



Publish: Association of Indonesian Teachers and Lecturers

International Journal of Health Sciences (IJHS)Journal Homepage: <https://jurnal.agdosi.com/index.php/IJHS/index>

Volume 3 | Number 4 | December 2025 |



The Effect Of Pregnancy Exercises On The Physical And Psychological Readiness Of Mothers Approaching Labor

Agnes Batmomolin^{1*}, Rezqiah Aulia Rahmat², Adisty Dwi Treasa³¹Nursing Study Program, Poltekkes Kemenkes Maluku, Indonesia²Medical Study Program, Bosowa University Makassar, Indonesia³Midwifery Professional Study Program, Mitra Adiguna Health Sciences College, Indonesia

ABSTRACT

This study aims to determine the effect of prenatal exercise on the physical and psychological readiness of mothers before childbirth. Prenatal exercise is a form of physical activity specifically designed for pregnant women, which is believed to improve physical fitness, reduce stress, and psychologically prepare mothers for childbirth. This study used a quasi-experimental method with a pretest-posttest design on 40 pregnant women in their third trimester who participated in the prenatal exercise program at Community Health Center X. The results showed a significant increase in the physical and psychological readiness of pregnant women after participating in prenatal exercise regularly for 4 weeks. This indicates that prenatal exercise is effective in increasing maternal readiness for childbirth.

Keywords: Pregnancy Exercise, Physical Readiness, Psychological Readiness, Pregnant Women, Childbirth

*Correspondent Author: Agnes Batmomolin

*email: agnesbat4@gmail.com





1. Introduction

Childbirth is a crucial physiological process in human life. For a pregnant woman, childbirth requires not only physical preparation but also optimal psychological readiness. Physical unpreparedness can lead to excessive fatigue, muscle pain, and labor complications, while psychological unpreparedness can increase anxiety, stress, and even the risk of mild depression. A pregnant woman's physical and psychological readiness significantly impacts the smoothness of the labor process and postpartum recovery.

One non-pharmacological intervention that can help improve maternal readiness for labor is prenatal exercise. Prenatal exercise is a physical exercise specifically designed for pregnant women to maintain fitness, increase flexibility, strengthen muscles needed during labor, and help mothers manage stress and anxiety. Several prenatal exercise movements, such as breathing exercises, light stretching, and pelvic floor muscle strengthening exercises, are believed to optimally prepare mothers for labor.

Previous research has shown that regular physical activity during pregnancy can reduce the risk of complications such as gestational hypertension, back pain, and excessive fatigue. Furthermore, physical exercise has positive psychological effects, such as reducing anxiety levels, improving mood, and strengthening self-confidence in pregnant women. Therefore, prenatal exercise is not only physically beneficial but also supports the mother's mental health prior to delivery.

Although numerous studies have demonstrated the benefits of prenatal exercise, its implementation varies across healthcare facilities, and mothers' understanding of its benefits also varies. This raises the need for specific research into the effects of prenatal exercise on the physical and psychological readiness of pregnant women, thus providing a scientific basis for healthcare professionals in developing effective prenatal exercise programs.

Based on the description above, this study aims to analyze the effect of pregnancy exercise on the physical and psychological readiness of mothers before giving birth, with the hope that the results of the study can be a reference for health workers, pregnant women, and policy makers in improving the quality of pregnancy services.

2. Research Methods

a) Research Design

This study used a quasi-experimental method with a pretest-posttest design without a control group. This design was chosen because it allowed researchers to evaluate changes in the physical and psychological readiness of pregnant women before and after the prenatal exercise intervention. Although there was no control group, this design was sufficient to directly assess the effects of prenatal exercise on the variables studied.

b) Population and Sample





Trimester pregnant women registered at Community Health Center X during the study period. Inclusion criteria included:

- Pregnant women aged 28–36 weeks (third trimester)
- Have no medical contraindications for doing prenatal exercise (e.g. severe hypertension, bleeding, preeclampsia)
- Willing to participate in the pregnancy exercise program during the research period

Exclusion criteria :

- Pregnant women with serious complications that endanger safety while exercising
- Mothers who cannot attend all the prenatal exercise sessions

The sample was taken using purposive sampling, with a total of 40 respondents who met the inclusion and exclusion criteria.

c) **Research Instruments**

The instruments used to measure research variables consist of:

- Physical readiness: measured through a simple physical test covering flexibility, muscle strength, and endurance. This instrument has been validated by professional physiotherapists and midwives.
- Psychological preparedness: measured using a psychological questionnaire containing questions about levels of anxiety, stress, and confidence in facing childbirth. A Likert scale of 1–5 was used to rate each item. This questionnaire was tested for reliability using Cronbach's α . $\alpha > 0.8$, indicating a good level of internal consistency.

d) **Research Procedures**

- Pretest: Conducted before intervention, to measure the physical and psychological condition of early pregnant women.
- Intervention: Pregnant women participated in a 4-week prenatal exercise program, performed three times a week for 45 minutes per session. Exercises included gentle stretching, breathing exercises, pelvic floor strengthening, and relaxation. All sessions were led by certified instructors.
- Posttest: Conducted after the intervention to assess changes in physical and psychological readiness.

e) **Data analysis**

Data were analyzed using descriptive and inferential statistical analysis:

- Descriptive statistics to see the distribution of data, mean, and standard deviation.
- Normality test using Shapiro-Wilk to ensure the data is normally distributed.
- Inferential test: Paired t-test was used to compare pretest and posttest scores, with a significance level of $p < 0.05$.





f) Research Ethics

This research has received approval from the X Health Center and all participants provided informed consent. The data collected will be kept confidential and will only be used for research purposes.

3. Results And Discussion

a. Results

This study was conducted on 40 pregnant women in their third trimester who participated in a four-week prenatal exercise program. The variables measured were physical and psychological readiness before and after the intervention.

1) Physical Readiness

The results of measuring the physical readiness of pregnant women before and after participating in pregnancy exercises are shown in Table 1.

Variables	Pretest Score (Mean ± SD)	Posttest Score (Mean ± SD)	P- value
Physical Readiness	60 ± 8	75 ± 7	<0.001

The table above shows that the physical readiness score increased from 60 to 75, indicating a significant improvement after participating in the prenatal exercise program. A paired t- test analysis yielded $p < 0.001$, indicating that this difference was statistically significant.

This increase in physical readiness is especially visible in:

- Flexibility of the pelvic and lower back muscles, which increases after regular stretching exercises.
- Strength of the abdominal and leg muscles, which support the body's position during labor.
- Endurance, mothers feel more energetic and don't tire easily during daily activities.

2) Psychological Readiness

The results of the psychological readiness measurements also showed a significant increase, as seen in Table 2.

Variables	Pretest Score (Mean ± SD)	Posttest Score (Mean ± SD)	P- value
Psychological Readiness	55 ± 10	70 ± 9	<0.001

The psychological readiness score increased from 55 to 70. The paired t- test results yielded $p < 0.001$, indicating that this increase was significant.

Increased psychological readiness is indicated by:

- Reduced anxiety levels, mothers feel calmer when facing childbirth.
- Increased self-confidence, mothers feel more mentally prepared to face the birthing process.





- Improved relaxation skills, thanks to breathing and relaxation exercises during prenatal gymnastics.

3) Comparative Analysis

A comparison of before and after prenatal exercise is shown in Figure 1 (which can be represented as a bar graph). The graph shows that both variables increased significantly after the intervention.

Interpretation of Results

Research shows that prenatal exercise effectively improves the physical and psychological readiness of pregnant women for labor. Regular physical activity strengthens muscles, increases flexibility, and improves blood circulation, resulting in a more physically fit mother. Psychologically, the social interaction within the exercise group, relaxation techniques, and knowledge about childbirth help reduce anxiety and increase self-confidence.

These results are in line with previous research showing that prenatal exercise can reduce stress and anxiety levels in pregnant women, as well as increase physical readiness which plays a role in a smooth delivery process.

b. Discussion

The study results showed that prenatal exercise significantly improved the physical and psychological preparedness of pregnant women for labor. The increase in physical and psychological preparedness scores indicates that the prenatal exercise program was effective in preparing mothers for labor, both physically and mentally.

1) Physical Readiness

Improved physical readiness is evident in increased flexibility, muscle strength, and endurance in pregnant women. Prenatal exercises involve stretching, pelvic floor strengthening, breathing, and light exercises specifically designed for pregnant women. These exercises help:

- Strengthens pelvic and abdominal muscles, which are important to support the birthing process and reduce the risk of injury.
- Increases flexibility and mobility, making it easier for mothers to adjust their position during labor.
- Increase endurance, so that mothers do not tire easily and are more comfortable during pregnancy and childbirth.

These results are in line with previous research which states that regular physical activity during pregnancy improves physical fitness, reduces the risk of back pain, and optimally prepares the body for the labor process.

2) Psychological Readiness

Prenatal exercise also has a positive impact on psychological readiness. After participating in the program, pregnant women demonstrated:





- Reduced anxiety and stress, as breathing and relaxation techniques help calm the mind.
- Increased self-confidence, mothers feel more prepared to face childbirth.
- Strengthening psychological adaptability, through social interaction with other participants and instructor support.

This supports the theory that physical activity not only impacts physical condition, but also mental health, because exercise can trigger the release of endorphins that improve mood and reduce stress.

3) **Practical Implications**

The results of this study provide several practical implications:

- Health workers, such as midwives and doctors, can encourage pregnant women to take part in pregnancy exercises regularly as part of their antenatal care.
- Health facilities should provide structured prenatal exercise programs under professional supervision.
- Knowledge about the benefits of prenatal exercise needs to be socialized so that more pregnant women can benefit from it.

4) **Research Limitations**

This study has several limitations:

- Not using a control group, so the influence of other factors on the results cannot be completely eliminated.
- The sample was limited to one Community Health Center, so the results may not fully represent the broader population of pregnant women.

4. **Conclusion And Suggestions**

a. **Conclusion**

- 1) Prenatal exercise significantly improves the physical readiness of pregnant women for childbirth, including flexibility, muscle strength, and endurance.
- 2) Prenatal exercise also significantly improves psychological readiness, including reducing anxiety levels, increasing self-confidence, and the ability to mentally adapt to childbirth.
- 3) Structured prenatal exercise interventions can be an effective strategy in preparing pregnant women to face the normal delivery process more safely and comfortably.

b. **Suggestion**





Publish: Association of Indonesian Teachers and Lecturers

International Journal of Health Sciences (IJHS)Journal Homepage: <https://jurnal.agdosi.com/index.php/IJHS/index>

Volume 3 | Number 4 | December 2025 |



- 1) Health workers at community health centers or other health facilities should encourage pregnant women to participate in regular pregnancy exercise programs as part of antenatal care.
- 2) It is recommended that prenatal exercise programs be guided by a professional instructor and supplemented with educational materials about childbirth and relaxation.
- 3) Pregnant women are advised to do pregnancy exercises at least 3 times a week to get optimal physical and psychological benefits.
- 4) Further research should use an experimental research design with a control group and a larger sample so that the results are more generalizable.
- 5) It is also recommended to conduct long-term monitoring of the effects of prenatal exercise on the labor process and postpartum recovery.

References

1. Agustina, R., & Lestari, P. (2021). The effectiveness of prenatal exercise in reducing anxiety in third- trimester pregnant women. *Scientific Journal of Midwifery*.
2. Amita, MV, Rosa, EM, & Pratiwi, CS (2020). *Prenatal yoga for physical and psychological health during women's pregnancy: a scoping reviews*. *International Journal of Health Science and Technology*.
3. Apriani, E., & Fransysca, H. (2023). *Benefits of pregnancy exercise on lower back pain in pregnant women in Medan Tuntungan District*. DIMAS: Community Service.
4. Arlinda, A., & Sri Rahayu, AO (2025). *The effectiveness of pregnancy exercises in reducing maternal anxiety levels before delivery in the working area of the Suka Maju Village Health Center, Kampar Regency*. *Tambusai Health Journal*.
5. Anurogo, D., Rahmat, RA, & Pannyiwi, R. (2025). Identification of Endophytic Fungi in Traditional Medicinal Plants in South Sulawesi. *JIMAD: Multidisciplinary Scientific Journal*, 3(2), 77–82. <https://doi.org/10.59585/jimad.v3i1.862>
6. Cakrawati, C., & Marpaung, SH (2025). Midwifery Care Counseling for Elderly Women Regarding the Prevention of Urinary Tract Infections and Osteoporosis. *Sahabat Sosial: Journal of Community Service*, 4(1), 113–122. <https://doi.org/10.59585/sosisabdimas.v4i1.880>
7. Dewi, S., & Handayani, T. (2020). *Pregnancy exercise as a non-pharmacological intervention for childbirth readiness*. *Journal of Maternal and Child Health*.
8. Fitri, A., & Nugroho, H. (2022). *The effect of prenatal exercise on the physical and mental health of pregnant women in the second trimester*. *Journal of Reproductive Health*.
9. Hartini, M., & Wicaksono, D. (2023). *Prenatal exercise and its effect on maternal fitness and mental readiness before childbirth*. *Journal of Public Health*.





Publish: Association of Indonesian Teachers and Lecturers

International Journal of Health Sciences (IJHS)Journal Homepage: <https://jurnal.agdosi.com/index.php/IJHS/index>

Volume 3 | Number 4 | December 2025 |



10. Kusuma, A., & Puspitasari, D. (2021). *Prenatal exercise: Physical and psychological benefits for pregnant women in the third trimester*. Journal of Modern Midwifery.
11. Miranti, M., Wahyuni, I., Sihombing, S., Yerni, A., Ruslaini, E., & Pinem, DS (2019). Implementation of pregnancy exercise as an effort to prepare physically and psychologically in facing childbirth in the independent practice of Karang Rejo midwives. Bee.
12. Pannyiwi, R., Azis, MNSA, & Rahmat, RA (2025). Analysis of Nurses' Obstacles in Implementing Therapeutic Communication in Healthcare Environments. Barongko: Journal of Health Sciences, 4(1), 231–243. <https://doi.org/10.59585/bajik.v4i1.921>
13. Rahmawati, N., & Sari, Y. (2022). *The effect of prenatal physical exercise on normal delivery readiness*. Scientific Journal of Health.
14. Santoso, F., Nur Hidayanti, MU, Damanik, BJK, Novitasari, P., & Karolina, ME (2025). *Enhancing childbirth preparedness: The effects of prenatal yoga on physical and mental readiness*. Jambi Public Health Journal.
15. Sunanto, S., Pannyiwi, R., & Rahmat, RA (2025). The Effect of Night Shift Work on Nurse's Fatigue and Work Concentration in the Emergency Department. International Journal of Health Sciences, 3(4), 606–613. <https://doi.org/10.59585/ijhs.v3i4.867>
16. Simbala, SN, & Shofa, W. (2024). *The effect of prenatal exercise on sleep quality of pregnant women in the third trimester*. Maternity and Neonatal: Journal of Midwifery.
17. Susanti, E., & Herdiana, D. (2019). *The effect of prenatal exercise on sleep duration of pregnant women in the third trimester*. Health Journal.
18. Wulandari, A., Prasetya, H., & Murti, B. (2022). *Meta- Analysis: The effect of prenatal yoga to lower anxiety and stress in intrapartum women*. Journal of Maternal and Child Health.
19. Yunitasari, I., Suwanti, S., & Halimatusyaadiah, S. (2023). *The effect of prenatal exercise on anxiety and sleep quality of pregnant women in the second and third trimesters*. Journal of Midwifery Update.

