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#### THE EFFECT OF AROMATHERAPY AND ENDORPHIN MASSAGE TO DECREASE ANXIETY LEVEL OF PREMENOPAUSE WOMEN IN WEST SEMARANG HEALTH CENTER

Riadinata Shinta P.<sup>1</sup>, Syarief Thaufik Hidayat<sup>2</sup>, Ngadiyono<sup>3</sup>, Henry Setyawan<sup>2</sup>,  
Ari Widyaningsih<sup>3</sup>, Kadek Yuli Hesti<sup>3</sup>

<sup>1</sup>*Master Program of Epidemiology, Diponegoro University, Semarang, Indonesia*

<sup>2</sup>*Diponegoro University, Semarang, Indonesia*

<sup>3</sup>*Semarang Health Polytechnic, Semarang, Indonesia*

Corresponding author's email: [riadinatashinta25@gmail.com](mailto:riadinatashinta25@gmail.com)

Every woman will definitely experience menopause. Complaints in postmenopause women aged 45-54 years include fear, anxiety, irritability, hot flushes, anxiety and depression, headache, fatigue, difficult to concentrate, and forgetfulness. Aromatherapy can be an effective treatment of menopause whilst endorphin massage is one way to stimulate endorphins from human body. The objective of this study is to examine the relationship aroma therapy and massage endorphins provision in decreasing anxiety level of premenopausal women.

This research was a quasi experiment with One Group Pre-test and Post-test without Control Group design. The intervention consisted of three treatment groups: aromatherapy, endorphin massage and combination of both. Each group consisted of 16 respondents.

The study found, combination of aromatherapy and endorphin massage contributed the most in decreasing anxiety level, compared to aromatherapy and endorphin massage as individual treatment.

**Keywords:** Aromatherapy, Endorphins Massage, Premenopause

### 1. BACKGROUND

Menopause is a natural event in a woman's life. Along with age, all the functions of the organs begin to show significant changes, including reproductive organs function. Irregular menstrual complaints usually started at the age of 45, marking the stage premenopause (Proverawati,2010).It is usually characterized by the shortening of the menstrual cycle compared to the previous menstrual cycle. Several factors that affect menopause have been identified, such as age of menarche, psychological factors, parity, age of birth, contraception, and smoking (Kasdu,2012).

Menopause does not cause death, but can cause discomfort and disruptions in daily activities which can decrease quality of life. The complaints related to premenopause comprise of irritability, fear, anxiety, hot flushes, headache, fatigue, difficulty in concentrating, forgetfulness, weight gain, bone and muscle pain, sleep disorders, obstipasi, palpitations, libido disorders, tingling, and dizzy

eyes (Kemenkes RI,2013). The conditions require appropriate treatment especially because women between 40-65 years old (climacteric) reach the top of their career (Kemenkes RI,2013).

Anxiety and stress on menopause can increase hot flushes, insomnia, depression and other symptoms. Menopause complaints occur because the disturbance of the adrenal glands ability to produce androstenedione. Premenopause women who can manage stress and anxiety levels will be able to control menopause symptoms that arise which would then reduce the risk of more severe mental disorders (Mulyani,2013).

The process of menopause will last between 3 to 5 years until it is declared complete when a woman has stopped menstruating for 12 months. This period is often called as premenopause period, that phase happen during 40 years old of age and this is the beginning of the climacteric phase. At this time, a lot of changes in the hormonal balance including decrease in estrogen level which can lead to irregular menstruation. The production of progesterone hormone will also decrease and affects the physical and emotional functions. Anxiety therefore often occurs during this phase. Anxiety levels on pre-menopause woman associated with many aspects, including knowledge, perception, and family support (Mulyani,2013 and Dwi,2010).

Most pre-menopause women experience complaints caused by hormonal changes during menopause. Studies found, hormone therapy, natural therapy and complementary therapy can help to reduce the complaints (Mulyani,2013). In Norway, some complementary therapies are developed to address menopause woman complaints (Einar,2013) whilst aromatherapy can be an effective treatment of menopause symptoms such as hot flushes, depression and pain in women because aromatic essential oils have the effect to phytoestrogens (Haeng,2013, Keville,2013).

Studies found that endorphin or happiness hormone can be use to deal with anxiety (Haruyama,2013). Endorphin relaxing the tension by stimulating specific points along the meridians which are transmitted through nerve fibers to the formation reticularis, thalamus and limbic system release endorphin (Budiarti,2011). Endorphin pain-relieving substances that is naturally produced in the body, trigger a calming and uplifting response in the body, has a positive effect on emotions and may lead to relaxation and normalization of body functions and a portion of the release of endorphins can lower blood pressure and improve blood circulation (Budiarti,2011).

Endorphins has been known as a substance with many benefits, such as to regulate the production of growth and sexual hormone, control persistent pain, control stress feeling and boost the immune system. Endorphins in the body can be released through various activities, such as deep breathing and relaxation, as well as meditation (Azizah,2011). Endorphins massage is one way to stimulate endorphins from human body and has been acknowledged in reducing labor pain (Azizah, 2011). This study aims to examine whether aromatherapy affect anxiety level of pre-menopause women.

## **2. RESEARCH METHOD**

This research was a quasi experiment with One Group Pre-test and Post-test Design. The population of the study is women aged 45-50 years at West Semarang Health Center involving a total samples of 16 respondents in each group and make it totally 48 respondents. The inclusion criteria include women aged 45-50 years, willing to become respondents, reporting menopausal complaints, having mild or moderate or severe or panic anxiety. Menopausal women over 3 years, women aged 45-50 years who have no anxiety premenopausal were excluded from the study.

Interventions conducted over three consecutive days. The level of anxiety before the intervention was measured on the first day, and post test on the last day. Anxiety was measured by

Hamilton Anxiety Rating Scale. Determining the degree of anxiety in a way adds value scores and items 1-14 with the results : (1) scores of less than 6 = no anxiety; (2) score 7-14 = mild anxiety; (3) score 15-27 = moderate anxiety and (4) scores over 27 = severe anxiety.

This study used three treatment groups. The intervention given to the subject includes aromatherapy, endorphin massage, and a combination of both. Independent t-test was employed to compare the mean level of anxiety of two groups that are not related to each other whilst paired t-test was employed to compare the mean difference before and after treatment. One-way ANOVA was used to observe the interaction between the variables and the effect on a treatment.

### 3. RESULTS AND DISCUSSION

The population of the study is women aged 45-50 years at West Semarang Health Center. Most women in the study were employed. Before the intervention, most women in the massage group experienced moderate anxiety level. After being treated with endorphin massage, the proportion of those who had moderate anxiety reduced from 56% to 43% whilst the proportion of women who suffered from severe anxiety also decreased from about a third to none. Paired t-test provides a p-value of 0.000 which indicate there is a significant difference of anxiety level before and after the endorphin massage treatment.

In the second group, the vast majority (43%) of women experienced moderate anxiety level before given the treatment. After the aromatherapy treatment, the proportion of women who suffered from moderate anxiety remain the same (43%). Nevertheless, the proportion of women who experienced severe anxiety was dropped from 37% to 0. Paired t-test also provides a p-value of 0.000 which indicate there is a significant difference of anxiety level before and after the aromatherapy treatment.

Table 3.1 Frequency Distribution of Anxiety Level in Premenopause

Anxiety Level	Endorphins Massage				Aromatherapy				Aromatherapy and Massage			
	Pre		Post		Pre		Post		Pre		Post	
	n	%	n	%	n	%	n	%	N	%	n	%
No Anxiety	0	0	1	6,3	0	0	1	6,3	0	0	3	18,8
Mild	2	12,5	8	50	3	18,8	8	50	2	12,5	10	62,5
Moderate	9	56,3	7	43,7	7	43,8	7	43,7	9	56,3	3	18,8
Severe	5	31,3	0	0	6	37,5	0	0	5	31,3	0	0
<b>Total</b>	<b>16</b>	<b>100</b>	<b>16</b>	<b>100</b>	<b>16</b>	<b>100</b>	<b>16</b>	<b>100</b>	<b>16</b>	<b>100</b>	<b>16</b>	<b>100</b>

Treatment in the third group is a combination of aromatherapy and endorphins massage. Combination treatment of aromatherapy and massage endorphins will be more meaningful to decrease anxiety in the menopause woman than other treatments because endorphin itself also can reduce the level of anxiety. This is consistent with the theory of Haruyama (2013) that aromatherapy and endorphine massage can reduce the level of anxiety in this study, especially of anxiety in the premenopausal women. Based on the difference of each treatment, it can be concluded that the use of separated treatment has bigger significance value than the combination treatment. This is in line with research Davis (2013) about aromatherapy massage that can reduce symptoms of menopause with p value <0.05. In this study, the combination of aromatherapy and massage endorphins can reduce anxiety levels with significant value 0,027 premenopausal. The analytical results obtained are t value 5.215 and p = 0.000, it means p <0.05 means there is

difference between average anxiety level prior to combination treatment with aromatherapy and endorphin massage and level of anxiety after combination treatment with endorphins massage and aromatherapy.

Table 2. Mean differences in anxiety levels in premenopausal women before and after treatment

Anxiety level	Group		
	Massage	Aromatherapy	Aromatherapy Massage
	n=16 (1)	n=16 (2)	n=16 (3)
Before (mean±SD)	2.19±0.655	2.19±0.750	2.19±0.655
After (mean±SD)	1.38±0.619	1.38±0.619	1.00±0.632
<i>p-value before*after<sup>a</sup></i>	0.0001	0.0001	0.0001
<i>p-value (1)*(2)<sup>b</sup></i>		0.791	
<i>p-value (2)*(3)<sup>b</sup></i>		0.027	
<i>p-value (1)*(3)<sup>b</sup></i>		0.011	
<i>p-value (1)*(2)*(3)<sup>c</sup></i>		0.013	

(a) Paired t-test , (b) Independent t-test , (c) One way Anova

Independent sample t-test was used to compare two unrelated samples. The statistical test showed that there was no significant difference of the mean level of anxiety between endorphin massage and aromatherapy (*p-value* 0.791). This implies, the effectivity of massage and aromatherapy in decreasing anxiety level is similar. Comparing endorphin massage to combination of aromatherapy massage, the statistical test provides a *p-value* of 0.011 which means there is a significant difference of average anxiety level between two groups. The last comparison is made between aromatherapy and combination of aromatherapy massage. With a *p-value* of 0.027, the result showed that there was a significant difference of mean anxiety level between two groups.

When someone sucks the odor of aromatherapy oil, the odor will enter nasal cavity through inhalation, and will be interpreted by the brain as the sense of smell. The sense of smell is divided into three stages; begins with the reception of the odor molecules by the olfactory epithelium, which is a receptor that contains 20 million nerve endings. Furthermore, the odor will be transmitted as a message to the olfactory center located on the back of the nose (Hughes,2007). This method is the most effective way. When inhaled, the oils will bring aromatic oil content into the nostril. Vibrating hairs in it will usher into the central nervous system. This message will activate the emotional center and a person's memory and will deliver a message back to the entire body via the circulatory system and converted into action in the form of the release of neurochemical substances happy feeling, relax, calm or inflame. The easiest way is by inhaling (Aprilia,2011).

Massage is one way to indulge, because it has the magic touch of its own which is very useful to relieve fatigue on the body, improve blood circulation, stimulate the body to remove toxins and improve the health of mind (Hutasoit,2010). Back massage stimulates the body to release endorphins compound which is a natural pain reliever. Endorphin also can create a sense of comfort and tasty. Relaxation massage goal is to reduce muscle tension, help blood circulation, give a sense of relaxation to the body and relieve stress (Maryunani,2010).

The combination of the two therapies that is massage and aromatherapy aims to get better results than just using one of the therapies. An aromatherapy massage is a popular way by using essential oils for working in several ways at the same time. Skin absorbs the essential oils and aromatherapy also enters through breathing, plus more, physical therapy massage itself. Aromatherapy massage has been proven to have positive effects and in line with the study (Rho,2010).

Anova was used to see whether there is significant difference of mean level anxiety among three groups. Results of the analysis showed that significant value  $0.013 < 0.05$ , which means there is significant difference among three treatment groups. Post hoc tests were used to see which group showed highest mean difference among three treatment groups. The result showed combination of aromatherapy and endorphins massage treatment have greatest effect in reducing anxiety level compare to stand alone therapies.

#### 4. CONCLUSION

The combination of aromatherapy and endorphins massage treatment can reduce the higher level of anxiety on premenopause woman compared with two other groups with a significance value of 0.021. It can support previous research which states that some aromatic essential oils have the effect of phytoestrogens on menopause symptoms in woman.

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