impaired cognitive impairment such as forget the time and date, whether already eat and take medicine, forget to put personal items, difficulty composing sentences to speak and difficult to concentrate.

Elderly looks very difficult to interact with others. After the elderly inhaled rosemary aromatherapy 14 times by dripping 0.2 ml of rosemary oil on clean cotton, then inhaled through the nostrils with a distance of 2 cm for 5 minutes obtained an increase in short-term memory score of the elderly.

CONCLUSION

There is an influence of rosemary aromatherapy on short- term memory of elderly between first elderly memory measurement and second elderly memory measurement is 2,188 with standard deviation 0,834. The result of statistic test is P value 0,000. Thus, it can be concluded that there are significant differences and the influence of rosemary aromatherapy on short- term memory of the elderly before and after treatment. For the elderly should be able to be independent in using rosemary aromatherapy is more practical and easy to improve short-term memory.

ACKNOWLEDGEMENTS

Thanks, Fort De Kock Health Science College Bukittinggi. that has provided support in this research

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