

THE EFFECT OF COMPLEMENTARY THERAPIES OF SLOW DEEP BREATHING AND *LAVANDULA* ESSENTIAL OIL FOR INCREASING FEMALE PRISONERS' SELF-ESTEEM AT THE CORRECTIONAL FACILITY, CLASS IIB, YOGYAKARTA

Sitti Khadijah^{1*)} & Dheska Arthyka Palifiana¹

¹Midwife Study Program, Faculty of Health Sciences, Respati University of Yogyakarta
Jl. Raya Tajem Km 1,5 Maguwohardjo, Depok, Sleman, Yogyakarta

Abstract

Prisoners will undoubtedly experience major changes in the prison in terms of environment, roles, and activities during their detention. All these changes make them experience a decrease in self-esteem. Complementary therapy in the forms of slow deep breathing and essential oil of Lavandula can cause physical and psychological relaxation so that it is expected to affect the prisoners' self-esteem. This study aimed to find out the effect of complementary therapies of slow deep breathing and Lavandula essential oil on female prisoners' self-esteem. The type of this study was experimental research using a pre-post-test design and a two-group design. Samples in this study consisted of 41 respondents. Furthermore, the employed data analysis was the Wilcoxon test. The results in this study indicated that the majority of respondents were in the categories of early adulthood (65.9%), having secondary education level (48.8%), having been married (48.8%), and having a length of sentence of 1 – 5 years (61%). In the group given slow deep breathing therapy, respondents who had low self-esteem in the pre-test was 33.33%. However, in the post-test, they decreased to 5.56%. Meanwhile, its significance value (2-tailed) was 0.025 ($p < 0.05$). In the group given Lavandula essential oil therapy, respondents who had low self-esteem in the pre-test was 34.78%. However, in the post-test, they also decreased to 4.34%. Meanwhile, its significance value (2-tailed) was 0.008 ($p < 0.05$). It can be concluded that complementary therapies of slow deep breathing and Lavandula essential oil can increase female prisoners' self-esteem.

Keywords: Complementary Therapy; Slow Deep Breathing; Lavandula Essential Oil; Self-Esteem; Female Prisoners

*) Corresponding author:
Email: cha_midwife19@yahoo.com

1. Introduction

Women who are sentenced to prison are called female prisoners (in Indonesian: *warga binaan perempuan*) who live life in a prison where they require severe adjustment. The adjustment can be in the forms of loss of physical freedom, loss of life control, loss of family, loss of goods and services, loss of security, loss of heterosexual relationships, lack of stimulation, and other psychological disorders (Juniartha, 2015).

Prisoners will undoubtedly experience major changes in the prison in terms of environment, roles, and activities during their detention. All these changes make them experience a decrease in self-esteem. Self-esteem is a self-concept that exists in every human being and this self-esteem is certainly different from one person to another (Maramis & Maramis, 2009).

The establishment of self-esteem in individuals is not an innate factor but rather a factor

that can be learned and formed throughout the individual's life journey. The establishment process of self-esteem is experienced by individuals and is also learned through the process of learning from the surrounding environment and through how other people treat an individual (Ginting & Regita, 2019).

Low self-esteem occurs when the environment tends to isolate and demand more on one's abilities. The social environment will affect individuals through the experiences they undergo. In addition, social changes such as feelings of being excluded, being rejected by the social environment, or being disrespected will cause stress and lead to behavioral deviations due to low self-esteem. Individuals who experience low self-esteem for 3 months will have situational low self-esteem, while those who experience low self-esteem for more than 6 months will undergo chronic low self-esteem which must be followed up immediately (Yosep, 2009).

This means that a person's self-esteem can be changed. In this study, researchers used alternative complementary therapies as an intervention. The applied complementary therapies were slow deep breathing and *Lavandula* essential oil. Slow deep breathing is conscious relaxation to regulate breathing deeply and slowly (Martini, 2006). Diaphragmatic breathing is an easy method of relaxation in terms of implementation. Slow deep breathing has an effect on reducing blood pressure, reducing anxiety, and increasing oxygen saturation (Mason et al., 2013).

Another alternative complementary therapy is the provision of *Lavandula* essential oils. Lavender or *Lavandula* as an essential oil has many benefits, such as reducing pain, antidepressants, antimicrobials (Al-Anwar, 2003). The main constituents of lavender oil are 26-49% linalool and linalyl acetate (Price & Price, 2011). Its pharmacological effects can lead to physical and psychological relaxation (McGuinness, 2007).

Based on this background, researchers are interested in studying the effect of complementary therapies of slow deep breathing and *Lavandula* essential oil on increasing female prisoners' self-esteem at the Correctional Facility, Class IIB, Yogyakarta.

2. Methods

The type of this study was experimental research using a pre-post-test design and a two-group design. A pre-post-test design was used to compare the actions taken before and after being given treatment.

Researchers made an explanatory video for respondents about the topic of this study to explain the aims and objectives of the research. After the respondents understood the video, the research assistants asked the respondent to sign the consent form. Respondents had the right to refuse to be involved in this study. After that, the respondents filled out the pre-test questionnaire and returned it to the research assistant. Respondents were divided into 2 groups, namely a group that is given a slow deep breathing treatment and a group that is given *Lavandula* essential oil treatment. The overall number of respondents was 41 people. The number of respondents in a group that is given slow deep breathing treatment was 18 people. Meanwhile, the number of respondents in a group that is given *Lavandula* essential oil treatment was 23 people.

Researchers provided an explanation of the treatment to be given to respondents via video. In the video, the researchers explained how to do slow deep breathing therapy and how to use *Lavandula* essential oil. Previously, *Lavandula* essential oil had been handed over to the prison administrators. Respondents carried out the treatment 2 times every day for a month and were observed by field survey officers using observation sheets. After the one-

month treatment, the respondents were given another questionnaire as a post-test. The questionnaire was then returned to the researcher to be processed and analyzed.

After the whole questionnaires were collected, researchers input the data into the master table. Researchers carried out entry data, coding, editing, and cleaning towards the data that had been collected. Then, the data were analyzed. The employed analysis techniques in this study were univariate and bivariate analyses. However, researchers firstly conducted a normality test. The results of the data analysis indicated that the data were not normally distributed. Therefore, the data were analyzed using a non-parametric test through the Wilcoxon test.

3. Results And Discussion

Based on table 1, it can be seen that the majority of respondents were in the categories of early adulthood (65.9% or 27 people), having secondary education level (48.8% or 20 people), having been married (48.8% or 20 people), and having a length of sentence of 1 – 5 years (61% or 25 people).

Table 1. Frequency distribution of respondent characteristics based on age, education, marital status, and length of sentence

Respondent Characteristics	Frequency	Percentage (%)
Age		
Early Adulthood	27	65.9
Intermediate Adulthood	14	34.1
Total	41	100
Level of education		
Not school	2	4.9
Primary	3	7.3
Secondary	20	48.8
Tertiary	16	39
Total	41	100
Marital Status		
Single	7	17.1
Married	20	48.8
Divorced	14	34.1
Total	41	100
Length of Sentence		
< 1 year	1	2.4
1 – 5 years	25	61
5 – 10 years	8	19.5
> 10 years	7	17.1
Total	41	100

Based on table 2, in the age category, before being given the slow deep breathing treatment, the majority of respondents had high self-esteem, namely 61.1% (11 people), and found in the early adulthood sub-category. After being given the treatment, the number of respondents who had high self-esteem

increased to 77.78% (14 people) and found in the same sub-category.

Table 2. Differences in female prisoners' self-esteem before and after being given complementary therapies of slow deep breathing and *Lavandula* essential oil linked to respondent characteristics

Respondent Characteristics	Slow Deep Breathing Therapy				Lavandula Essential Oil Therapy			
	Pre-Test		Post-Test		Pre-Test		Post-Test	
	Low	High	Low	High	Low	High	Low	High
Age								
Early Adulthood	3 (16.67%)	11 (61.1%)	0 (0%)	14 (77.78%)	5 (21.74%)	8 (34.78%)	0 (0%)	13 (56.52%)
Intermediate Adulthood	3 (16.67%)	1 (5.56%)	1 (5.56%)	3 (16.67%)	3 (13.04%)	7 (30.43%)	1 (4.35%)	9 (39.13%)
Level of education								
Not school	0 (0%)	1 (5.56%)	0 (0%)	1 (5.56%)	0 (0%)	1 (4.35%)	0 (0%)	1 (4.35%)
Primary	2 (11.11%)	1 (5.56%)	0 (0%)	3 (16.67%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Secondary	2 (11.11%)	6 (33.33%)	1 (5.56%)	7 (38.89%)	4 (17.4%)	8 (34.78%)	0 (0%)	12 (52.17%)
Tertiary	2 (11.11%)	4 (22.22%)	0 (0%)	6 (33.33%)	4 (17.4%)	6 (26.08%)	1 (4.35%)	9 (39.13%)
Marital Status								
Single	0 (0%)	2 (11.11%)	0 (0%)	2 (11.11%)	1 (4.35%)	4 (17.4%)	0 (0%)	5 (21.74%)
Married	2 (11.11%)	9 (50%)	1 (5.56%)	10 (55.56%)	4 (17.4%)	5 (21.74%)	1 (4.35%)	8 (34.78%)
Divorced	4 (22.22%)	1 (5.56%)	0 (0%)	5 (27.78%)	3 (13.04%)	6 (26.08%)	0 (0%)	9 (39.13%)
Length of Sentence								
< 1 year	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1 (4.35%)	0 (0%)	0 (0%)	1 (4.35%)
1 – 5 years	3 (16.67%)	7 (38.89%)	1 (5.56%)	9 (50%)	4 (17.4%)	11 (47.82%)	1 (4.35%)	14 (60.87%)
5 – 10 years	1 (5.56%)	4 (22.22%)	0 (0%)	5 (27.78%)	2 (8.7%)	1 (4.35%)	0 (0%)	3 (13.04%)
> 10 years	2 (11.11%)	1 (5.56%)	0 (0%)	3 (16.67%)	1 (4.35%)	3 (13.04%)	0 (0%)	4 (17.4%)

In the educational level category, before being given the slow deep breathing treatment, the majority of respondents had high self-esteem, namely 61.1% (11 people), and found in the secondary education sub-category. After being given the treatment, the number of respondents who had high self-esteem increased to 38.89% (7 people) and still found in the same sub-category.

In the marital status category, before being given the slow deep breathing treatment, the majority of respondents had high self-esteem, namely 50.0% (9 people), and found in the married sub-category. After being given the treatment, the number of respondents who had high self-esteem increased to 55.56% (10 people) and still found in the same sub-category.

In the length of sentence category, before being given the slow deep breathing treatment, the majority of respondents had high self-esteem, namely 38.89% (7 people), and found in the 1 – 5 years sub-

category. After being given the treatment, the number of respondents who had high self-esteem increased to 50.00% (9 people) and still found in the same sub-category.

Table 2 also indicated that, in the age category, before being given the *Lavandula* essential oil therapy, the majority of respondents had high self-esteem, namely 34.78% (8 people), and found in the early adulthood sub-category. After being given the treatment, the number of respondents who had high self-esteem increased to 56.52% (13 people) and found in the same sub-category.

In the educational level category, before being given the *Lavandula* essential oil therapy, the majority of respondents had high self-esteem, namely 34.78% (8 people), and found in the secondary education sub-category. After being given the treatment, the number of respondents who had high self-esteem increased to 52.17% (12 people) and still found in the same sub-category.

In the marital status category, before being given the *Lavandula* essential oil therapy, the majority of respondents had high self-esteem, namely 26.08% (6 people), and found in the divorce sub-category. After being given the treatment, the number of respondents who had high self-esteem increased to 39.13% (9 people) and still found in the same sub-category.

In the length of sentence category, before being given the *Lavandula* essential oil therapy, the majority of respondents had high self-esteem, namely

47.82% (11 people), and found in the 1 – 5 years sub-category. After being given the treatment, the number of respondents who had high self-esteem increased to 60.87% (14 people) and still found in the same sub-category.

Based on the table 3, in the group of slow deep breathing therapy, in the pre-test, 6 respondents (33.33%) had low self-esteem, while 12 respondents (66.67%) had high self-esteem. Furthermore, in the post-test, 1 respondent (5.56%) had low self-esteem, while 17 respondents (94.44%) had high self-esteem.

Table 3. Cross-tabulation and bivariate analysis of self-esteem before and after female prisoners were given slow deep breathing therapy

Slow Deep Breathing Therapy		Post-Test		Total	Sig.
Pre-Test	Low	Low	High	6 (33.33%)	0.025
	High	1 (5.56%)	5 (27.78%)		
	Total	0 (0%)	12 (66.67%)	12 (66.67%)	
Total		1 (5.56%)	17 (94.44%)	18 (100%)	

Its significance value (2-tailed) was 0.025 ($p < 0.05$) indicating that the results of the pre-test and post-test had a significant change. It can be concluded that slow deep breathing therapy can increase female prisoners' self-esteem.

Based on table 4, the group of *Lavandula* essential oil therapy, in the pre-test, 8 respondents (34.78%) had low self-esteem, while 15 respondents (65.21%) had high self-esteem. Furthermore, in the post-test, 1 respondent (4.34%) had low self-esteem, while 22 respondents (95.65%) had high self-esteem

Table 4. Cross-tabulation and bivariate analysis of self-esteem before and after female prisoners were given *Lavandula* essential oil therapy

Lavandula Essential Oil Therapy		Post-Test		Total	Sig.
Pre-Test	Low	Low	High	8 (34.78%)	0,008
	High	1 (4.34%)	7 (30.43%)		
	Total	0 (0%)	15 (65.21%)	15 (65.21%)	
Total		1 (4.34%)	22 (95.65%)	23 (100%)	

Its significance value (2-tailed) was 0.008 ($p < 0.05$) indicating that the results of the pre-test and post-test had a significant change. It can be concluded that the *Lavandula* essential oil therapy can increase female prisoners' self-esteem.

Characteristics of Respondents Based on Age, Education, Marital Status, and Length of Sentence

The majority of respondents were in the categories of early adulthood, having secondary education level, having been married, and having a length of sentence of 1 – 5 years. Early adulthood (18 – 40 years old) is a self-adjustment to a new way of life by taking advantage of the acquired freedom (Hurlock, 2016). Someone who has a high level of education normally has high self-esteem as well. However, low self-esteem can occur situationally or be caused by trauma such as embarrassment in prison.

Self-esteem is self-concept so that if the self-concept of those who are divorced and married is different, then their self-esteem is also different (Dewi, 2013). The long sentence period will cause various psychological problems such as anxiety and

low self-esteem during the period of detention. The longer the prisoners are in prison and isolated from the outside environment, the heavier their psychological burden will be (Maryatun, 2011).

Analysis of Female Prisoners' Self-Esteem Before and After Being Given Slow Deep Breathing Therapy

Serving a prison sentence will have a psychological impact in the form of decreased self-esteem. Prisoners will lose their personality and identity due to the rules and procedures for living in the correctional facility. Prisoners will always be monitored by officers continuously so that they will feel less safe, always suspected, and always unable to do something (Juniartha, 2015).

Breathing exercises which become a habit can improve physical and mental health (Potter & Perry, 2006). Slow deep breathing is a state of inhalation and exhalation of breath with a frequency of breaths of 6-10 times per minute, resulting in an increase in cardiopulmonary stretch (Junior, Sica, & Black, 2008).

Deep breathing can affect the body's biochemical changes, such as increasing substances

that cause relaxation (endorphins) and decreasing adrenaline (White, 2008). When relaxation occurs, muscle fibers are prolonged. Not only that, but nerve impulse delivery to the brain, brain activity, and other body functions also decrease (Potter & Perry, 2006). Slow deep breathing has an effect on reducing blood pressure, reducing anxiety, and increasing oxygen saturation (Mason et al., 2013).

For prisoners who have been able to accept their condition both their strengths and weaknesses, they can provide value or benefit for themselves and for others, especially for their family. Guidance carried out by the correctional facility is hoped to be able to raise prisoners' self-esteem to participate in society.

Maslow stated that self-esteem is part of basic human needs consisted of respect from family and society and respect for others. Individuals with high self-esteem are usually better able to withstand and adapt to needs and pressures than those with low self-esteem. Low self-esteem can cause feelings of emptiness and separation from other people. It can sometimes lead to depression, restlessness, or prolonged anxiety (Potter & Perry, 2006).

Analysis of Female Prisoners' Self-Esteem Before and After Being Given *Lavandula* Essential Oil Therapy

Aromatherapy is a therapeutic modality or alternative medicine using plant extracts (Setyoadi, 2011). Aromatherapy provides various effects for the inhaler, such as calmness and freshness (Rahayu & Sugita, 2018). *Lavandula* flowers are small, bluish-purple, and reach 72 cm in height. The process of making lavender aromatherapy is by distillation. Hence, the process produces essential oils. The distillation process can be carried out in several ways according to the desired volume and the availability of supporting tools. The oil distillation tools should be made of stainless steel because if it is made from other materials, the resulting oil will be cloudy (Dewi, 2013).

Lavender essential oil is usually diluted with other oils from plants (carrier oil) such as sweet almond oil, apricot oil, and grape seed oil so that it can be used to the body for aromatherapy massage (Jane Buckle, 2001). Lavender aromatherapy contains linalool which functions as a sedative effect so that when someone inhales lavender aromatherapy, the released aroma will stimulate the cilia receptors of the olfactory nerve in the olfactory epithelium to transmit the scent to the olfactory bulb. The olfactory bulb has a link to the limbic system. The limbic system receives all information from the auditory, vision, and olfactory systems (J Buckle, 2015).

Lavender oil is aromatherapy which is known to have sedative, hypnotic, and anti-neuro-depressive effects for either animals or humans (Yamada, Mimaki, & Sashida, 2005). A few drops of lavender

oil can help to combat insomnia, to improve one's mood, and to provide a relaxing effect so that it can be used for stress management.

Lavender aromatherapy so far has no contraindications and does not cause sensitization and irritation when used on the skin. It also does not irritate the mucosa (Ramadhian & Zettira, 2017).

According to Coopersmith (2010), high self-esteem is possessed by an individual who has positive self-esteem and acceptance, is a calm person, and acts effectively. In addition, having a low level of anxiety can make people better cope with anxiety. Individuals with low self-esteem can have feelings of rejection, doubt, feeling of worthlessness, feeling isolated, lack strength, not deserve to be loved, inability to express themselves, inability to defend themselves, and feeling weak to fight their own weaknesses.

4. Conclusions And Suggestions

Based on the data analysis and the results of the discussion above, it can be concluded that complementary therapies of slow deep breathing and *Lavandula* essential oil have an effect on increasing female prisoners' self-esteem. Based on the above conclusions, the suggestions that can be put forward are complementary therapy for slow deep breathing and *lavandula* essential oil can be an alternative to increase self-esteem, especially for inmates in prison.

5. Acknowledgments

Thank you to Direktorat Riset dan Pengabdian Masyarakat Direktorat Jenderal Penguatan Riset dan Pengembangan Kementerian Riset, Teknologi dan Pendidikan Tinggi (Kemenristek Dikti) for providing research grants for beginner lecturers. Thanks also go to PPPM Universitas Respati Yogyakarta who assisted in the process of conducting the research

6. References

- Al-Anwar. (2003). *The Good Scent Journal (Lavender)*. Georgia: The Good Scents Company 2444 Atlanta Road Smyrna Georgia 30080-2000.
- Buckle, J. (2001). Aromatherapy and diabetes. *Diabetes Spectrum*, 14(3), 124-126. doi:<https://doi.org/10.2337/diaspect.14.3.1>
- Buckle, J. (2015). Clinical aromatherapy essential oil in healthcare. Edisi ke-3. In: USA: Elsevier Inc.
- Coopersmith, S. (2010). *The Antecedent of Self Esteem*. San Fransisco: H Freeman and Company.
- Dewi, I. P. (2013). Aromaterapi Lavender Sebagai Media Relaksasi. *Artikel. Bali: Bagian Farmasi Universitas Kedokteran Udayana*.
- Ginting, B., & Regita, R. (2019). *Hubungan harga Diri dengan Kesepian narapidana Wanita di Lembaga Pemasyarakatan Tanjung Gusta*. Universitas Medan Area,

- Hurlock, B. E. (2016). Psikologi Perkembangan: Suatu Pendekatan Sepanjang Rentang Kehidupan.
- Juniartha, I. G. N. (2015). Hubungan Antara Harga Diri (Self-esteem) Dengan Tingkat Stres Narapidana Wanita Di Lapas Klas Iia Denpasar. *Coping: Community of Publishing in Nursing*, 3(1).
- Junior, J., Sica, D., & Black, H. (2008). Hypertension Primer-the essentials of high blood pressure: basic science, population science, and clinical management. In: USA: American Heart Association.
- Maramis, W. F., & Maramis, A. A. (2009). *Catatan ilmu kedokteran jiwa edisi 2*: airlangga university Press.
- Martini, F. (2006). *Anatomy and Physiology'2007 Ed*: Rex Bookstore, Inc.
- Maryatun, S. (2011). *Pengaruh Logoterapi Terhadap Perubahan Harga Diri Narapidana Perempuan Dengan Narkotika Di Lembaga Pemasyarakatan Kelas IIA Palembang*. Tesis,
- Mason, H., Vandoni, M., Debarbieri, G., Codrons, E., Ugargol, V., & Bernardi, L. (2013). Cardiovascular and Respiratory Effect of Yogic Slow Breathing in the Yoga Beginner: What is the Best Approach? *Evidence-Based Complementary Alternative Medicine*, 2013. doi:<https://doi.org/10.1155/2013/743504>
- McGuinness, H. (2007). *Aromatherapy, Therapy Basics 2nd edition*. London: Hodder Arnold.
- Potter, P. A., & Perry, A. G. (2006). *Fundamental of nursing 6th Edition*. Mosby: Louis Missouri.
- Price, S., & Price, L. (2011). *Aromatherapy for health professionals E-book*: Elsevier Health Sciences.
- Rahayu, R., & Sugita, S. (2018). Efektivitas Pemberian Aromaterapi Lavender Dan Jahe Terhadap Penurunan Frekuensi Mual Muntah Pada Ibu Hamil Trimester I Di BPM Trucuk Klaten. *Jurnal Kebidanan dan Kesehatan Tradisional*, 3(1), 19-26. doi: <https://doi.org/10.37341/jkkt.v3i1.62>
- Ramadhian, M. R., & Zettira, O. Z. (2017). Aromaterapi Bunga Lavender (*Lavandula angustifolia*) dalam Menurunkan Risiko Insomnia. *Jurnal Majority*, 6(2), 61-64.
- Setyoadi, K. (2011). *Terapi modalitas keperawatan pada klien psikogeriatrik* (Vol. 145). Jakarta: Salemba Medika.
- White, M. G. (2008). Anxiety, Fear and Breathing. Retrieved from <https://breathing.com/blogs/anxiety-panic-and-stress/anxiety>
- Yamada, K., Mimaki, Y., & Sashida, Y. (2005). Effects of inhaling the vapor of *Lavandula burnatii* super-derived essential oil and linalool on plasma adrenocorticotrophic hormone (ACTH), catecholamine and gonadotropin levels in experimental menopausal female rats. *Biological pharmaceutical bulletin*, 28(2), 378-379. doi:<https://doi.org/10.1248/bpb.28.378>
- Yosep, I. (2009). *Keperawatan Jiwa*. Bandung: Reflika Aditama.