



Increase Natural Serotonin Hormone with Pranayama Antenatal Yoga Method to Control Anxiety in Pregnant Women

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Abstract

The anxiety of pregnant women can be caused because the fear and fear that most pregnant women feel is anxiety and fear in facing childbirth. Anxiety will have a negative impact on pregnant women from pregnancy to delivery. The hormone serotonin as a mental health hormone that can prevent anxiety, mood, or depression can be produced by the body naturally. Some ways that you can increase the release of the hormone serotonin naturally are by exercising, massage, sunbathing in the sun, and meditation or yoga. Analyzing the increase in natural serotonin hormones with the pranayama antenatal yoga method to control anxiety in pregnant women. This research is quasi-experimental research, with a nonrandomized pretest-post-test control group design. The population in this study were pregnant women in the PMB "C" area. The number of samples was 20 pregnant women who were given yoga exercise treatment and 20 pregnant women as the control group. Statistical test using paired t-test. The results showed that yoga was significantly effective in overcoming maternal anxiety, the p-value showed 0.019 ($p < 0.05$), and the positive t-value indicated that yoga had a good impact on overcoming the anxiety of pregnant women. Yoga practice during pregnancy helps reduce anxiety, increase self-confidence in coping with childbirth and reduce physical complaints and prevent the increase in symptomatological symptoms, and has a statistically significant effect on anxiety levels. The results showed that yoga was significantly effective in overcoming maternal anxiety, the p-value showed 0.019 ($p < 0.05$), and the positive t-value indicated that yoga had a good impact on overcoming the anxiety of pregnant women. Yoga practice during pregnancy helps reduce anxiety, increase self-confidence in coping with childbirth and reduce physical complaints and prevent the increase in symptomatological symptoms, and has a statistically significant effect on anxiety levels. The results showed that yoga was significantly effective in overcoming maternal anxiety, the p-value showed 0.019 ($p < 0.05$), and the positive t-value indicated that yoga had a good impact on overcoming anxiety of pregnant women. Yoga practice during pregnancy helps reduce anxiety, increase self-confidence in coping with childbirth and reduce physical complaints and prevent the increase in symptomatological symptoms and has a statistically significant effect on anxiety levels.

Keywords: antenatal yoga, pranayama method, anxiety

Kecemasan ibu hamil dapat disebabkan karena rasa takut dan rasa takut yang paling banyak dirasakan oleh ibu hamil adalah rasa cemas serta takut dalam menghadapi persalinan. Kecemasan akan berdampak negatif pada ibu hamil sejak masa kehamilan hingga persalinan, seperti janin yang gelisah sehingga menghambat pertumbuhannya, melemahkan kontraksi otot rahim, dan lain-lain. Hormon serotonin sebagai hormon kesehatan mental yang dapat mencegah kecemasan, mood ataupun depresi dapat di-produksi oleh tubuh secara alami. Beberapa cara yang dapat meningkatkan pengeluaran hormon serotonin secara alami adalah dengan olah raga, pijat, berjemur di bawah matahari, serta meditasi atau yoga. Tujuan penelitian ini menganalisis peningkatan hormon serotonin alami dengan metode pranayama antenatal yoga untuk mengendalikan anxiety pada ibu hamil. Penelitian ini adalah penelitian eksperimen semu (quasi experimental), dengan rancangan nonrandomized pretest-posttest control group design. Populasi dalam

penelitian ini adalah ibu hamil di wilayah PMB "C". Pengukuran besar sample dalam penelitian ini menggunakan software Power Analysis Sample Size (PASS). Jumlah sample yaitu 20 ibu hamil yang diberikan perlakuan senam yoga dan 20 ibu hamil sebagai kelompok control. Uji statistik yang digunakan paired t-test. Hasil penelitian menunjukkan yoga efektif secara signifikan dalam mengatasi kecemasan ibu karena nilai p value menunjukkan 0,019 ($p < 0,05$) dan nilai selisih rerata berada didalam batas normal CI, serta nilai t hitung positif menandakan bahwa yoga membawa dampak baik dalam mengatasi kecemasan ibu hamil. Latihan yoga saat kehamilan membantu menurunkan kecemasan, menambah keyakinan diri dalam menghadapi persalinan dan mengurangi keluhan fisik dan mencegah peningkatan gejala simtomatologi dan memiliki efek yang signifikan secara statistik pada tingkat kecemasan.

Kata Kunci: kehamilan; yoga; metode pranayama; kecemasan

Introduction

Anxiety is a response to an unpleasant experience marked by a feeling of anxiety, or fear of facing a threat that will be experienced by someone accompanied by physiological stimulation. Anxiety is a normal thing that occurs in various circumstances, such as growth, changes, and new experiences (Mandagi, 2013). Anxiety can be a feeling of fear that has no clear cause and is not supported by the existing situation (Usman, F., Kundre, R., & Onibala, 2016). Anxiety is unavoidable in everyday life (Saseno, Pramono, G.K., 2013). Anxiety can be felt by everyone if they experience deep pressure and feelings that cause psychiatric problems and can develop over a long period of time (Shodiqoh, E., & Syahrul, 2014). Anxiety disorders are also more common in women (30.5%) than men (19.2%) (Sadock., 2015).

One study showed that 350,000,000 pregnant women have anxiety and psychological disorders that can reduce the quality of pregnancy outcomes. Indonesia has an incidence of pregnant women with anxiety of 56.5% and depression of 14.8%. Anxiety in pregnancy can

cause psychiatric disorders, reduce fetal quality, preeclampsia, spontaneous abortion, premature birth, low birth weight, postpartum depression, increase the risk of heart rhythm disturbances, and developmental delays and even personality disorders into adulthood (Gong, 2015).

Stunted growth and weakened uterine muscle contractions are some of the results of anxiety experienced by mothers from pregnancy to delivery which can harm the mother and fetus (Novitasari, 2013). High levels of anxiety in pregnant women have a risk of premature delivery (premature) and even miscarriage.

Anxiety in pregnant women besides having an impact on the birth process, can also affect the growth and development of the child. This anxiety occurs in the third trimester which can result in decreased birth weight and increased HHA (hypothalamic-pituitary-adrenal) activity, causing changes in steroid hormone production, impaired social behavior, and fertility rates as adults. Feelings of anxiety during pregnancy are closely related to emotional problems, hyperactivity disorder, decentralization, and cognitive development disorders in children (Shahhosseini, Z., Pourasghar, M., Khalilian, A., & Salehi, 2015)

Treatment with antidepressants is still debated about the benefits and risks for pregnant women and their fetuses (Field, 2016). The available antidepressants are as follows: First, selective serotonin reuptake inhibitors (SSRIs), which include SSRIs, Citalopram (Celexa), fluoxetine (Prozac), and sertraline (Zoloft), both serotonin and norepinephrine reuptake inhibitors (SNRIs), which include SNRIs, namely duloxetine (Cymbalta), and venlafaxine (Effexor XR), and the third Bupropion (Wellbutrin) and the fourth Tricyclic (Al., n.d.). Previous studies reported that more than 50% of pregnant women who received antidepressants still had relapses (Muzik, 2012).

Serotonin hormone as a mental health hormone that can prevent anxiety, mood or depression can be produced by the body naturally. Some ways that can increase the production of the hormone serotonin naturally are by exercising, massage, basking in the sun, and meditation or yoga (Field, 2016). Sports Prenatal Yoga or psychotherapy including (interpersonal psychotherapy, cognitive psychotherapy and personality psychotherapy) (Jiang, Q., Wu, Z., Zhou, L., Dunlop, J. & Chen, 2015). Practicing yoga during pregnancy is useful as a self-help medium that will reduce anxiety (Battle, 2015).

Method

This research is quasi-experimental research, with a nonrandomized pretest-posttest control group design. This research was conducted at PMB "C" Malang City, East Java Province. Time for collecting research data will be carried out from May to June 2020. The population in this study is

pregnant women in the PMB area "C". The measurement of the sample size in this study used the Power Analysis Sample Size (PASS) software. The number of samples is 20 pregnant women who were given the yoga exercise treatment and 20 pregnant women as the control group.

When the researcher conducted the research, the researcher gave an explanation about the purpose of the research, and the treatment of respondents that interviews and filling out questionnaires would be carried out, as well as providing an explanation about the right to withdraw and about the confidentiality of this research. After the respondents understood and agreed, the researchers conducted interviews and asked respondents to fill out a questionnaire via the Google form. Then the intervention given was antenatal yoga for 2 meetings within 4 weeks. Furthermore, interviews or filling out the questionnaire will be carried out again to determine the effect of the treatment given.

Using the HRS-A questionnaire measuring tool which consists of 14 items, with a scale of each item 0-4, with a total overall score of 0-56. Researchers conducted interviews and asked respondents to fill out questionnaires via the Google form. Data that has been collected through a questionnaire, edited and coded and then processed using the Stata program version 9.2. Then the data is analyzed to link the independent variable with the dependent variable. Data analysis used in this study was carried out in stages, including univariate and bivariate analysis. The statistical test used to determine the difference in anxiety of pregnant

women between before and after treatment, the method used is paired t-test.

After obtaining informed consent, research respondents were interviewed and filled out a Google form before and after treatment. This activity was carried out at the research location, namely at PMB "C" during the Yoga class. All procedures were carried out following the standards of the national research ethics committee and with the 1964 Helsinki Declaration, but this study did not require ethical approval.

Result and Discussion

The results of the univariable analysis aim to describe the characteristics of the research

subjects so that the data set turns into useful information. Based on the age of the mother in the yoga group, half (50%) were pregnant and 8 pregnant women (40%) in the control group were <20 years old. Maternal education was classified as high or at the high school level and above in the same two groups, namely 18 people in the treatment group and 18 people in the control group (90%). Based on the work of the mothers in the yoga and non-yoga groups, the majority of mothers did not work, namely 15 people (75%) in the treatment group and 14 people (70%) in the control group. Based on family income in the yoga and non-yoga groups, the majority of income \geq Rp. 2,781,564, namely 13 people (65%) in the treatment group and 11 people (55%) in the control group.

Table 1. Characteristics of Research Subjects

Characteristics	Group			
	Yoga (n=20)		No Yoga (n=20)	
	n	%	n	%
Mother's age				
< 20 years	10	50	8	40
20 – 35 years	8	40	7	35
> 35 years	2	10	5	25
Mother's Education				
Tall	18	90	18	90
Low	2	10	2	10
Mother's job				
Work	5	25	6	30
Doesn't work	15	75	14	70
Family Income				
< Rp. 2,781,564	7	35	9	45
\geq Rp. 2,781,564	13	65	11	55
Disease History				
There is	1	5	0	0
There isn't any	19	95	20	100

Anxiety can occur due to the high and low level of education that a person has. Pregnant women who have high knowledge with a higher level of education can handle their pregnancy well when compared to those who do not have a low level of education. The higher a person's education level, the greater the opportunity to seek treatment at health services. Conversely, low education will cause a person to experience stress, where the stress and anxiety that occurs is due to the lack of information that person gets. However, this is not in line with the results of the study, that almost all levels of education in the two groups were highly educated (90%) experiencing severe anxiety. Pregnancy is the happiest event in her life (Rokhmah, R, 2010).

The anxiety felt by pregnant women is related to the mother's age. Mothers who are young will experience a higher level of anxiety when compared to mothers who are old enough. The results showed that the age of the mother in the yoga group was half (50%) of pregnant women and 8 pregnant women (40%) in the control group were <20 years old. This is because young mothers have many factors that can cause them to experience anxiety, starting from their immature reproductive system and psychological readiness of mothers in facing childbirth. The anxiety that is felt is in the form of questions about her condition and what she will go through during labor later. Mothers are afraid of pain, vaginal tearing and possible complications that occur when facing labor. Neighbors' stories about the birth process made the mother feel even more anxious. The more mature the mother is, the lower the level of

anxiety she will feel because a mother of sufficient/mature age will be better prepared both mentally and physically. Women aged 20-35 years are physically ready to get pregnant, because their reproductive organs are fully formed, compared to women aged <20 years their reproductive organs are still in the developmental stage, so the level of anxiety is more severe (panic), while women aged >35 are partly classified as in pregnancies at high risk for congenital abnormalities and complications during labour. The more mature the mother is, the lower the level of anxiety she will feel because a mother of sufficient/mature age will be better prepared both mentally and physically. Women aged 20-35 years are physically ready to get pregnant, because their reproductive organs are fully formed, compared to women aged <20 years their reproductive organs are still in the developmental stage, so the level of anxiety is more severe (panic), while women aged >35 are partly classified as in pregnancies at high risk for congenital abnormalities and complications during labour. The more mature the mother is, the lower the level of anxiety she will feel because a mother of sufficient/mature age will be better prepared both mentally and physically. Women aged 20-35 years are physically ready to get pregnant, because their reproductive organs are fully formed, compared to women aged <20 years their reproductive organs are still in the developmental stage, so the level of anxiety is more severe (panic), while women aged >35 are partly classified as in pregnancies at high risk for congenital abnormalities and complications during labour (Badudu, 2012).

Mother's work related to activities carried out by pregnant women. Strenuous activity makes the risk of miscarriage and premature birth higher because of less oxygen intake to the placenta and early contractions may occur. Light activity or exercise that pregnant women do will help maintain pregnancy. Pregnant women who do light activities have been shown to reduce the risk of babies born prematurely. The results showed that most of the pregnant women in both the control and treatment groups did not work. Work does not affect anxiety in the face of labor. This is probably because pregnant women who work and who do not work both have a good adaptation to the changes that occur during pregnancy. so that these changes do not greatly affect the physical and psychological conditions of the mother in facing childbirth. In addition, it is possible that the family is supported by socio-economic factors that are quite good so that the mother's health status is guaranteed. This can be seen from the results of the study that the majority of family income (55-65%) is above the minimum wage. Adequate family income makes pregnant women ready for pregnancy because pregnancy requires a special budget such as ANC costs, nutritious food for the mother and fetus, maternity clothes, labor costs and the needs of the baby after birth This can be seen from the results

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From the results of the study, the health status (history of disease) of pregnant women obtained data that only 1 (5%) of pregnant women in the treatment group had a history of asthma. For a mother who experiences health problems during pregnancy, of course she will experience anxiety in facing childbirth. For pregnant women who have a fetus with a high risk for congenital abnormalities, anxiety is even greater, while pregnant women with pregnancy complications are twice as likely to have fear of their baby's weakness or to become depressed.

Table 2. Frequency Distribution of Anxiety Levels Before Yoga

Anxiety Level	Yoga group		Control Group	
	Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
No worries	0	0	0	0
Mild anxiety	0	0	0	0
Moderate anxiety	2	10	4	20
heavy anxiety	13	65	13	65
Anxiety is very heavy	5	25	3	15
Total	20	100	20	100

The anxiety level of most of the 13 (65%) pregnant women before yoga in both the yoga group and the control group experienced severe anxiety (Table 2). The anxiety level of most of the 12 (60%) pregnant women in the treatment group

experienced mild anxiety, while in the control group most of the 12 (60%) pregnant women experienced moderate anxiety (Table 3).

Table 3. Frequency Distribution of Anxiety Levels After Yoga

Anxiety Level	Yoga group		Control Group	
	Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
No worries	3	15	0	0
Mild anxiety	12	60	6	30
Moderate anxiety	5	25	12	60
heavy anxiety	0	0	2	10
Anxiety is very heavy	0	0	0	0
Total	20	100	20	100

The results showed that the anxiety level of most of the 12 (60%) pregnant women in the treatment group after doing yoga for 4 weeks experienced mild anxiety, while in the control group most of the 12 (60%) pregnant women experienced moderate anxiety. It can be seen from these results that there has been a significant reduction in anxiety levels after doing yoga, and severe anxiety is gone. Whereas in the control group, 2 (10%) pregnant women experienced severe anxiety.

Prenatal yoga is a science that explains the relationship between human physical, mental and spiritual to achieve overall health (Sindhu, 2014). Doing yoga exercises during pregnancy will prepare the body and mind to be ready and strong for childbirth. In the opinion of researchers, a person's anxiety is influenced by many things, apart from antenatal yoga, an important factor that can help reduce anxiety is family support, which can be in the form of support from husbands, parents or other relatives. Based on

this, efforts that can be made so that pregnant women do not easily experience anxiety, namely the need to do prenatal yoga activities so that during the process of getting pregnant and giving birth, pregnant women do not experience difficulties.

The benefits of yoga activities for the health of the body include lowering blood pressure, heart

rate, increasing blood circulation in the process of removing food residues that contain toxins from the body. Then, some of the benefits of pregnancy yoga exercise for pregnant women are that it can increase blood flow and adequate nutrition of the fetus, as well as play a role in the health of the reproductive organs and pelvis such as strengthening the perineal muscles in preparing for the birth of a baby naturally.

Table 4. Analysis of Paired T Test

Treatment Group	Average difference (SD)	Average Difference (CI)	t	p.s
No Yoga	22,150 (4,081)	3,600 (0.669 – 6.530)	2,571	0.019
yoga	18,550 (4,019)			

The results showed that yoga was significantly effective in overcoming maternal anxiety because the p value showed 0.019 ($p < 0.05$) and the mean difference value was within the normal CI limits, and a positive t-count value indicated that yoga had a good impact on overcoming the anxiety of pregnant women. Anxiety or anxiety is a state of tension. A tension can arise from feelings of worry, fear, pressure, irritation, nervousness, anxiety and confusion experienced by the mother. These feelings can disturb or cause discomfort for the mother in dealing with pregnancy and if it continues until delivery, it will affect the progress of labour. When a mother is afraid or anxious, the body will activate the flight response. This causes an increase in adrenaline production. Heart begins to beat faster, breathing becomes faster, muscles tense, blood pressure increases.

During labour there are several signs indicating that the mother is not coping well with labour, namely anxiety, panic, high-pitched vocalizations, increased pain perception due to decreased endorphins production, slowed contractions due to decreased oxytocin production and fetal distress.

One alternative method that can be used to increase comfort and reduce anxiety is prenatal yoga. Prenatal yoga (yoga for pregnancy) is a modification of classic yoga that has been adapted to the physical condition of pregnant women, which is performed at a gentler and slower intensity (Michelle Haring, Jules E. Smith, Doris Bodnar, Shaila Misri, n.d.). Prenatal yoga has three important principles, namely breathing with full awareness, gentle and slow movements as well as relaxation and meditation (Nimah Said, 2015). Deep, regular breathing is healing

and calming. Through correct breathing techniques, the mother will be more able to control her mind, body and with relaxation and meditation, the mother's whole body and mind will be relaxed, calm and peaceful. Research has shown that pranayama and relaxation have a significant positive effect on reducing anxiety.

Prenatal yoga is an activity for pregnant women that not only trains physically but also psychological conditioning so that mothers are healthy and comfortable. The use of aromatherapy during prenatal yoga can help pregnant women relax, thereby reducing anxiety levels. This is because aromatherapy contains the chemical linalyl ester which is efficacious for calming and provides an anti-neuro depressive effect which is able to relax and relax the work system of tense nerves and muscles (Leonard, 2018). The progressive relaxation technique is a series of prenatal yoga movements, it is intended that pregnant women can relax themselves, especially when facing conditions that cause stress or anxiety for mothers, such as when facing birth. The effect of progressive relaxation techniques can make a person more relaxed and this technique is also used to control anxiety (Mariyana, 2019).

Research involving 46 pregnant women with symptoms of depression and anxiety indicate that prenatal yoga is a feasible and acceptable intervention for pregnant women who have symptoms of anxiety and depression. Participants also expressed high satisfaction and no adverse results (Kyle Davis, Sherryl H. Goodman,

Jenn Leiferman, 2015). The results of this study are in line with the research of Satyapriya, et al which stated that yoga is more influential than pregnancy exercise to reduce anxiety experienced by pregnant women in the second and third trimesters (M. Satyapriya, R. Nagarathna, V. Padmalatha, 2013). Practicing yoga during pregnancy helps reduce anxiety related to labor, increases self-confidence in facing labor and reduces physical complaints (Fauziah, 2016). The results of this study are also in line with the theory put forward by Sindhu that yoga in pregnancy can reduce the anxiety felt by pregnant women. Yoga in pregnancy can be used to reduce women's anxiety about childbirth and prevent an increase in symptomatology (James J Newham, Anja Wittkowski Clin, Janine Hurley, 2014). Prenatal yoga had a statistically significant effect on anxiety levels (Hamdiah, Ari Suwondo, Triana Sri Hardjanti, Ariawan, 2017)

A person's anxiety is influenced by many things, besides antenatal yoga, the most important thing in reducing anxiety is family support, especially husbands. Factors that can reduce anxiety that occurs in women who are about to give birth are family support which can be in the form of husbands, family or other relatives, parents, and in-laws.

Conclusion

Prenatal yoga is an activity for pregnant women that not only trains physically but also conditions psychologically so that mothers are healthy and comfortable. Yoga practice during

pregnancy helps reduce anxiety, increase confidence in facing labor and reduce physical complaints and prevent an increase in symptomatology and has a statistically significant effect on anxiety levels. A person's anxiety is influenced by many things, apart from antenatal yoga, the most important in reducing anxiety

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