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Pregnancy exercise effectiveness on anxiety level among pregnant women

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Abstract

Background: Changes in one's mental state are possible during pregnancy because it is a phase. Anxiety is one of these mental changes that is common during pregnancy and has a tendency to have a detrimental impact on both the mother and the fetus. This study aims to examine the effectiveness of pregnancy exercise on pregnancy anxiety levels.

Design and methods: The method used in this study was quasi-experimental with a purposive sampling technique. The Hamilton Anxiety Rating Scale (HARS) is the instrument that is employed in this study, and it will be given to the sample group of 15 pregnant women without complications to determine their levels of anxiety. This research was conducted at one of the Health Centers in Batam City, Indonesia. The sample is instructed to perform pregnancy exercise for a total of 4 weeks, with each week's instruction consisting of pregnancy exercise being performed twice for a total of 1 h.

Result: The findings of the data analysis performed with the *t*-test, which assessed the differences in sample anxiety levels before and after taking out pregnant exercise, showed a value of $p=0.000$. This indicates that the value of p is less than 0.05, which is the threshold at which the significance level of the test is considered to be significant.

Conclusions: Therefore, childbirth of complementary care in the form of exercise during pregnancy can have the impact of lowering levels of anxiety.

Keywords

Pregnancy, exercise pregnancy, anxiety

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Introduction

Physical and psychological changes in pregnant women can cause discomfort or complaints from the first trimester to the third trimester. Symptoms such as nausea, vomiting, and weakness tend to be felt in the first trimester of pregnancy. However, it is different in the third trimester of pregnancy. Anatomical changes and hormonal changes will cause various complaints in pregnant women.

Pregnant women will experience some psychological changes, particularly emotional changes such as sensations of fear, grief, and delight, even if just for a few minutes, and will tend to be sensitive, easily jealous, ask for more attention, have ambivalent feelings, and have insomnia. Pregnancy is an event that involves many physiological and psychological changes. Pregnancy is also a complex phenomenon that also causes strong psychological and social changes, especially Among women who are pregnant for the first time, resulting in pregnancy anxiety.¹

Psychological changes such as anxiety experienced will have a negative impact on the health of the mother and fetus. The unfavorable impact is only during pregnancy but can also affect the birth process, after birth and during lactation. The woman will undergo psychological changes during pregnancy, including emotions, sensitivity, laziness, jealousy, tension, and anxiety. These modifications are further aided by mothers' lack of knowledge about the changes that occur during pregnancy.²

Several factors can contribute to anxiety in pregnant women. Pregnant women in their third trimester have more

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anxiety than those in their first and second trimesters, and there is a statistically significant association between age, education level, employment position, abortion record, marital relationship, and fear of giving birth.³ Pregnancy can cause anxiety in women, especially in mothers who are psychologically unstable. Anxiety in pregnant women can emerge at any moment during the pregnancy, but it is most common during the third trimester until delivery. During this time, pregnant women are concerned about various variety of factors, including the health of their babies, the pain they will experience, and so on.⁴

Anxiety in pregnant women can be overcome with pharmacological and non-pharmacological therapy. In pregnant women, non-pharmacological therapy is preferred before pharmacologic efforts, so that the side effects of anti-anxiety drugs in pregnant women can be minimized. One of the non-pharmacological therapies that can be implemented in pregnant women is by carrying out pregnancy exercises.

One of the non-pharmacological actions in order to increase uterine contractions, among others, is pregnancy exercise. Pregnancy exercise is one of the physical activities that mothers can do during pregnancy because the movements in pregnancy exercise tend to be light and contain a relaxing effect that helps stabilize anxiety and reduce fear. Another benefit for pregnant women will get information about childbirth so that pregnant women have good knowledge and will prepare for childbirth.⁵

Based on data from WHO, 80% of health practitioners in developing countries prefer alternative medicine to chemical medicine. Indonesia is a country rich in diversity of traditional medicine. The development of the use of traditional medicine has great potential for improving the health and welfare of the nation.⁶

Pregnancy exercise is a complementary care, in some communities, midwifery has become an important part of midwifery practice. Women, especially pregnant women, are the highest consumers of complementary medicine. One of the reasons why complementary care is the client's choice is dissatisfaction with conventional treatment and ignoring a holistic approach, as well as concerns about drug side effects.⁷

Research that agrees with this is the study of Görücü et al.⁸ the result find that efforts to reduce anxiety in pregnancy, namely pregnancy exercise, which is one of the prenatal services, is an alternative therapy that can be given to pregnant women. Pregnancy exercise can minimize the effects of physical and psychological changes in pregnant women which result in various complaints. It differs from the study undertaken by Kusumawati and Jayanti.⁵ There was no significant difference in anxiety levels between the exercise and control groups, according to the findings. From this phenomenon, the researchers concluded to conduct research on the Effect of Complementary Care Exercise on Anxiety Levels in Pregnant Women in Batam City, Indonesia.

Methodology

The approach utilized in this study is a quantitative experiment using a one-group pretest-posttest design without a control group, which involves observing one group twice before and after treatment. The anxiety measuring instrument that will be used in this study is the Hamilton Anxiety Rating Scale (HARS) which was given before and after treatment. Implementation At this stage it is divided into two stages, namely the first stage of providing material about the benefits of exercise for pregnant women, the second stage is the implementation of complementary care for pregnant women exercise.

Research location and time

This research was conducted out in one of the health centers located in Batam City, which is located in Indonesia. This study was carried out between the months of November and December in 2021.

Sample

Purposive sampling, which is a form of non-probability sampling, was utilized in this study. The inclusion criteria for this study dictated that there be a total of 15 pregnant participants in the sample. Women who are pregnant but not experiencing any complications and are prepared to take part in the study until its conclusion are candidates for participation. It will be regarded a dropout on the part of pregnant women if they do not continue to participate in the study until it is finished.

Intervention

The prenatal exercise lasts for a total of 4 weeks, with each session lasting 1 h and taking place once a week at regular intervals. The *t*-test, more specifically the Shapiro-Wilk test, is the method of analysis that is utilized here. The paper in question has been granted the Ethics Permit no. 371/EA/KEPK-UNIBA-IX-2021.

Results

Before being analyzed, it is necessary to carry out a normality test first as a prerequisite for the *t*-test. The normality test uses the Shapiro-Wilk test because the number of samples is less than 50, and the results are as follows (Table 1):

Based on the test results above, it shows that the *p* value for anxiety data at the pretest is 0.089 and at the

Table 1. Normality test for pretest and posttest anxiety data with Shapiro-Wilk test.

Anxiety variable	Shapiro-Wilk		
	Statistic	N	p-Value
Pretest	0.898	15	0.089
Posttest	0.929	15	0.265

Table 2. Frequency distribution of anxiety levels after complementary care for pregnancy exercises at Health Center Batam City 2021.

Group	Mean	Median	±SD	Min-Max	95% CI ^a
Before pregnancy exercise	60.33	64.00	8.575	45–71	55.58–65.08
After pregnancy exercise	47.53	47.00	11.951	29–65	40.91–54.15

^aConfidence level, the selected confidence level is 95%.

Table 3. The effect of pregnancy exercise before and after on anxiety levels for pregnant women at the Health Center, Batam City 2021.

Anxiety	Mean	N	SD	t-Count	p-Value
Before pregnancy exercise	60.33	15	8.575	7.388	0.000
After pregnancy exercise	47.53	15	11.951		

posttest 0.265, which means $>$ a value of 0.05, thus the data is declared to be normally distributed so that it can be continued with paired t test analysis.

Based on Table 2 anxiety in third trimester pregnant women before being given complementary care for pregnancy exercise obtained an average of 60.33 with a median of 64.00 and a standard deviation of 8.575. The lowest anxiety was obtained at 45 and the highest at 71. According to the 95% CI results, it is believed that the anxiety of pregnant women before the complementary care treatment for pregnancy exercise at the Health Center in Batam City in 2021 is between 55.58 and 65.08.

Anxiety of pregnant women in the third trimester after exercise was obtained an average of 47.53 with a median of 47.00 and a standard deviation of 11.951. The lowest anxiety was obtained at 29 and the highest was 65. According to the 95% CI results, it is believed that the anxiety of third trimester pregnant women in facing childbirth after exercise at the Health Center in Batam City in 2021 is between 40.91 and 54.15.

It can be seen in Table 3 that the average anxiety of pregnant women in the third trimester before being given pregnancy exercises is 60.33 and the average anxiety of pregnant women in the third trimester after giving complementary pregnancy exercises is 47.53. This means that there is a change or decrease of 12.8. Statistically, with the paired t-test, the t-count value was 7.388 and p-value=0.000, which means p-value $<$ (0.05). Thus, the provision of complementary care for pregnancy exercise has an effect on reducing anxiety at the Health Center, Batam City in 2021.

Discussion

Frequency distribution of anxiety levels before and after complementary exercises for pregnant women in the third trimester at the Health Center, Batam City in 2021

The results of the study found that the average anxiety before providing complementary services in third trimester

pregnancy exercise at the Health Center Batam City in 2021 was 60.33 and after giving complementary pregnancy exercises was 47.53. This shows that there is a change or decrease in anxiety after the provision of complementary care for pregnant exercise by 12.8.

These results are reinforced by the results of research from Yunitasari et al.⁹ it was found that the level of anxiety after the intervention was less than before the intervention. the results of the significance value ($p=0.000$) the level of anxiety was ≤ 0.005 so that there was an influence before and after the intervention on the mother's anxiety level. Thus it can be concluded that there is an effect of giving pregnant exercise to the anxiety of pregnant women.

Anxiety in pregnant women can be triggered because of a stressor, namely the body's natural response to a stimulus so that the mother experiences fear, worry, and discomfort about something. If anxiety is disturbing to pregnant women, it can affect the delivery process.¹⁰ A severe level of anxiety will cause a decrease in the individual's ability to relate to other people. The extreme and prolonged intensity of anxiety accompanied by the limited ability of individuals to cope with problems is believed to cause various problems related to social isolation.¹¹

Anxiety is one of the causes of prolonged labor and fetal death, meanwhile prolonged labor contributes 5% to the causes of maternal death in Indonesia. Anxiety during the prenatal period is associated with adverse effects on the fetus and child. Prenatal anxiety is also associated with adverse delivery outcomes.¹²

In the results of Maulida and Wahyuni¹³ it is known that the results before the pregnancy exercise intervention were 33% experiencing mild anxiety, 44% experiencing moderate anxiety, and 22% experiencing severe anxiety. After pregnancy exercise, the anxiety of pregnant women decreased; namely, 44% did not experience anxiety, 22% experienced mild anxiety, and 22% experienced moderate anxiety.

The results of observations when conducting research are still many pregnant women who do not do pregnancy exercise because the mother does not know and understand

the benefits of pregnancy exercise, one of which is to reduce anxiety and also facilitate childbirth. The impact of not doing pregnancy exercise is that it can increase the anxiety of the mother facing childbirth and if the anxiety is not immediately addressed, it can complicate the labor process or the delivery will take longer.

The effect of complementary care for pregnant exercises in third trimester pregnant women on reducing anxiety at the Health Center, Batam City in 2021

The results of this study, it was found that the provision of complementary care for pregnancy exercise had an effect on reducing anxiety in third trimester pregnant women at the Health Center, Batam City in 2021 with p -value=0.000. This effect is because pregnancy exercise can create a sense of comfort and calm, besides that it can also strengthen the muscles of pregnant women so that mothers when facing labor can be more prepared and less anxious and delivery will be smooth.

From the founding of the research by Apriany et al.¹⁴ stated that there was a significant difference in anxiety scores ($p < 0.05$) between primigravida mothers who did pregnant exercise and primigravida mothers who did not do pregnancy exercise. The median anxiety score of primigravida mothers who did pregnancy exercise was 14 while the median of primigravida mothers who did not do pregnancy exercise was 24.

In the third trimester, anxiety before the delivery of the first pregnant woman will appear. Anxiety that occurs in mothers before childbirth is actually a natural thing, because childbirth is not only an exciting thing but is a scary process for those who have never experienced it because it is a struggle against death to get a baby out and the process does not always run smoothly or normally. This is a concern and anxiety for pregnant women.¹⁵

Fear during pregnancy is manifested as anxiety about having a miscarriage, worrying about fetal abnormalities, and worrying about not being a good mother. Anxiety of pregnant women increases toward the end of pregnancy, mostly due to fear of childbirth and labor pains.¹⁶ Lack of knowledge and unknown anxiety during pregnancy and childbirth make mothers anxious and afraid. Fear, anxiety, and depression are associated with problems such as premature labor and low birth weight.¹⁷

Pregnancy exercise will produce better delivery outcomes than pregnant women who do not do pregnancy exercise. Pregnancy exercise can reduce anxiety. This agrees with the research of Wahyuni et al.¹⁸ which found a significant effect on the frequency of pregnancy exercise and the number of gravida on the level of anxiety which shows that the more often you do exercise during pregnancy, the lower the anxiety level and the more frequent the number of pregnancies. mother, During pregnancy exercise there are

relaxation techniques that can reduce anxiety, when individuals experience tension and anxiety, the sympathetic nervous system works, while when relaxed, the parasympathetic nervous system works.¹⁹

Pregnancy exercise consists of several body movements in the form of exercises with rules, systematics, and principles of particular activities adapted to pregnant women's condition.²⁰ Further research states that pregnancy exercise movements contain a relaxing effect that can stabilize the emotions of pregnant women. Through pregnancy exercise, pregnant women will be taught how to reduce anxiety and reduce fear by means of physical and mental relaxation, and get information that prepares them to experience what will happen during labor and birth.²¹

Pregnancy exercise is done not only for fitness, but to strengthen muscles, flex joints, and mainly train concentration so that you can divert your mind so you can forget the pain during childbirth and also strengthen your breath. Pregnancy exercise is proven to help ease the labor process. In addition, pain during the labor process can also be minimized, by regulating breathing, concentrating, and diverting the mind, so that stress during childbirth is automatically reduced. Then labor can run more smoothly and briefly.²²

Based on research Hidayah et al.²³ argue that most of the third trimester pregnant women experience apprehension in the face of childbirth. Anxiety experienced by pregnant women can be influenced by several factors such as maternal age, mother's education and family support given to the mother.

Anxiety that occurs in pregnant women can have an impact on the health of the mother and fetus. So that pregnant women need psychosocial support to prevent and overcome anxiety.²⁴ In this study, pregnancy exercise was proven to have a positive impact in balancing pregnant women's psychological health. The three core components of pregnancy exercise (breathing exercises, strengthening and stretching exercises, and relaxation exercises) have the effect of relaxing breathing and relaxing muscles. The three core components have different effects on pregnant women's health. When pregnant women do breathing exercises, especially deep breathing, they feel their breaths become more regular, lighter, less rushed, and longer. Strengthening and stretching exercises also have an impact on reducing tension in pregnant women. At the end of the pregnancy exercise program, there are relaxation exercises that combine muscle relaxation and breathing relaxation. In this exercise, pregnant women do it while imagining the condition of the baby in the stomach is fine. This is enough to bring a relaxing effect, that by imagining something pleasant can make the body relax.

Conclusion

Pregnancy exercise activities affect Anxiety levels during pregnancy at the Health Center in Batam City, Indonesia

for primigravida mothers who take part in pregnancy exercise with a third trimester of pregnancy.

Suggestion

It is intended that health workers will continue to raise socialization about the value of pregnancy exercise, which is done on a regular basis in order to reduce pregnant women's worry, which has an impact on the mother's and fetus's health both during pregnancy and birthing. It is recommended that additional study be conducted on moms with high anxiety levels utilizing an in-depth observational technique with a sufficient number of samples.

1


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