

Research Article

Effectiveness of Deep Breath Relaxation and Lavender Aromatherapy against Preoperative Patient Anxiety

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ABSTRACT

Anxiety of the patient who will undergo surgery can result in failure of the operation. One way to overcome anxiety is by using deep breath relaxation techniques with lavender aromatherapy. This study aims to determine the effect of deep breathing relaxation techniques with lavender aromatherapy on preoperative patient anxiety at Martha Friska Brayan General Hospital, Medan. The study design was a Quasy experiment One-Group pre-post test. The sample of this study was 23 respondents and the sampling technique used was purposive sampling. Tool to collect data using questionnaires. Based on the results of the study, the level of anxiety of respondents before being given

deep breath relaxation techniques with lavender aromatherapy, the majority of patients with severe anxiety as much as 43.5% and after being given deep breathing relaxation techniques and Lavender aromatherapy, the majority of moderate patient anxiety are as much as 56.5%. Wilcoxon test results obtained $z=-4,202a$ with $p\text{ value}=0,000$ ($p < 0.05$). In conclusion, there is a significant effect of deep breathing relaxation techniques with lavender aromatherapy on preoperative patient anxiety.

Keywords: Deep breath relaxation techniques; Lavender aromatherapy; Anxiety; Pre operative

Introduction

Preoperative is the phase that begins when the decision to undergo surgery or surgery is made and ends when the patient is removed from the surgical shirt [1]. Surgery is a therapeutic effort that can pose a threat to the integrity of one's body and soul. Planned surgery can cause physiological and psychological responses in patients. The psychological response that usually occurs in preoperative patients is anxiety. Anxiety is a feeling of fear that has no apparent cause and is not supported by the situation. Anxiety can be felt by everyone if they experience pressure and deep feelings that cause psychiatric problems and can develop in the long term [2].

Preoperative anxiety is an anticipatory response to an experience that the patient considers being a threat to his role in life, bodily integrity, or even life itself. According to Hulu and Pardede [3] Anxiety in preoperative patients is characterized by physiological and psychological reactions, among others, increased pulse and breathing frequency, uncontrolled hand movements, moist palms, restlessness, asking the same questions repeatedly, difficulty sleeping, and frequent urination. The impact of anxiety for preoperative patients in which the body will respond physiologically to the actual and potential threats, in the face of surgery is where the hypothalamus will control the neurohormonal response, increasing heart rate. And the heart contracts more strongly where the volume of blood will be redistributed by vasoconstriction or narrowing of blood vessels in the skin, stomach, kidneys.

Increased blood volume will increase cardiac output (cardiac output) and blood flow to the muscles of the body causing muscles to become tense. The bronchus dilates and increases the breathing rate thereby increasing oxygenation which can relax the body [1]. In line with the statement of Pardede et al. [4], as a result of the anxiety of a very pre-operative patient, there is a possibility

that the operation cannot be performed, because patients who experience anxiety before surgery will appear abnormalities such as increased blood pressure so that if surgery is still performed it will cause difficulties in stopping bleeding, and even after surgery will interfere with the healing process. Deep breathing relaxation techniques were chosen as independent nursing interventions to reduce preoperative patient anxiety. Deep breathing relaxation techniques require proper application time. Patients will feel increasingly anxious nearing the time of surgery and the preoperative phase of the nursing role will end when the patient is sent to the operating room [5].

Several previous studies have conducted research to overcome anxiety that is using guided imagination relaxation and deep breathing relaxation. The research results by Aprianto et al. [6] at RA Kartini Hospital in Jepara, said that before the treatment of deep breathing, most respondents experienced severe anxiety of 46.7%, and after being given the intervention the level of anxiety was mild by 53.3% and there was an influence significant of both variables with $p\text{-value}=0,000$. While the results of research conducted by Pardede et al. [4] at Dr. H. Pane Association of TebingTinggi City, before performing deep breathing and hypnotic techniques, the majority of patients with moderate preoperative patients were 61.3% and after the intervention of anxiety, mild minority preoperative patients were 83.9% and there was a significant influence with $p\text{ value -value}=0,000$. The research results by Puspita et al. [5] at Tugurejo District Public Hospital Semarang there is a significant difference between the treatment group and the control group with a $p\text{-value}$ of 0,000.

Another psychological therapy that is able to overcome preoperative patient anxiety is the administration of Aromatherapy which is used through inhalation or inhalation will enter the limbic system where the aroma will be processed so that it can smell. Aromatherapy has a positive effect because it is known that a fresh, fragrant aroma stimulates sensory, receptors, and

ultimately affects other organs so that it can have a powerful effect on anxiety. Lavender aromatherapy can increase alpha waves in the brain and these waves help to create a sense of relaxation showing reduced anxiety in post partum mothers [7]. Lavender aroma therapy is a method of nursing therapy that uses ingredients such as volatile plant fluids or known as essential oils and aims to affect one's mood or health. The content of chemical compounds from essential oils of lavender aroma therapy can affect the work activities of the brain through the nervous system associated with the sense of smell [8,9].

Several previous studies have been conducted to overcome the use of aromatherapy. The results of research by Sriningsih and Hartono [10] at Tugu Hospital Semarang showed that in preoperative patients with spinal anesthesia before lavender aromatherapy, respondents who experienced severe majority anxiety were 40% and after being given after giving aromatherapy, moderate majority anxiety was 42.5% and there was 42.5% Significant influence is obtained p -value = 0,000. The results of research by Dewi [11] at Waganya Hospital in Denpasar, before given aromatherapy inhalation anxiety majority respondents, were mild by 73% and after debating aromatherapy inhalation anxiety the majority were not anxious by 53% and there was a significant influence with p -value=0,000. In contrast to the results of research [12], the independent test results of the t-test post-test anxiety between the treatment group with the control group obtained at-value of 2,500 with a significance value (p -value) of 0.019 so that the decision of the H_0 test was rejected and it was concluded that there was a difference in the average post-test anxiety between the treatment groups with the -group control. The results of research by Sulistyorini et al. [7], demonstrating a combination of full-blooded face therapy with lavender aromatherapy effectively reducing anxiety scores in postpartum mothers in infant care, from the paired t-test results obtained p -value=0,000<0.05 where anxiety scores before intervention 55.75 and after given intervention 50 / , 45. The results of research by Handayani [13], that the lavender aromatherapy, progressive muscle relaxation and guided imagery is effective in reducing preoperative anxiety (mean score before intervention 7.67 (SD 7,890), score after intervention 4.05 (SD 5,806) and there is a significant influence with p -value=0,000.

From data obtained by researchers from medical records at Martha Friska General Hospital in Medan, pre-operative patients from January to December 2015 totaled 4793 patients. From interviews conducted by researchers at Martha Friska General Hospital Medan in 8 patients where 3 patients said they were anxious and afraid when facing surgery and the results of observations of 5 patients shaking hands, difficulty thinking and cold acral patients this affected patients who would face operation. In handling anxiety that has so far only merely educated the patient about the actions before the operation, which is to tell patients to calm themselves not to be tense when doing surgery. The researcher is interested in researching by combining the two interventions in reducing preoperative patient anxiety, namely relaxing a Deep Breath with Lavender Aromatherapy. It can be expected to change the anxiety of patients who will interfere with the operation. Because researchers have not previously examined the effect of deep breathing techniques and lavender aromatherapy on preoperative patient anxiety, so they are interested in researching it because it aims to further reduce the anxiety level of preoperative patients.

Research Methodology

The study design was a quasi-experimental one with a pre-test only one group design model. In this study, researchers chose preoperative patients who were the study sample. Conducting an assessment of anxiety in preoperative patients and providing relaxation techniques in breathing with lavender aromatherapy. This study population was all patients who were going to operate at Martha Friska Brayan General Hospital Medan. Preliminary data in January-December 2015 were 4793 people. With an average number of operations per month 399 people. The sample in this study is all respondents who will perform Major Operations at Martha Friska Brayan General Hospital Medan. The sampling technique used in this study is purposive sampling, where sampling is based on certain considerations such as population characteristics or characteristics that have been previously known.

The sample criteria in this study were all preoperative patients who met the inclusion and exclusion criteria as follows: Inclusion Criteria: Patients who had no prior surgical experience. Patients who undergo major surgery at Martha Friska Brayan General Hospital in Medan. Patients can communicate well before surgery. Exclusion Criteria: Patient cito/emergency. Bivariate this research was tested using a computerized program through the Wilcoxon test with $\alpha = 0.05$ effectiveness of deep breathing relaxation with lavender aromatherapy at Martha Friska Brayan General Hospital Medan. If $p < 0.05$ means that there is an influence of deep breathing relaxation with lavender aromatherapy at Martha Friska Brayan General Hospital Medan.

Results

Based on Table 1, it can be seen the characteristics based on the age of majority > 40 years as many as 73.9%, the majority of the male sex as much as 60.9%, the majority of high school education as much as 60.9%, Other jobs as many as 9 people (39.1%), marital status as many as 17 people (73.9%) (Table 1).

Based on Table 2, it can be seen that the majority of Preoperative Patients in Martha Friska Brayan General Hospital are worried about 10 people (43.5%) (Table 2).

Based on Table 3, it can be seen that the Preoperative Patients at Martha Friska Brayan General Hospital After Giving Relaxation of Breath Breaths with Lavender Aromatherapy the majority were anxious while 13 people (56.5%) (Table 3).

Based on Table 4 it can be seen that after being given deep breath relaxation therapy with lavender aromatherapy, 10 people (43.5) of respondents in severe anxiety turned into moderate anxiety, 9 people (39.1) of respondents in moderate anxiety turned into mild, 10 people (43.9) respondents became mild anxiety. Anxiety before a deep breath relaxation intervention with lavender aromatherapy is 10 people (43.5) heavy anxiety, 9 people are moderate anxiety (39.1), mild anxiety (17.4) and the average after breathing relaxation intervention with lavender aromatherapy is changing moderate anxiety 13 people (56.5) mild anxiety 10 people (43.5) (Table 4).

Wilcoxon test analysis results, it is known that the value of $p=0.000$ ($p<0.05$), which means there is the effect of deep breathing relaxation with lavender aromatherapy in preoperative patients at

Table 1: Frequency distribution of pre operative respondent characteristics at martha friska brayan general hospital in medan.

Characteristics	n	(%)
Age		
<17 years old	1	4.3
18-40 years old	5	21.7
>40 years old	17	73.9
Gender		
Male	14	60.9
Female	9	39.1
Education		
Middle School	3	13.0
High School	14	60.9
Diploma	1	4.3
Bachelor	3	13.0
Master	2	8.7
Profession		
Civil Cervants	4	17.4
Housewife	3	13.0
Entrepreneur	15	65.2
The National Police	1	4.3
Marital Status		
Not Married	3	13.0
Married	17	73.9
Widow/Widower	3	13.0

Table 2: Distribution of anxiety frequency before giving deep breath relaxation with lavender aromatherapy.

Preoperative patient anxiety	n	%
Light Anxiety	4	17.4
Moderate Anxiety	9	39.1
Weight Anxiety	10	43.5

Table 3: Distribution of anxiety frequency after giving relaxation of deep breath with lavender aromatherapy.

Preoperative patient anxiety	n	%
Light Anxiety	10	43.5
Moderate Anxiety	13	56.5
Weight Anxiety	0	0

Table 4: Differences in pre operative anxiety before and after giving relaxation of a deep breath with lavender aromatherapy.

Anxiety Respondents	Light		Moderate		Weigth		P value	Z
	n	%	n	%	n	%		
Before	4	17,4	9	39,1	10	43,5	0,000	-4,202
After	10	43,9	13	56,5	0	0		

Martha Friska Brayan General Hospital. This shows that there are changes in anxiety before and after deep breathing relaxation interventions with lavender aromatherapy (Ha: Accepted).

Discussion

Anxiety before being given deep breath relaxation techniques with lavender aromatherapy

The results showed that the results of preoperative patient anxiety measurement before given deep breathing relaxation interventions with lavender aromatherapy in which of the 23 majority respondents were in severe anxiety were 10 people

(43.5%) Where from the results of the questionnaire before the intervention the average respondent answered experiencing nervousness, trembling, fear, worry, uneasy because they will undergo surgery.

Anxiety can cause physical and psychological changes. From the Frequency of Anxiety Respondents in RA Kartini Hospital in Jepara that 60 respondents were anxious, consisting of 3 people (5.0%) mild anxiety, 28 were moderate (46.7%) and 29 were severe anxiety people (48.3%) [6]. According to Gea [14], anxious state, the body will produce excessive hormone cortisol which will result in increased blood pressure, chest tightness, and emotional instability. As a result of the anxiety of a very pre-operative patient, there is a possibility that the operation cannot be carried out because in patients who experience anxiety before the operation will appear abnormalities such as increased blood pressure, so that if the surgery is still carried out it can cause complications, especially in stopping the bleeding, and even after surgery will interfere with the healing process.

Anxiety is a subjective experience of disturbing mental tension as a general reaction and inability to deal with problems or the presence of insecurity. Unpleasant feelings generally cause physiological symptoms (such as trembling, sweating, increased heart rate, etc.) and psychological symptoms (such as panic, tension, confusion, unable to concentrate, etc.). In Preoperative patients, many factors trigger anxiety, the existence of uncertainty or things that are not clear about the hospital environment, preoperative procedures, intra-operative procedures, and events that occur during post-operative. Conflicting perceptions occur if the operating experience to be passed is different from what he thinks, and there is a misunderstanding due to inaccurate information provided if the terms used are not understood [5].

According to the researchers' assumptions, the average individual who will undergo surgery or experience anxiety, both mild anxiety, moderate anxiety, to severe anxiety depends on the individual's own response. The results of the study found that the majority of preoperative patients experienced severe anxiety before treatment, anxiety experienced by preoperative patients in accordance with existing statements, where most respondents felt excessive worry; nervousness underwent surgery, accompanied by fear and seemed nervous because they would be operated on. This is a common thing for every individual who will undergo surgery because he has the perception that surgery is a threatening and frightening thing.

Anxiety after being given deep breath relaxation techniques with lavender aromatherapy

The results showed that the results of measuring the patient's anxiety after being given deep breathing relaxation techniques with lavender aromatherapy can be seen in the description of changes in anxiety showing the changes of the 23 majority respondents were on anxiety while 13 people (56.5%), Where from the results of the questionnaire after treatment of average intervention the respondent said that he experienced a change from nervousness, trembling, fear, worry, uneasy because he would undergo surgery.

Deep breathing relaxation is mental and physical freedom from tension and stress because it can change the cognitive perception

and affective motivation of patients. Relaxation techniques allow patients to control themselves when discomfort or pain occurs, physical stress, and emotional pain. Several studies have shown that deep breathing relaxation is very effective in reducing postoperative anxiety and pain [14]. Adding aromatherapy makes the patient's feelings decrease and calm. Where aromatherapy is a method of relaxation that uses essential oils in its implementation is useful for improving one's physical, emotional, and spiritual health. Various effects of essential oils/one of which is to reduce the intensity of pain and anxiety levels. Essential oils or herbal oils that are reducing/relieving pain include lavender.

The results of the study were supported by Aprianto [6], preoperative patients before the treatment of deep breathing, most respondents experienced severe and moderate anxiety as many as 14 (46.7%) respondents, then after the treatment was obtained the most anxious level was moderate anxiety i.e. 16 (53.3%) respondents. It is known that the average score of anxiety before relaxation with deep breathing is 41.70, after relaxation with deep breathing it drops to 33.40 with a mean difference of 8.3.

Supporting research results show that the frequency distribution is given before lavender aromatherapy intervention (pre-test), the average pain intensity felt by respondents is 7.65 with details of 17 people (85%) feeling severe pain, 3 people (15%) feeling pain moderate, and no one feels mild pain and is very heavy (uncontrolled). While after the aromatherapy lavender intervention (post-test), the average pain intensity of respondents is 4.65 with details of 1 person (5%) feeling severe pain, 2 people (10%) feeling mild pain, 17 people (85%) feel moderate pain. So it can be concluded that the intensity of pain after being given lavender aromatherapy is lower than the intensity of pain before being given lavender aromatherapy [15]. According to Soltani et al. [16], the use of lavender essential oil caused statistically significant reduction in daily use of acetaminophen in all three post-operative days but had not significant effects on pain intensity and frequency of nocturnal awakening.

According to the researchers' assumptions, after being given a deep breath relaxation technique with lavender aromatherapy the respondent's anxiety changed from the majority of severe anxiety to moderate anxiety. Deep breath relaxation techniques with anxiety lavender aromatherapy can eliminate tension in the muscles of the body and mind and provide calm and reduce stress and provide a sense of relaxation, lavender aromatherapy will provide stimulation to the brain so that it can control emotionally to provide comfort to the patient, thus able to reduce patient anxiety.

Difference anxiety after given relaxation technique deep breath and lavender aromatherapy

The results of this study have a significant effect on deep breathing relaxation techniques with lavender aromatherapy on the anxiety of pre-operative patients at Martha Friska Brayan General Hospital Medan, which on average experience anxiety levels of anxiety from 23 respondents, the majority are in severe anxiety, 10 people (43.5%) and after the relaxation of breathing with lavender aromatherapy, the majority were in anxiety while 13 people (56.5%) were assessed from the results of the questionnaire before the intervention and after the intervention.

Wilcoxon test results, showed that there was an effect of deep

breathing relaxation with lavender aromatherapy on the anxiety of pre-operative patients in Martha Friska Brayan General Hospital Medan with $p\text{-value}=0,000$ $Z=-4,202$ where there was a strong influence ($p<0.05$). The results of this study indicate that there is a change after combining deep breathing relaxation with lavender aromatherapy in preoperative anxiety. The results of this study are supported by the Frequency of Anxiety Respondents in RA Kartini Hospital in Jepara that 60 respondents were anxious consisting of 3 people (5.0%) mild anxiety, 28 were moderate anxiety (46.7%) and severe anxiety of 29 people (48.3%). The results support, pre-operative patients before the treatment of deep breathing, the majority of respondents experienced severe and moderate anxiety as many as 14 (46.7%) respondents, then after the treatment was obtained the most anxious level was moderate anxiety namely 16 (53.3%) respondents. It is known that the average score of anxiety before relaxation with deep breath is 41.70, after relaxation with deep breath it drops to 33.40 with a mean difference of 8.3 [6].

Based on the results of the study obtained data that the level of anxiety of respondents before given inhalation lavender aromatherapy is that there are no respondents (0%) who did not experience anxiety and experienced severe anxiety, 22 respondents (73%) experienced mild anxiety, and 8 respondents (27%) experienced moderate anxiety. After being given inhaled aromatherapy four times, data obtained that as many as 16 respondents (53%) did not experience anxiety, 10 respondents (33%) experienced mild anxiety, 4 respondents (14%) experienced moderate anxiety, and no respondents (0%) who experience severe anxiety.

From the results of the study, the initial anxiety level (pre-test) in the treatment group was obtained that as many as 4 people (50%) in the category of severe anxiety, 3 people (37.5%) in the category of moderate anxiety, and 1 person in the category of mild anxiety (12, 5%), whereas at the end (post-test) no-one experienced severe anxiety, 4 people (50%) moderate anxiety, 1 person (12.5%) mild anxiety and 3 people (37.5%) did not experience anxiety. Then it can be analyzed by Wilcoxon analysis test with a significance level of $p<0.05$, as contained in the appendix, the value of $p=0.011<0.05$ so that it can be interpreted that in the treatment group there are significant differences in the decrease in anxiety levels before and after given aromatherapy [17]. This research is supported by research conducted by Puspita et al. [5], showing that independent nursing interventions given 4 hours before the patient undergo surgery are effective against reducing preoperative anxiety. This is in accordance with research conducted by researchers at Tugurejo District Hospital Semarang in the control group by providing the Time Effectiveness of the Implementation of Deep Breath Relaxation Techniques. The intervention was given 4 hours before the patient entered the operating room, obtained a $p\text{-value}$ of 0,000. It was concluded that there was an influence of nursing intervention given 4 hours before the patient entered the operating room to reduce preoperative anxiety.

Anxiety occurs in the client who will be performed surgery because of the action to be performed. When surgery is performed under spinal anesthesia is a potential or actual threat to someone, so it can generate psychological and psychological stressful reactions and is a difficult experience for almost all clients, so it is not surprising that patients and families show behavior that leads to anxiety one way to reduce anxiety is by giving

aromatherapy. Taking deep breaths regularly can increase and improve the delivery of oxygen to all organs of the body. Routine deep breathing has been shown to reduce blood pressure. This is because deep breathing is an attempt for inspiration and expiration so that it affects the cardiopulmonary stretch [6]. The stretch will trigger an increase in baroreceptor reflexes which can stimulate the parasympathetic nerve and inhibit the sympathetic center. The parasympathetic nerve functions to control the function of the heart rate so that the body relaxes. Relaxing deep breathing is mental and physical freedom from tension and stress because it can change the cognitive perception and affective motivation of patients. Relaxation techniques allow patients to control themselves when discomfort or pain occurs, physical stress, and emotional pain. Several studies have shown that deep breathing relaxation is very effective in reducing postoperative anxiety and pain [6].

This with the addition of aromatherapy will increasingly provide comfort to the patient, by combining can be effective in reducing anxiety. Combining lavender aromatherapy is one treatment technique using the aromatherapy essential oil odor. Another supporting result is the decrease in anxiety in the experimental group after being given lavender inhalation aromatherapy by 4.33. The results of this reduction analysis using the dependent t-test obtained P-value=0.000 ($p < \alpha = 0.05$) [15]. Lavender oil containing linalool is one of the most widely used aromatherapy, inhaled (inhaled), or using massage techniques on the skin. The positive impact of aromatherapy on reducing anxiety levels will be more felt if given directly (inhalation) because the nose/smell has direct contact with the parts of the brain that are responsible for stimulating the effects of aromatherapy. Lavender aromatherapy works to stimulate the olfactory nerve cells and affect the limbic system. The limbic system is the center of pain, pleasure, anger, fear, depression, and various other emotions. The hypothalamus, which acts as a relay and regulator, generates messages to other parts of the brain and body parts. The message received is then converted into action in the form of the release of hormones 56 57 10 melatonin and serotonin which cause euphoria, relax or sedatives.

Average anxiety before and after lavender inhalation aromatherapy

The results obtained p-value 0,000 $p < \alpha$ (0.05), it can be concluded that there are differences in anxiety before and after aromatherapy while the mean difference in the golden post-test of the experimental group and the control group. The analysis results obtained p-value=0,000 $p < \alpha$ (0.05) and it can be concluded that there are differences in the average anxiety between the experimental group and the control group [18]. The researcher's assumption, deep breathing relaxation techniques with lavender aromatherapy, greatly helps reduce anxiety in patients who will perform surgery. However, several factors that can influence the success of this therapy are the age and readiness of respondents to receive the information conveyed. Combining the two therapies can greatly reduce anxiety in preoperative patients.

Conclusion

Preoperative patient anxiety before breathing relaxation therapy in the majority of severe anxiety and Preoperative patient

anxiety after breathing relaxation techniques in the majority of severe anxiety and There is a significant difference between preoperative patient anxiety before and after deep breathing relaxation techniques at Martha Friska Brayhan Hospital Field.

References

- Maryunani N (2014) Perioperative nursing care - preoperatively (before surgery). Jakarta: Trans Info Media.
- Marbun A, Pardede JA, Perkasa SI (2019) Efektivitas Terapi Hipnotis Lima Jariterhadap Kecemasan Ibu Pre Partum di Klinik Chelsea Husada Tanjung Bering in Kabupaten Serdang Bedagai. *Jurnal Keperawatan Priority* 2(2): 92-9.
- Hulu EK, Pardede JA (2016) Dukungan Keluarga Dengan Tingkat Kecemasan Pasien Pre Operatif Di Rumah Sakit Sari Mutiara Medan. *Academiedu*.
- Pardede JA, Sitepu SFA, Saragih M (2018) Pengaruh Teknik Relaksasi Nafas Dalam Dengan Terapi Hipnotis Lima Jari Terhadap Kecemasan Pre Operatif Di Rsud Dr. H. Kumpulan Pane Kota Tebing Tinggi. *Academiedu*.
- Puspita NA, Armiyati Y, Arif S (2014) Time Effectiveness of the Implementation of Deep Breath Relaxation Techniques to Reduce Anxiety in Patients Pre Major Surgical Abdomen Surgery at Tugurejo Regional Hospital Semarang.
- Aprianto D, Kristiyawati S P, Purnomo SEC (2013) Efektifitas Teknik Relaksasi Imajinasi Terbimbing Dan Nafas Dalam Terhadap Penurunan Kecemasan Pada Pasien Pre Operasi. *Karyailmiah*.
- Sulistyorini C, Wardani DA, Argiriani (2020) Effectiveness of Combination Full-Face Therapy with Lavender Aromatherapy on Post Partum Mother Anxiety in Baby Care. *Jurnal Medika: Karya Ilmiah Kesehatan* 5(1): 116.
- Purwanto B (2013) Herbal and Complementary nursing. Yogyakarta: NuhaMedika.
- Anderson E, Taareluan JA (2019) The Aroma of Lavender Therapy on Anxiety Patients Pre Cataract Surgery. *Nutrix Journal* 3(1): 8-12.
- Sriningsih I, Hartono R (2013) The Effect of Aromatherapy on Patient Anxiety Levels Before Surgery with Spinal Anesthesia at Tugu Hospital Semarang. *Jurnal Keperawatan Jiwa* 1(2): 25.
- Dewi KAS (2013) The effect of inhalation aromatherapy on decrease anxiety levels of patients with chronic renal failure undergoing hemodialysis at Wangaya Hospital. *Coping: Community of Publishing in Nursing*, 1(1).
- Fatmawati DP, Maliya A (2016) Effects of Progressive Relaxation and Lavender Aromatherapy on Decreased Anxiety in Preoperative Patients with Spinal Anesthesia. *Tesis Universitas Muhammadiyah Surakarta*.
- Handayani RS, Rahmayati E (2018) Effects of Lavender Aromatherapy, Progressive Muscle Relaxation and Guided Imagery on Preoperative Patient Anxiety. *Health Journal Kesehatan* 9(2):319-24.
- Gea NK (2014) Pengaruh Relaksasi Nafas Dalam Terhadap Penurunan Tingkat Kecemasan Pasien Pre Operasi di RSUD Kota Bekasi. *Skripsi Jakarta: Sekolah Tinggi Ilmu Kesehatan Medistra Indonesia*.
- Karlina SD, Reksosusodo S, Widayati A (2016) Pengaruh Pemberian Aromaterapi Lavender secara Inhalasiterhadap Penurunan Intensitas Nyeri Persalinan Fisiologis pada Primipara Inpartu Kala Satu Fase Aktif di BPM "FettyFathiyah" Kota Mataram. *Majalah Kesehatan FKUB* 2(2): 108-19.
- Soltani R, Soheilipour S, Hajhashemi V, Asghari G, Bagheri M, et

- al. (2013) Evaluation of the effect of aromatherapy with lavender essential oil on post-tonsillectomy pain in pediatric patients: a randomized controlled trial. *International journal of pediatric otorhinolaryngology* 77(9): 1579-81.
17. Merdikawati A, Wihastuti TA (2015) Aromatherapy Lavender Flowers with Adolescent Girls Anxiety Level When Pre Menstrual Syndrome. *Jurnal Keperawatan* 3(2).
18. Anastasia S Bayhakki, Nauli F (2015) Effects of Lavender Inhalation Aromatherapy on the Anxiety of Chronic Kidney Failure Underwent Hemodialysis. *Journal of Medicine* 2(2): 1511-2.

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