



## Autogenic Relaxation on Anxiety Among Pregnant Women at Trimulyo Community Health Center, East Lampung

Lusia Asih Wulandari<sup>\*1)</sup>; Sri Nowo Retno<sup>1</sup>

<sup>1)</sup> Aisyah University Pringsewu

### ARTICLE INFO

#### Article history:

Received 11 March 2021

Accepted 21 June 2022

Published 10 July 2022

#### Keyword:

Autogenic relaxation

Anxiety

Pregnancy

### ABSTRACT

Anxiety in pregnancy is commonly the result of certain concerns regarding the health condition of the fetus and the delivery process. It is estimated that 10% to 55.7% of pregnant women experience mild to severe anxiety. Autogenic relaxation is one type of non-pharmacological therapy to relieve anxiety symptoms. The current study aims to find out the effect of autogenic relaxation on the anxiety among pregnant women in the work area of Trimulyo CHC, East Lampung Regency. This was a quasi-experimental study with a non-randomized control group pretest-posttest design. The populations were pregnant women in the third trimester. 20 samples were assigned into the intervention group and the control group, which involved 10 pregnant women, respectively. Anxiety was assessed based on Pregnancy Related Anxiety Questionnaire-Revision2 (PRAQ-R2). The results from paired t-test presented that the mean anxiety before autogenic relaxation in the intervention and control group was  $36.10 \pm 4.581$  and  $35.80 \pm 4.709$ , respectively. After autogenic relaxation, the mean anxiety was  $24.00 \pm 2.108$  and  $35.90 \pm 4.067$ , respectively. It was found a significant difference in the mean anxiety after treatment between the two groups ( $p$ -value=0.000) by  $-11.90 \pm 1.449$ . Thus, autogenic relaxation had an effect on the anxiety among pregnant women. Autogenic relaxation application as non-pharmacological therapy is recommended to relieve anxiety in pregnant women.

This open access article is under the CC-BY-SA license.



#### Kata kunci:

Relaksasi autogenik

Kecemasan

Wanita hamil

#### <sup>\*</sup>) corresponding author

Lusia Asih Wulandari

Aisyah University Pringsewu

Email: [wulandaribudiyanto@gmail.com](mailto:wulandaribudiyanto@gmail.com)

DOI: 10.30604/jika.v7iS1.1188

Copyright @author(s)

### ABSTRAK

Kecemasan pada kehamilan terkait dengan perubahan psikologis adanya kekhawatiran akan kondisi kesehatan janin dan proses persalinan. Diperkirakan 10% hingga 55,7% wanita hamil mengalami kecemasan ringan hingga berat. Relaksasi autogenik merupakan salah satu jenis terapi non farmakologi yang dipercaya mampu menurunkan gejala kecemasan pada kehamilan. Penelitian ini bertujuan untuk mengetahui pengaruh relaksasi autogenik terhadap kecemasan wanita hamil di Wilayah Kerja Puskesmas Trimulyo, Kabupaten Lampung Timur. Ini merupakan penelitian eksperimen semu dengan rancangan tanpa diacak kelompok kontrol pretest-posttest. Populasinya adalah wanita hamil trimester III dengan 20 orang sampel, 10 untuk kelompok intervensi dan 10 untuk kelompok kontrol. Pengukuran kecemasan menggunakan Kuesioner Kecemasan terkait Kehamilan-Revisi 2 (PRAQ-R2). Analisis data dilakukan dengan uji t berpasangan. Hasil penelitian menunjukkan bahwa rata-rata kecemasan sebelum relaksasi autogenik pada kelompok intervensi  $36,10 \pm 4,581$ , dan pada kelompok kontrol  $35,80 \pm 4,709$ . Rata-rata kecemasan setelah relaksasi autogenik pada kelompok intervensi  $24,00 \pm 2,108$  dan pada kelompok kontrol  $35,90 \pm 4,067$ . Sebelum perlakuan tidak terdapat perbedaan kecemasan antara kelompok intervensi dan kelompok kontrol ( $p = 0,887$ ) dan setelah perlakuan terdapat perbedaan signifikan rata-rata

kecemasan antara kelompok intervensi dan kelompok kontrol ( $p=0,000$ ) dengan selisih rata-rata  $-11,90 \pm 1,449$ . Dapat disimpulkan bahwa relaksasi autogenik berpengaruh terhadap kecemasan wanita hamil. Relaksasi autogenik dapat dijadikan salah satu terapi untuk menurunkan kecemasan pada wanita hamil.

This open access article is under the CC-BY-SA license.



## INTRODUCTION

There are several important events during a woman's life, one of which is pregnancy. However, women often face an emotional crisis during pregnancy. During pregnancy, women will experience various physical and social changes so that they are very vulnerable to psychological adverse conditions, for example mood changes, emotional disturbances, and anxiety disorders (Hamzehgardeshi et al., 2021). Based on previous studies, pregnancy-related anxiety disorders have different the prevalences by region. It is currently estimated to reach 10% in developed countries and 25% in developing countries (Shahhosseini et al., 2015). In general, this study aims to determine the effect of autogenic relaxation on anxiety among pregnant women in the work area of Trimulyo CHC, East Lampung Regency in 2021. It is expected that this study can be an input for developing health programs, especially in an effort to overcome anxiety problems among pregnant women using non-pharmacological therapy.

There are many psychological stressors for pregnant women, such as worries towards the development and health of the fetus, financial adequacy, uncertainty regarding the capability of being a good mother for the baby, the delivery and childbirth process as well as postpartum conditions. Of course, those stressors may lead to psychodynamics of pregnancy-related anxiety. Stress full and anxiety feelings as well as emotional changes during pregnancy are known to be associated with a significant increase in certain hormones in women, namely estrogen and progesterone. Moreover, somatic-biological conditions that usually exist in pregnancy can also disrupt the balance of neurotransmitters along with the receptors. Therefore, pregnant women will tend to experience adverse emotions, stress, and anxiety (Laksmi et al., 2017). Anxiety disorders are the found among pregnant women, which may due to certain influential factors such as environmental factors related to the stress of daily life, social factors related to family support. Furthermore, economic factors (income, work and education) can also increase anxiety (Araji et al., 2020).

Basically, pregnancy-related anxiety is a normal condition among women of childbearing age. However, severe anxiety may lead to a negative physical and mental impact and can lead to adverse effect in fetal development, for example the incidence of hyperactivity, autism, and certain neuro developmental disorders (Hamzeh gardeshi et al., 2021). Pregnant women often have erratic emotions and moods which can affect physiological conditions of the body, namely regarding blood pressure, heart rate, sweat gland activity, adrenaline production, gastric acid secretion and so on. Moreover, pregnant women with a high level of anxiety were found to be vulnerable to the risk of preterm birth and even miscarriage incidence (Indrayani & Djami, 2016).

The impact caused by anxiety in pregnancy is quite a lot, so there is a need for proper management. The main goal of overcoming anxiety in pregnancy is to avoid escalation in the anxiety symptoms while improving woman's quality of life. Management can be performed through non-pharmacological (psychotherapy) and pharmacological therapies (Araji et al., 2020). Pharmacological therapy is anxiety therapy uses drugs, especially anti-depressant drugs. However, all psychotropic drugs can cross the placenta and can cause exposure to the uterus and fetus so that they can increase the risk of drug intoxication, fetal congenital abnormalities, with drawal syndrome and neurobehavioural disorders (Laksmi et al., 2017). Meanwhile, non-pharmacological therapy does not involve drugs so that it does not pose a risk to the mother and fetus. Non-pharmacological management can use psychosocial techniques such as relaxation techniques and diaphragmatic breathing (Araji et al., 2020).

One relaxation therapy that is believed to be able to help relieve anxiety is autogenic relaxation therapy which was developed by German psychologist Johannes Heinrich Schultz in 1920. This relaxation technique is a type of relaxation technique that focuses on efforts to increase feelings of calm and relaxation in the body. The purpose of relaxation is basically to encourage the body's natural relaxation response by regulating breathing so as to produce a happier feeling and relieve anxiety (Legg & Lindberg, 2019). The fundamental principle of anxiety reduction by autogenic relaxation therapy technique is an improve in blood flow and stimulation of endorphins. When a person performs autogenic relaxation, betaendorphins will be secreted and be hold by receptors in the hypothalamus and limbic system which function to regulate anxiety and as a natural sedative (Haruyama, 2011 in Manalu et al., 2020).

Studies related to the effectiveness of autogenic relaxation on anxiety among pregnant women have not been widely carried out. A researcher who conducted such study was Sulastri, (2018) wherein the results presented that autogenic relaxation 3 times of exercise with a duration of 15-20 minutes each exercise was proven to be effective in relieving anxiety, which is assessed based on anxiety level among pregnant women ( $p$ -value 0.000). Furthermore, a study conducted by Ekarini, Krisanty, & Suratun, (2018) revealed that autogenic relaxation therapy was effective in reducing the level of anxiety. Likewise, a study conducted by Farada, (2011) presented that autogenic relaxation therapy was effective in reducing the anxiety level of primigravida pregnant women in the third trimester ( $p$ -value 0.010).

Based on the results of a pre-survey at Trimulyo CHC, East Lampung Regency in August 2021, there were 538 pregnant women. Interviews with 10 pregnant women in the third trimester revealed a fact that all expressed concern about the pregnancy and childbirth process, as well as

anxious feeling about the condition of the fetus to be born, especially during the Covid-19 pandemic.

Based on the above background, the hypothesis to be proposed in the current study is that autogenic relaxation has certain effect on anxiety among pregnant women in the work area of Trimulyo CHC, East Lampung Regency in 2021.

## METHOD

### *Participant characteristics and research design*

This was a quasi-experimental study with a non-randomized control group pretest-posttest design. This study was conducted in the Work Area of Trimulyo Community Health Center, East Lampung Regency in March 2022. The inclusion criteria involved here were third trimester pregnant women, willing to be respondents and fluent in communication. The exclusion criteria involved here were pregnant women under doctor's supervision due to poor health conditions such as having placenta previa, those who were self-isolated for COVID-19, and those who were undergoing medical therapy for anxiety.

### *Sampling procedures*

The samples were selected using purposive sampling technique. At first the researchers identified all the characteristics of the population. Then the researchers determined the intended samples based on their considerations. The targeted population in this study were pregnant women in the Work Area of Trimulyo CHC, East Lampung Regency, as many as 538 people. A sample of 20 pregnant women were assigned to the intervention group and the control group, which involved 10 pregnant women, respectively. Recommendations for the implementation of the study were obtained from Aisyah University and permission provided by the study site.

### *Sample size, power, and precision*

WHO sample size software. Based on the formula, the estimated sample size used was calculated based on the study conducted by Manalu et al., (2020) where the mean difference between before and after treatment was 17.0 and the variance was 72.25. Thus, it was obtained a sample size of 8 pregnant women. Since there were two groups involved in the current study, a correction of 20% was made so that the total sample involved was 20 people, wherein of 10 people were assigned in the intervention group and 10 people were assigned in the control group.

The variables involved here included the independent variable, namely autogenic relaxation and the dependent variable, namely the anxiety of pregnant women. The instrument used here was the Pregnancy Related Anxiety Questionnaire-Revision2 (PRAQ-R-) developed by Huizink et al., (2016) which consists of 10 question items. Such tool had been tested for validity and reliability. The results of the validity test on PRAQ-R2 showed a correlation value range of 0.51-0.63 with a Cronbach Alpha value of 0.85 so that this instrument was declared reliable in measuring anxiety among pregnant women. The answers to each PRAQ-R2 question item used a Likert scale, namely 1: never, 2: sometimes, 3: quite often, 4: often, and 5: very often. The highest total answer score from PRAQ-R2 was 50 and the

lowest was 10, wherein the higher the score, the higher the anxiety level of pregnant women (Huizink et al., 2016).

### *Data analysis*

Univariate analysis applied here resulted in the mean/median score of each variable to be studied and the distribution of respondents' characteristics. Bivariate analysis was used to determine the effect of autogenic relaxation on the anxiety of pregnant women. If the two groups of data being involved were normally distributed (Shapiro-Wilk test; p-value  $> \alpha$  value of 0.05) then the statistics used were parametric two unpaired groups, namely the independent sample t-test. If the data were not normally distributed, then the data analysis should be performed using a non-parametric statistical test for two unpaired groups, namely the Mann-Whitney test. This analysis was carried out using a computer program, the statistical test decision used a significance degree of 95% and an error rate ( $\alpha$ ) = 5%. For the interpretation of results, if p value value was  $< \alpha$  value of 0.05, it could be concluded that H0 was rejected (an effect was found). On the other hand, if p value was  $> \alpha$  value of 0.05, it could be concluded that H0 was accepted (no effect was found).

## RESULTS AND DISCUSSION

### *Characteristic of Respondents*

Most of the respondents were categorized in the best age for childbearing (20-35 years) as many as 15 people (75.0%) and 5 people (25.0%) aged  $> 35$  years. By the parity, most of the respondents were multigravida as many as 13 people (65.0%) while 7 people (35.0%) were primigravida. By the education level, most of the respondents graduated from secondary education as many as 16 people (80.0%) and 4 people (20%) graduated from higher education. Meanwhile, by employment status, most of the respondents were housewives, namely 13 people (65.0%) and 7 people (35.0%) were self-employed. The results of the analysis revealed that no significant difference was found in the characteristics of the respondents between the intervention group and the control group ( $p > 0.05$ ), meaning that the age, parity, education level and employment status of the two groups were equal.

According to many experts, there are several causative factors for the occurrence of anxiety among pregnant women. The first factor is social support. Social support facilitates a person's coping behavior. Coping learned is related to the behavior or skills that individuals use to adapt to environmental events or unusual situations (Indrayani & Djami, 2016). Low social support will increase the risk of anxiety among pregnant women (Nath et al., 2019). Biological susceptibility tends to be related to neurotransmitter abnormalities such as dysregulation of gamma amino butyric acid (GABA), serotonin or norepinephrine in the limbic system (Indrayani & Djami, 2016).

The next factor is the level of knowledge. In general, higher knowledge levels will tend to lead to more adaptive coping with anxiety compared to individuals with lower knowledge levels (Indrayani & Djami, 2016). Regarding maternal age, the older a person is, the more constructive she is in applying coping technique towards the problems she faces (Indrayani & Djami, 2016). The emergence of

anxiety in pregnant women can occur in the first trimester, stabilize in the second trimester and reappear in the third trimester or often called the waiting period where pregnant women will again feel worried that their baby will be born at any time. Discomfort due to pregnancy reappears, there are feels strange and has a body image disorder (Jannah, 2012). Pregnancy-related anxiety is commonly diagnosed in the last trimester of pregnancy. Such kind of anxiety is related to childbirth since it is considered as an experience that may lead to fear among some pregnant women. Such feeling even happens to women who have experienced previous births. Even though every condition in pregnancy has been highly anticipated, the existence of fear may worsen as birth approaches. Such fear will increase the risk of pregnancy-related anxiety (Silva et al., 2017).

Related to the effect of work, housework is related to women's mental health, monotonous household routines and the small possibility to change can be determinants of psychological disorders. Lack of free time and household routines can discourage many women, which can further lead to the development of customary mental disorders such as anxiety (Silva et al., 2017). Another factor is education. Education is an integral component of prenatal care. An adult with a low level of education is less able to understand and use information than an adult with a higher education (Indrayani & Djami, 2016). Pregnant women with higher education tend to be able to handle stress in a better way during pregnancy (Nath et al., 2019).

Health conditions and history of previous pregnancies can also affect anxiety in pregnancy. A person's general health has a real effect as a predisposition to anxiety. If the health status is poor, it will have a higher level of anxiety (Indrayani & Djami, 2016). Previous pregnancy history is associated with maternal anxiety, complications in previous pregnancies such as abortion and premature birth have an impact on ongoing pregnancies. Therefore, a history of complications in past pregnancies has a negative effect on anxiety levels in subsequent pregnancies (Silva et al., 2017). There was found 5.2 times greater risk of experiencing anxiety among women with high-risk pregnancies compared to those with low-risk pregnancies. High-risk pregnancy requires a higher level of care, higher number of doctor visits, and more intensive follow-up. Such actions definitely imposes additional cost and also lead to time constraints for patients. Although high-risk diseases can improve a woman's adaptability, she may experience more fears of such diseases, that will further affect pregnancy outcomes in the form of maternal and fetal/infant health (Araji et al., 2020). Regarding obesity, women who are obese have a higher risk to experience mental health problems before pregnancy. Obesity during pregnancy was found to have a correlation with certain complications such as gestational diabetes, preeclampsia, and cesarean section delivery which might increase anxiety among pregnant women. In addition, obese pregnant women were found to be more vulnerable to anxiety disorders due to excessive weight gain and/or postpartum weight retention (Araji et al., 2020).

### ***Anxiety of Pregnant Women Before Treatment (Pretest)***

Before treatment (pretest), the mean anxiety of pregnant women in the intervention group was  $36.10 \pm 4.581$ , the lowest anxiety score was 30 and the highest score was 46. Within the scope of 95% confidence level, it is accepted that before the treatment (pretest) the mean anxiety of pregnant women in the intervention group was in the range of 32.82 to 39.38. Meanwhile, the mean anxiety of pregnant women

in the control group in the first measurement (pretest) was  $35.80 \pm 4.709$ , the lowest score was 29 and the highest score was 44. Within the scope of 95% confidence level, it is accepted that in the first measurement (pretest) the mean anxiety of pregnant women in the control group was in the range of 32.43 to 39.17.

During pregnancy, women will experience various physical and social changes so that they are very vulnerable to psychological problems such as mood changes, emotional disturbances, and anxiety disorders (Hamzeh gardeshi et al., 2021). Anxiety is a universal experience among human, an unpleasant emotional response, full of worry, an unexpressed and undirected fear because a source of threat or thoughts of something that will come are unclear and unidentified (Solehati & Kosasih, 2015). Anxiety is an emotional state characterized by feelings of fear (apprehension), tension and an increase in autonomic nervous activity. Anxiety is characterized by feelings of fear, such as fear of facing the future, uncertainty about the future, feelings of worry, an emotional attitude that is characterized by feelings of restlessness, restlessness, the emergence of excessive movements, feelings of psychological tension (Indrayani & Djami, 2016).

There are many psychological stressors for pregnant women, such as worries towards the development and health of the fetus, financial adequacy, uncertainty regarding the capability of being a good mother for the baby, the delivery and child birth process as well as postpartum conditions. Of course, those stressors may lead to psychodynamics of pregnancy-related anxiety. Stress full and anxiety feelings as well as emotional changes during pregnancy are known to be associated with a significant increase in certain hormones in women, namely estrogen and progesterone. Moreover, somatic-biological conditions that usually exist in pregnancy can also disrupt the balance of neurotransmitters along with the receptors. Therefore, pregnant women will tend to experience adverse emotions, stress, and anxiety (Laksmi et al., 2017).

The findings presented in the current work are in line with a study conducted by Manalu et al., (2020) on the Effect of Autogenic Relaxation on Anxiety Levels among pregnant women in Deli Serdang, where the mean score of anxiety of pregnant women before autogenic relaxation was  $32.95 \pm 7.790$ . Furthermore, a study conducted by Rosida, Imardiani, & Wahyudi, (2019) on the Effect of Autogenic Relaxation Therapy on Patient Anxiety in the Intensive Care Unit of Palembang Pusri Hospital also presented that the mean level of anxiety of pregnant women before treatment was  $43.55 \pm 17.951$ .

Based on the description above, it can be explained that anxiety among pregnant women is a common condition.

However, severe anxiety may lead to a negative impact on the health condition of the mother as well as the fetus. The emergence of anxiety symptoms during pregnancy, especially during the third trimester, can be associated with the time approaching delivery so that feelings of worry about the delivery process and the condition of the fetus to be born arise. Regarding the findings presented in the current work, the mean anxiety symptoms of pregnant women before treatment were quite high, both in the intervention group and the control group. To avoid an increase in anxiety symptoms, it is necessary to carry out appropriate management, one of which is through relaxation therapy.

### ***Anxiety of Pregnant Women After Treatment (Posttest)***

After treatment (post test), the mean anxiety of pregnant women in the intervention group was  $24.00 \pm 2.108$ , the lowest anxiety score was 21 and the highest score was 27. Within the scope of 95% confidence level, it is accepted that the mean anxiety of pregnant women in the intervention group after treatment was in the range of 22, 49 to 25.51. Meanwhile, the mean anxiety of pregnant women in the control group in the second measurement (posttest) was  $35.90 \pm 4.067$ , the lowest anxiety score was 31 and the highest score was 43. Within the scope of 95% confidence level, it is accepted that the mean anxiety of pregnant women in the control group in the second measurement was in the range of 32, 99 to 38.81.

The main goal of overcoming anxiety in pregnancy is avoid escalation in the anxiety symptoms while improving woman's quality of life. Management can be performed through non-pharmacological (psychotherapy) and pharmacological therapies (Araji et al., 2020). Pharmacological therapy is anxiety therapy uses drugs, especially anti-depressant drugs. However, all psychotropic drugs can cross the placenta and can cause exposure to the uterus and fetus so that they can increase the risk of drug intoxication, fetal congenital abnormalities, with drawal syndrome and neuro behavioural disorders (Laksmi et al., 2017). Meanwhile, non-pharmacological therapy does not involve drugs so that it does not pose a risk to the mother and fetus. Non-pharmacological management can use psychosocial techniques such as relaxation techniques and diaphragmatic breathing (Araji et al., 2020).

The findings presented in the current work are in line with a study conducted by Manalu et al., (2020) which presented that the mean score of anxiety before autogenic relaxation was  $32.95 \pm 7.790$  and after autogenic relaxation it decreased to  $15.95 \pm 3.748$ . In addition, a study conducted by Rosida, Imardiani, & Wahyudi, (2019) presented that the mean anxiety of respondents decreased to  $36.67 \pm 17.254$  after autogenic relaxation.

Based on the description above, it can be explained that the mean anxiety of pregnant women in the second measurement (pretest) in both the intervention group and the control group changed. After being given the intervention 2 times a day for 3 days, the mean anxiety symptoms of pregnant women in the intervention group experienced a fairly high decrease, while the control group experienced only experienced light changes. This finding illustrated that autogenic relaxation provided a sense of comfort for pregnant women so as to relieve anxiety symptoms.

#### Normality Test

In the current work, there were < 50 samples involved, so that the Shapiro-Wilk test was applied as the selected normality test. If  $p > 0.05$  then the data group was declared normally distributed. Based on the results of the normality test, it was found that the data in the intervention group and the control group were normally distributed.

**Table 1**  
*Difference in the mean anxiety before and after treatment between the two groups*

Anxiety	Group				Mean Difference $\pm$ SE	CI=95%		p-value
	Intervention		Control			Lower	Upper	
	Mean	SD	Mean	SD				
Before Treatment ( <i>Pretest</i> )	36.10	4.581	35.80	4.709	0.30 $\pm$ 2.078	-4.065	4.665	0.887
After Treatment ( <i>Posttest</i> )	24.00	2.108	35.90	4.067	-11.90 $\pm$ 1.449	-15.018	-8.782	0.000*

\*Significant,  $p$ -value<0.05

Based on the results presented in the table above, it was revealed that the mean anxiety of pregnant women in the intervention group before treatment was  $36.10 \pm 4.581$  and in the control group it was  $35.80 \pm 4.709$  with a mean difference between the two groups of  $0.30 \pm 2.078$ . The results of the independent t-test analysis obtained a p-value of 0.887 ( $p > \alpha 0.05$ ), meaning that before treatment there was no significant difference in the anxiety of pregnant women between the intervention group and the control group. Meanwhile, after treatment the mean anxiety of pregnant women in the intervention group was  $24.00 \pm 2.108$ , and in the control group it was  $35.90 \pm 4.067$  with the mean difference between the two groups of  $11.90 \pm 1.449$ . The results of the independent t test analysis obtained a p-value of 0.000 ( $p < \alpha 0.05$ ), meaning that after treatment there was a significant difference in the anxiety of pregnant women between the intervention group and the control group. In other words, it can be interpreted that there was an effect of autogenic relaxation. The level of anxiety of pregnant women who were given autogenic relaxation were significantly lower than the control group or the group that was not given autogenic relaxation.

The findings presented in the current work are in line with the theory developed by German psychologist Johannes Heinrich Schultz in 1920 that one of the relaxation therapies that is believed to be able to help relieve anxiety is autogenic

relaxation therapy. This relaxation technique is a form of relaxation technique that focuses on efforts to increase feelings of calm and relaxation in the body. The purpose of relaxation is basically to encourage the body's natural relaxation response by regulating breathing so as to produce a happier feeling and relieve anxiety (Legg & Lindberg, 2019).

The findings presented in the current work are in line with the study conducted by Farada, (2011) which presented that autogenic relaxation therapy was effective in reducing the anxiety level among primigravida women in the third trimester of pregnancy. Furthermore, a study conducted by Manalu et al., (2020) presented that there was an effect of autogenic relaxation on the level of anxiety among pregnant women and the difference between before and after treatment was  $17.0 \pm 8.5$ . A study conducted by Sulastri, (2018) further showed the similar finding that giving autogenic relaxation for 3 days with a duration of time for each exercise between 15-20 minutes was proven to be effective in relieving anxiety among pregnant women.

Based on the description above, it can be explained that autogenic relaxation was proven to be effective in relieving anxiety among pregnant women. The group of pregnant women who received autogenic relaxation intervention 2 times a day for 3 consecutive days with a duration of 15-20 minutes each exercise had significantly lower anxiety symptoms than the control group. Based on the

measurement results using the Pregnancy Related Anxiety Questionnaire-Revised2 (PRAQ-R2), the mean difference in anxiety was  $11.90 \pm 1.449$ . Such finding can be due to the psychological stressors that have an impact on the emergence of anxiety among pregnant women, such as worry regarding the birth process, the development and health of the fetus, and also postnatal condition. Such worries may cause the sympathetic nervous system to work more dominantly which resulted in increased production of catecholamine (epinephrine and norepinephrine) and cortisol hormones as stress-related hormones. Meanwhile, suggestions in autogenic relaxation will create feelings of warmth, calm breathing, and heart rate so as to decrease the work of the sympathetic nervous system that produces the hormone cortisol. As explained by Haryani & Marleni, (2019), a positive stimulus from autogenic relaxation will reduce the activity of the HPA (Hypothalamic Pituitary Adrenal) Axis, which is marked by a decrease in the hormone CRF (Corticotropin Releasing Factor) in the hypothalamus as well as the stimulation in the anterior pituitary to release Adrenocorticotropic hormone (ACTH).

When ACTH is released, the adrenal medulla will reduce the production of catecholamine hormones and cortisol as stress hormones. As an effect of decreasing the work of the sympathetic nervous system, there will be an increase in the work of the parasympathetic nervous system so that beta endorphins will be secreted and hold by receptors in the hypothalamus and limbic system which function to regulate anxiety and as a natural sedative. Thus, there will be a decrease in the symptoms of anxiety among pregnant women through this process.

#### LIMITATION OF THE STUDY

This study has limitations that can be taken into consideration for future researchers in order to obtain better findings. Such limitations include the scope of study which only covered one work area of CHC. In addition, the number of samples used in this study was also limited, so that the results of the study cannot be generalized to a wider population. Furthermore, this study only involved one independent variable that affected anxiety in pregnant women, namely treatment in the form of autogenic relaxation. There are still several other independent variables that are able to explain and have an effect on the anxiety variable among pregnant women.

#### CONCLUSIONS AND SUGGESTIONS

Based on the discussion described in the previous section, there were several conclusions. *The results* from paired t-test presented that the mean anxiety before autogenic relaxation in the intervention and control group was  $36.10 \pm 4.581$  and  $35.80 \pm 4.709$ , respectively. After autogenic relaxation, the mean anxiety was  $24.00 \pm 2.108$  and  $35.90 \pm 4.067$ , respectively. In addition, a significant difference in the mean anxiety after treatment between the two groups was also found ( $p$ -value = 0.000) by  $-11.90 \pm 1.449$  (CI; 95%: 15,018-8,782). Thus, autogenic relaxation had an effect on the anxiety among pregnant women.

Health workers (at CHCs) are expected to provide health education for pregnant women about autogenic relaxation as a non-pharmacological treatment to help relieve anxiety among pregnant women. Future researchers are expected to conduct a study related to maternal anxiety among pregnant

women by using other non-pharmacological therapies so that they can expand information for the community, especially for pregnant women.

#### ETHICAL CONSIDERATIONS

##### Funding

The authors did not receive any financial support from any institution or organization for the submitted article. There was no funding was received for the preparation until completion of this manuscript

##### Conflict of Interest

No conflict of interest that is directly or indirectly related to the current article was found.

#### REFERENCES

- Araji, S., Griffin, A., Dixon, L., Spencer, S.-K., Peavie, C., & Wallace, K. (2020). An Overview of Maternal Pregnancy-related anxiety and the Post-Partum Period. *Journal of Mental Health & Clinical Psychology*, 4(4), 47–56. <https://doi.org/10.29245/2578-2959/2020/4.1221>
- Ekardini, N. L. P., Krisanty, P., & Suratun, S. (2018). Pengaruh Relaksasi Autogenik terhadap Tingkat Kecemasan dan Perubahan Tekanan Darah pada Pasien Riwayat Hipertensi. *Jkep*, 3(2), 108–118. <https://doi.org/10.32668/jkep.v3i2.206>
- Farada, R. A. (2011). *Pengaruh Teknik Relaksasi Autogenik terhadap Tingkat Kecemasan pada Ibu Primigravida Trimester III di Wilayah Kerja Puskesmas Kotakulon Kabupaten Bondowoso*. University of Jember.
- Hamzehgardeshi, Z., Omidvar, S., Amoli, A. A., & Firouzbakht, M. (2021). Pregnancy-related anxiety and its associated factors during COVID-19 pandemic in Iranian pregnant women: a web-based cross-sectional study. *BMC Pregnancy and Childbirth*, 21(1), 1–9. <https://doi.org/10.1186/s12884-021-03694-9>
- Haryani, J., & Marleni, L. (2019). Pengaruh relaksasi autogenik terhadap penurunan tekanan darah pada penderita hipertensi. *Jurnal Ilmiah Multi Science Kesehatan*, 10(2). Diambil dari <http://jurnal.stikes-aisyiyah-palembang.ac.id/index.php/Kep/article/view/194>
- Huizink, A. C., Delforterie, M. J., Scheinin, N. M., Tolvanen, M., Karlsson, L., & Karlsson, H. (2016). Adaption of pregnancy anxiety questionnaire-revised for all pregnant women regardless of parity: PRAQ-R2. *Archives of Women's Mental Health*, 19(1), 125–132. <https://doi.org/10.1007/s00737-015-0531-2>
- Indrayani, & Djami, M. E. U. (2016). *Update Asuhan Persalinan dan Bayi Baru Lahir* (A. Maftuhin, Ed.). Jakarta: CV. Trans Info Media.
- Jannah, N. (2012). *Buku Ajar Asuhan Kebidanan: Kehamilan*. Yogyakarta: Andi Offset.
- Laksmi, P. W., Mansjoer, A., Alwi, I., Setiati, S., & Ranitya, R. (2017). *Penyakit-Penyakit Pada Kehamilan Peran Seorang Internis*. Jakarta: Interna Publishing FKUI.
- Legg, T. J., & Lindberg, S. (2019). What to Know About Autogenic Training. Diambil dari Healthline Media website: <https://www.healthline.com/health/mental-health/autogenic-training#The-bottom-line>

- Manalu, A. B., Siagian, N. A., Yanti, M. D., Yessy, P. A., Barus, D. T., & Purba, T. J. (2020). Pengaruh Pemberian Relaksasi Autogenik Terhadap Tingkat Kecemasan Ibu Primigravida di BPM Kurnia Kecamatan Deli Tua Kabupaten Deli Serdang. *Jurnal Doppler*, 5(1), 6–13.
- Nath, A., Venkatesh, S., Balan, S., Metgud, C. S., Krishna, M., & Murthy, G. V. S. (2019). The prevalence and determinants of pregnancy-related anxiety amongst pregnant women at less than 24 weeks of pregnancy in Bangalore, Southern India. *International Journal of Women's Health*, Volume 11(1), 241–248. <https://doi.org/10.2147/ijwh.s193306>
- Rosida, L., Imardiani, I., & Wahyudi, J. T. (2019). Pengaruh Terapi Relaksasi Autogenik Terhadap Kecemasan Pasien Di Ruang Intensive Care Unit Rumah Sakit Pusri Palembang. *Indonesian Journal for Health Sciences*, 3(2), 52. <https://doi.org/10.24269/ijhs.v3i2.1842>
- Shahhosseini, Z., Pourasghar, M., Khalilian, A., & Salehi, F. (2015). A Review of the Effects of Pregnancy-related anxiety on Children's Health. *Materia Socio Medica*, 27(3), 200. <https://doi.org/10.5455/msm.2015.27.200-202>
- Silva, M. M. de J., Nogueira, D. A., Clapis, M. J., & Leite, E. P. R. C. (2017). Anxiety in pregnancy: prevalence and associated factors. *Journal Of School Of Nursing University Of Sao Paulo*, 5(1), 1–8. <https://doi.org/10.1590/S1980-220X2016048003253>
- Solehati, T., & Kosasih, C. E. (2015). *Konsep & Aplikasi Relaksasi dalam Keperawatan Maternitas* (Anna, Ed.). Bandung: PT. Refika Aditama.
- Sulastri. (2018). *Pengaruh Teknik Relaksasi Autogenik Terhadap Tingkat Kecemasan Wanita hamil di BPM Lismarini dan BPM Kustirah Palembang tahun 2018*. Palembang Health Politechnic.

