

WAWASAN PENDIDIKAN



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HOUSE WARAC (HOUSEHOLD WASTE OIL FOR RELAXING AROMATHERAPY CANDLE)

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Abstract

This study aims to utilize waste cooking oil to make aromatherapy candles with natural dyes. This study applied a quasi-experimental group with one-group pretest and post-test to test the use of aromatherapy candles in the classroom. There were 30 students from the 4th grade participating. The students's stress level was measured using DASS which has been modified fitting the students' condition. We examined the aromatherapy candles. Afterwards, respondents were given treatment, namely relaxation by inhaling for 30 minutes during the learning activities after 1 p.m., then measured stress levels using the DASS (Depression Anxiety Stress Scale) questionnaire before and after treatment. The data showed that based on the test, it concluded that unicorn aromatherapy candles can be used as an effective aromatherapy to reduce the stress level of students in full day school. This product is also safe, affordable, easy to use, smells fresh, no expired date, and helps to raise awareness of love for the environment in the community.

Keywords: Aromatherapy candle, stress, full-day school

History Article

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INTRODUCTION

The desire to live a lifestyle that is friendly to the environment (Zero Waste Lifestyle) makes us think a little more in terms of meeting our daily needs. One of them is the problem of "used cooking oil". Waste cooking oil is one type of waste generated from food processing with cooking oil. This waste can come from households, stalls, restaurants, and other food businesses. Almost everyone produces waste cooking oil every day. Unfortunately, not many people realize that carelessly disposing of waste cooking has a serious impact on the environment and health. Waste cooking oil is one of the B3 wastes produced by households [1].

What is B3 waste? B3 waste is waste that in its concentration contains harmful substances which can damage the environment and interfere with health either directly or indirectly [2].

There are 6 dangers of waste cooking oil if consumed and disposed of carelessly which can cause various diseases such as high cholesterol, heart disease, cancer and for the environment it can cause drainage blockages, water pollution and soil pollution [3].

The amount of waste cooking oil produced by each household is estimated to be around four liters per month. This estimate is based on data from households in the Greater Jakarta area which produce approximately one liter of waste cooking oil every week [4]. This data shows that the amount of waste cooking oil produced is quite large. If there are around 200,000

households in a city, it is estimated that the volume of waste cooking oil is around 800,000 liters per month. Confirmation of where the waste cooking oil ends up is uncertain, but there is a mapping of waste cooking oil networks in the city of Yogyakarta. The form of the waste cooking oil management network in the city of Yogyakarta has been mapped to factories that require a mixture of waste cooking oil and diesel fuel for combustion [5].

Lack of education to the public about the dangers of waste cooking oil also makes people still like to consume and throw waste cooking oil anywhere. Even though waste cooking oil can be recycled into other products that are more useful, one of which is aromatherapy. One of the methods used to relieve fatigue and restore concentration is by inhaling aromatherapy. Aromatherapy is a way of utilizing essential ingredients extracted from plant parts with the aim of improving physical and psychological health. One of them is essential oil from lemon (*Citrus limon*) which provides various benefits for reducing stress, increasing concentration, cognitive performance, memory, and mood [6]. Aromatherapy candles are often used to get that relaxing sensation.

Processing waste cooking oil into wax has several articles containing this program. There is a program for making aromatherapy candles from waste cooking oil in Sorowajan Hamlet, Glugo Hamlet, Pungunharjo Village, Sewon District, Bantul Regency [7]. In addition, the same program was carried out in Tirtonirmolo Kasihan Village, Rogocolo, Bantul [8]. In Batu City, waste cooking oil is used to make environmentally friendly candles [9]. However, the materials used in making aromatherapy candles are still not environmentally friendly, for example the use of crayons as dyes, stirin, and the smell of waste cooking oil which is still strong.

Therefore, this project innovates by using natural dyes as a mixture to make the wax more attractive, filtering the smell of waste cooking oil by soaking banana peels and replacing styrene with soy wax to make it safer. Then, aromatherapy candles were tested on full-day school students to increase their relaxation in learning in class.

METHOD

Method and Experimental Design

This study applied a quantitative method. It is a quasi experimental design with one group pre-test and post-test. The participants of this study were the students of 5th grade in SD Hj. Isriati Baiturrahman 1 Semarang. There were 25 students in the sample. To measure the students' stress level before and after giving aromatherapy candles in the class, the instrument used was DASS (Depression Anxiety Stress Scale). The aromatherapy candles were given at 13.00 p.m. after 5 hours learning in the classroom.

Steps of making the aromatherapy candles

The following are the steps of making aromatherapy candles:

- Put the banana peel pieces into the waste cooking oil container.

This is done to reduce the smell of food in the cooking oil. The soak is left for 5 days.

- After 5 days, the marinade is filtered to separate the bananas from the cooking oil.
- Prepare a 100 ml jar and install the candle wick in the jar.
- Weigh 50 g of stearic acid using a digital scale.
- Heat 150 ml of filtered oil. After it's hot, add the stearin while stirring so that it's completely dissolved
- Turn off the stove once the stearin has dissolved.
- Remove and give 1 tablespoon of taro powder and stir until evenly distributed.
- Set aside for a while, after the temperature has dropped to about 600, add 5 ml of essential oil and stir again.
- Pour into a jar with a candle wick.
- let stand for 24 hours so that the mixture can harden completely.

Steps of Collecting Data

This study aims at finding out the students' stress levels in full-day school before and after getting aromatherapy candles in the classroom. To find the data, the steps were conducted as follows;

- Initially, students were asked to do a pre-test to know their stress level before the aromatherapy candles were put around the classroom.

- At 13.00, 4 jars of aromatherapy candles were located in some places around the classroom.
- Students were asked to inhale and smell the aromatherapy to feel the relaxation for 30 minutes.
- The students did a post-test after 30 minutes inhaling the aromatherapy candles.

RESULT AND DISCUSSION

Our aromatherapy candles were made from the mixture of waste of cooking oil and used natural dyes so it is safe for the environment. For the scent, we used more lemon extract powder so that the participants could easily smell and get relaxed. Statistically to measure the students' stress level in full day school, we used DASS as the instrument. Based on the data gathered it revealed that the use of aromatherapy candles after 6 hours learning activities helped students in decreasing their stress level. The data is shown below.

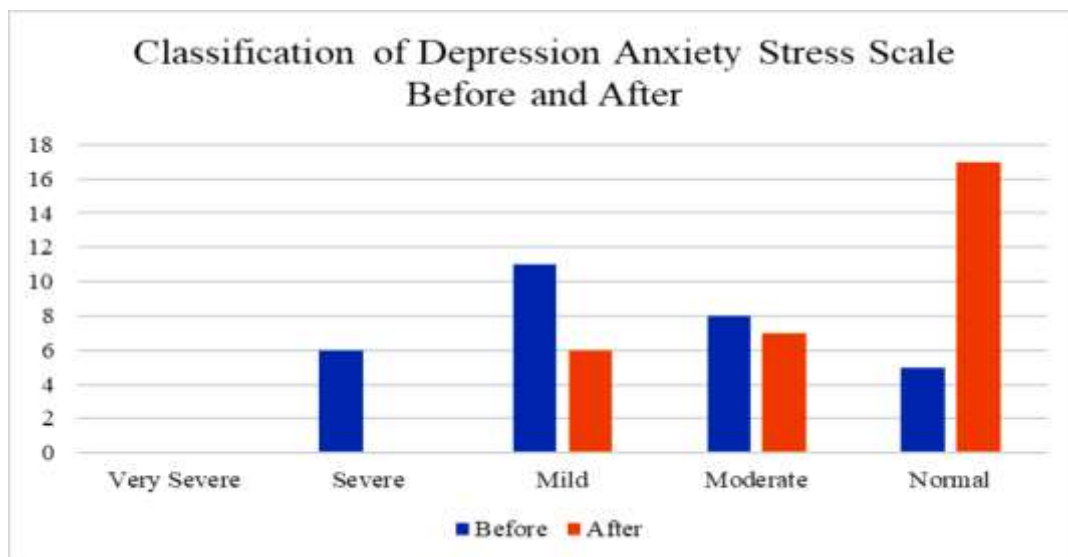


Diagram 1. Classification of Depression Anxiety Stress Scale Before and After Inhaling the Aromatherapy Candles

Based on the data displayed it is shown that before getting the treatment of aromatherapy candles most of the students' conditions were on a mild level. There were 10 students. Meanwhile, there were only 4 students classified as normal.

After the students got the treatment of inhaling the aromatherapy candles for 30 minutes, there was a difference for the number of students on every level. At this time, most students could feel the advantage of aromatherapy candles for making them more relaxed and enjoy learning activities in the afternoon. The number of students who were on the level of severe, mild, and medium were decreasing. Meanwhile, students on the normal level were significantly increased.

Lemon EO (Essential oil) is a natural stress reliever. Inhaling lemon EO causes anti-stress effects through modulating the 5-HT and dopamine (DA) activities in mice. Lemon EO also significantly enhanced attention level, concentration, cognitive performance, mood, and memory of students during the learning process (Akpinar,2005).

CONCLUSION

To sum up, there was a significant change in the number of students in every level before and after getting the treatment for inhaling aromatherapy candles in the classroom during the learning activities after 1 p.m. From the data obtained and explained, it is shown that aromatherapy candles are good media to decrease students' stress level in having full day school. The number of students for the DASS were changing. The three levels (severe, mild, and moderate) showed decrease while on the normal level, the number of the students increased. Moreover, the participants' comments for these candles were good. They like the smell.

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