



Effectiveness of Rosemary Aromatherapy Diffuser on Student Learning Outcomes in the Covid 19 Era

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ABSTRACT

In the field of education, Covid 19 has an impact on changes in learning methods and processes, making students often experience boredom, impaired concentration and stress, this can affect student learning outcomes. There are several alternatives that can be done as an effort to improve concentration in learning, one of which is the use of Aromatherapy. Rosemary can eliminate depression, stress, mental tension and lethargy. The purpose of this study was to determine the effectiveness of Aromatherapy Diffuser Rosemary on student learning outcomes in the Covid 19 pandemic era. This research is quantitative with a Quasi Experiment design. Data analysis uses univariate tests to measure variable frequencies. While the bivariate test uses the T-test. Respondents of this study were 100 3rd year students, consisting of students of DIII Midwifery, DIII Nursing and S1 Nursing Study Programs. The dose used was 6 drops of essential oil in a diffuser with 30 ml of water, for 30 minutes each meeting. And carried out for 2 months continuously.

Based on the results of the T-test conducted, it can be seen that the significance value is smaller than the alpha value ($0.000 < 0.05$). After the Rosemary Aromatherapy Diffuser intervention was carried out on students routinely in learning activities, respondents experienced an average increase in learning outcomes of 0.204. The results of this study indicate that there is an Effectiveness of Rosemary Aromatherapy Diffuser on Student Learning Outcomes in the Covid 19 Era.

Keywords: Aromatherapy, Covid 19, Diffuser, Learning Outcomes, Rosemary

INTRODUCTION

The Covid 19 pandemic is still a problem in all aspects, including health, economy, social, culture and education. In the field of education, Covid 19 has an impact on changes in learning methods and processes. Changes in the learning process make students often experience boredom, impaired concentration and stress, this can affect student learning outcomes (Dewi, & Prima, 2013).

There are several alternatives that can be done as an effort to increase concentration in learning, one of which is the use of Aromatherapy. Aromatherapy is one of the various complementary therapies that is growing fast and rapidly. The reason is, this treatment is classified as economical or does not require a lot of money, isaffordable and easy to do, (Olii, et al, 2022). Aromatherapy is a therapy that uses essential oils or pure oil essence as a medium to help improve or maintain health, arouse enthusiasm, refresh, and awaken the body and soul. Essential oils are used in the form of liquid distillates from various types of flowers, roots, trees, seeds, gums, leaves, and spices that function to treat (Dewi, & Prima, 2013).

Some of the benefits of aromatherapy include Overcoming insomnia and depression; relieve anxiety; Reduce feelings of tension; Improve the health and

well-being of the body, mind and soul; Maintain the stability or balance of the systems contained in the body to be healthy and attractive and Is a holistic treatment to balance all body functions (Setyohadi & Kushariyadi, 2011).

The mechanism of action of aromatherapy in the body takes place through two physiological systems, namely the body's circulation system and the olfactory system. Odor is a molecule that easily evaporates into the air and will enter the nasal cavity through inhalation so that it will be recorded by the brain as an olfactory process. The olfactory process is divided into three levels, starting with the reception of odor molecules in the olfactory epitallium which is a receptor containing 20 million nerve endings. Then the smell will be transmitted as a message to the olfactory center located at the back of the nose. At this place, neuron cells interpret the odor and deliver it to the limbic system. The limbic system is the center of pain, pleasure, anger, fear, depression, and various other emotions. then the response is sent to the hypothalamus for processing (Nugraha, 2018).

Based on research conducted by Hongwratanaworakit in 2009, Rosemary is proven to eliminate depression, stress, mental tension and lethargy. Wibowo

(2012) reported that Rosemary contains major-pineane, 1,8-cineole, and verbenine compound components. Meanwhile, according to Graber et al (2010), the main ingredients in Rosemary are -mirsen, camphor, -pineane, and 1,8-cineole. The compounds contained in Rosemary can differ depending on geographical location, soil conditions, genetic factors, plant parts, treatment in harvesting and storage (Arisanti, 2017).

When the essential oil is inhaled, the odor molecules contained in Rosemary will be received by the olfactory epithelium. It will then be transmitted as a message to the olfactory center, where various neuron cells will convert the odor and deliver it to the central nervous system and to the limbic system of the brain. The limbic system of the brain is the storage of memory, mood regulation, emotions, behavioral states, personality and sexual orientation. In the limbic system, molecules are delivered to the hypothalamus where Corticotropin Releasing Factor (CRF) is produced. CRF stimulates the pituitary gland to produce proopiomelanocortin (POMC) so that enkephalin production from the adrenal medulla increases. In addition to producing POMC, the pituitary gland also produces endorphins as neurotransmitters that function to influence the mood to be

more relaxed (Annis, Antarini & Arie, 2016).

To apply Aromatherapy can use the media Diffuser tool. Diffuser is a tool that serves to refresh the aroma of the room by spraying essential oils. While aromatherapy diffuser is a tool that provides a therapeutic or healing effect because it produces particles of essential oil (Saraswati, 2021).

Therefore, researchers tried to intervene to determine the effect of Rosemary Aromatherapy Diffuser on the learning process in the classroom, as an effort to increase concentration in the student learning process so that it is expected to improve student learning outcomes.

The purpose of this study is to determine the effectiveness of Rosemary Aromatherapy Diffuser on student learning outcomes in the Covid 19 pandemic era.

METHOD

This type of research is quantitative research. Data analysis used univariate and bivariate tests. Univariate test was used to measure the frequency of variables. While bivariate test to measure pre and post intervention of Rossemary aroma therapy using T-test.

The research was conducted at STIKes Cirebon from August to October 2022, with a total of 100 respondents consisting of students of the DIII Midwifery, DIII

Nursing and S1 Nursing Study Programs. Inclusion criteria are level 3 students, and not on leave.



Figure 1. Coordination meeting with Universities, Study Programs and lecturers teaching research intervention classes

RESULTS AND DISCUSSIONS

Result

1. Univariate Analysis

The results of univariate analysis can be presented as follows:

a. Distribution of respondents based on Study Program

The distribution of respondents' study programs in this study is as follows:

Table 1. Frequency distribution of respondents based on study program

No.	Program Studi	Frequency	%
1	DIII Midwifery	15	15,0
2	DIII Nursing	46	46,0
3	S1 Nursing	39	39,0
Total		100	100,0

Source: 2022

Based on the data above, it shows that respondents from the DIII Midwifery Study Program were 15 respondents (15.0%), DIII Nursing 46 respondents (46.0%), and S1 Nursing 39 respondents (39.0%).

b. Distribution of respondents based on Gender

The gender distribution of respondents in this study is as follows:

Table 2. Frequency distribution of respondents based on gender

No.	Gender	Frequency	%
1	Male	32	32,0
2	Famale	68	68,0
Total		100	100,0

Source: 2022

The distribution of respondents based on gender in this study shows that, male respondents were 32 respondents (32.0%), and female respondents were 68 (68.0%).

c. Distribution of student learning outcomes

Table 3. Student learning outcomes before and after Rosemary Aromatherapy intervention

	Student learning outcomes	
	Before	After
Mean	3,64	3,84
Minimum	3,30	3,50
Maximum	3,90	4,00

Source: 2022

Based on the table above, it can be seen that the average student learning outcomes before the Rosemary Aromatherapy intervention were 3.64, with the lowest student learning outcomes being 3.30 and the highest being 3.90. While the average student learning outcomes after Rosemary Aromatherapy intervention is 3.84 with the lowest student learning

outcomes of 3.50 and the highest is 4.00.

2. Bivariate Analysis

The results of bivariate analysis can be presented as follows:

Table 4 T-test of the Effectiveness of Rosemary Aromatherapy Diffuser on Student Learning Outcomes in the Covid Pandemic Era 19

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Dev	Std. Error	95% CI				
			Mean	Lower	Upper			
Sebelum - Sesudah	-.20410	.08807	.00881	-.22157	-.18663	-23,176	99	0,000

Source: 2022

Based on the T-test results in the table above, it can be seen that the significance value is smaller than the alpha value ($0.000 < 0.05$). So it can be concluded that there is a significant difference in the average student learning outcomes before and after the Rosemary Aromatherapy Diffuser intervention. After the intervention of Rosemary Aromatherapy Diffuser on students regularly in learning activities for 2 months, respondents experienced an average increase in learning outcomes of 0, 204. The results of this study indicate that there is an Effectiveness of Rosemary Aromatherapy Diffuser on Student Learning Outcomes in Covid 19 Era.

Discussion

Some essential oils have been studied and found to be effective as mild sedatives that

function to calm the central nervous system which can help overcome insomnia mainly caused by stress, anxiety, tension, and depression (Setyohadi & Kushariyadi, 2011).

Through the delivery of responses carried out by the hypothalamus, the entire essential oil system will be delivered by the circulatory system and chemical agents to the organs of the body. Physiologically, the therapeutic elements of aromatic ingredients will correct imbalances that occur in the body system. Odors that cause a sense of calm will stimulate the brain region called rafe nuclei to release serotonin secretion. Serotonin secretion is useful to cause a relaxing effect as a result of inhibition of cell excitation. The feeling of relaxation produced by citrus aurantium aromatherapy is due to the return of normal circulation. Serotonin causes euphoria, relaxation or sedation. The

olfactory nerve (nervus olfactorius) is the only open channel leading to the brain. Through this nerve, scents will flow into the brain, triggering hidden memories and affecting emotional behavior. This can happen because the aroma directly touches the emotional center and is then tasked with balancing emotional conditions (Setyohadi & Kushariyadi, 2011).

Another study conducted by Hongwratanaworakit in 2009, showed that Rosemary is proven to eliminate depression, stress, mental tension and lethargy (Arisanti, 2017).

With a relaxed and comfortable learning atmosphere, it will make it easier for students to receive material delivered by lecturers, so as to improve learning outcomes in students.



Figure 2. Implementation of research on the provision of Aromatherapy Diffuser in the process of learning activities in the Midwifery Study Program.

CONCLUSION

The results of this study indicate that the significance value is 0.000, smaller than the alpha value (0.05). So that there is a significant difference in the average

student learning outcomes before and after the Rosemary Aromatherapy Diffuser intervention. This Rosemary Aromatherapy Diffuser intervention was given to students regularly in learning activities for 2 months, and respondents experienced an average increase in learning outcomes of 0, 204. The conclusion of this study is that there is an Effectiveness of Rosemary Aromatherapy Diffuser on Student Learning Outcomes in the Covid 19 Era.

THANK YOU

The author would like to thank Sekolah Tinggi Ilmu Kesehatan Cirebon, Study Program, lecturers, respondents, and all parties for their support and involvement in this research process.

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