

# Exercise for Pregnancy and Pregnant Women Back Pain

Neny Yuli Susanti<sup>1\*</sup>, Nita Madhav<sup>2\*</sup>

<sup>1</sup> Midwifery Department, University of Ibrahimy, Sukorejo, Situbondo, Indonesia

<sup>2</sup> San Francisco, United States of America

\*Corresponding Author: [nenyulisusanti@gmail.com](mailto:nenyulisusanti@gmail.com)<sup>1</sup>, [nmadhav@air-worldwide.com](mailto:nmadhav@air-worldwide.com)<sup>2</sup>

## ABSTRACT

The main factor that causes lower back pain in pregnancy is the pressure on the back muscles or a shift in the lower spine, which results to joint stress. It can be solved by doing pregnancy exercise carefully for 30 minutes regularly. The objective of the research is to find out the effect of pregnancy exercise in reducing pregnant women's lower back pain. This pre-experimental research design used pre and post testing for one group subject. The sampling method used in this study was Purposive Sampling. The sample of the research was 14 respondents in Sumberejo Village, Banyuputih Prefecture, Situbondo Region in May. The data was obtained by conducting interview and observation to pregnant women. The data was analyzed by using Wilcoxon Signed Rank Test with the significance rate of  $\leq 0.05$ . The result of the research showed that most of pregnant women experienced lower back pain, namely 83% respondents.

**Keywords:** backpain, exercise, pain, pregnancy, scale

Received March 3, 2022; Revised April 22, 2022; Accepted May 20, 2022



STRADA : Jurnal Ilmiah Kesehatan, its website, and the articles published there in are licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License.

## BACKGROUND

Based on the obtained data from Department of Health in 2012, the maternal mortality rate (MMR) in Indonesia was around 228/100.000 per live birth, and its direct cause was mostly due to bleeding for about 28% cases (Susanti and Putri, 2019). According to preliminary research, the most effective health program to prevent pain and mortality in pregnancy and delivery is by giving good quality care during the pregnancy. Treatments during pregnancy has important role, as a health promotion effort in maintaining health during pregnancy through health education facilities which is given independently or in group. The health promotion efforts for pregnant women is quite a lot, such as providing knowledge and training about pregnancy exercise (Susanti, 2018).

The pregnancy exercise which is done regularly during pregnancy has significant effect to the delivery process. The delivery process needs preparative actions from the mother so that the process could be safe and secure. The pregnancy exercise which is combined with prenatal yoga could be used as alternative attempt to facilitate the process of childbirth preparation during pregnancy (Susanti, 2021). Pregnancy exercise has many benefits and advantages such as able to reduce delivery pain, strengthening pelvic muscles so it could ease and quicken the delivery process, strengthen and maintain the flexibility of abdominal wall muscles and lower pelvic muscles which have big role during delivery process (Susanti, 2022). In the recent trends, pregnancy exercise is often combined with prenatal yoga to obtain more complex benefits. Yoga exercise is a light exercise program in which the practice combines some yoga principles. Prenatal yoga is a holistic approach in the form of physical, spiritual, and mentality exercise which involve the combination of body muscles stretching and breathing meditation that promote health and spiritual improvement (Amru et al., 2021).

The body movements in prenatal yoga are specially made to train uterus muscles in order to support fetal movement ability (Susanti, Kebidanan and Sukorejo, 2015). This advantageous prenatal yoga is able to give good effects such as enable the fetus to grow and move optimally. The pregnancy exercise which is combined with prenatal yoga also makes the mother more relaxed, which is an important condition for the fetus inside. While doing the exercise, mothers should be feeling happy and comfortable without having stress pressure, because the stress could lower the oxytocin hormone production which would decrease the benefits of the pregnancy exercise (Susanti et al., 2014).

Back pain during pregnancy is an indication which is often experienced by pregnant women in the beginning of the third trimester. Because the older the fetus and the uterus gets, the more pressure would burden the back bone, so most pregnant women experience lower back pain in the third trimester. About 50-70 percent of pregnant women experience lower back pain. It can be found in every pregnancy age level, but mostly in the third trimester (Suryani and Handayani, 2018). From the research result obtained from 38 pregnant women, 22 women (57.9%) who followed pregnancy exercise regularly said that they haven't had soreness afterwards and rarely experience lower back pain, 16 women (42.1%) who irregularly did pregnancy exercise said that they often feel soreness and sometimes got lower back pain (Susanti, Putri, 2019).

## LITERATURE REVIEW

### Pregnancy Exercise

Pregnancy exercise has important benefit for body treatment, as well as reducing various kinds of emerging disorders caused by changes in body posture during pregnancy. A pregnancy exercise could not be perfect if the implementations are not arranged intensively and systematically. A care for pregnant women which can be done by midwife is teaching pregnant women to do pregnancy exercise, as it is very important to improve blood circulation. Pregnancy exercise is implemented to help preparing good physical condition by the delivery as well as to help overcoming inconveniences. The combination of pregnancy exercise and yoga is essential for the needs of the pregnant women in

reducing lower back pain problems. Yoga is a form of body and mind exercise which includes stretching and postural exercise system, combined with breathing exercises.

### Lower Back Pain

Physiologically, lower back pain is caused by progesterone hormone working in cartilage and connective tissue located in the joint, which enable more freely fetal movements. This hormone is useful for widening delivery passage although causing inconvenience for the pregnant women, especially in the third trimester pregnancy. Lower back pain during pregnancy can be caused by symphysis pubis joint movement, which is increased for some degrees when pubis bones swipe one another (Scientific and Journal, no date). Pregnancy age also can aggravate the lower back pain indication (Sencan *et al.*, 2018).

Based on the research result, pregnant women with advancing gestational age would experience heavier lower back pain compared to the ones with early pregnancy. A more advancing gestational age would increase mother's weight, and as the consequences changes mother and fetus body shape as well as placenta and other aspects. In fact pregnant women weight gain is good for the fetus growth, but in the other hand increase burden in mother's lower back so it causes lower back pain (Griffith *et al.*, 2018).

### METHODS

This research used the data analysis with Pre-Experimental Design method. The research design in this study used One Group Pretest-Posttest Design with the statistics analysis using Wilcoxon Signed Rank. The respondent of the research was 14 pregnant women in the third trimester. The sampling technique of the research was Purposive Sampling. The instrument used was Observation Sheet and Pregnancy Exercise SOP. This research was conducted in Sumberejo village with pre assessment using Observation Sheet before implementing the pregnancy exercise.

### RESULT

The effect of lower back pain before implementing the pregnancy exercise showed that the majority of pregnant women experiencing lower back pain with the classification of medium pain was 11 respondents (78%), and those with the classification of no pain was 0 (0%). The majority of respondents who experienced lower back pain were then given the pregnancy exercise therapy for three times in Sumberejo village, Sukorejo, Banyuputih, Situbondo in 2018. The respondents who still felt light pain after the treatment were 12 respondents (85%), heavy pain 0 respondents (0%), and those who did not experience pain at all was 0 respondents (0%).

Table 1. Lower back pain frequency before and after implementing pregnancy exercise

No.	Classification	Before Treatment		After Treatment		P
		n	%	n	%	
1	No Pain	0	0	0	0	0,000
2	Light Pain	2	14	12	85	
3	Medium Pain	11	78	2	14	
4	Heavy Pain	1	7	0	0	
Sum		14	100	14	100	

The pre and post research analysis after implementing the pregnancy exercise and prenatal yoga gained mean ranks value result by using Wilcoxon Testing with the p value result of  $0.000 < 0.05$ . Hence, there was significant difference in lower back pain indication prior and after implementing the pregnancy exercise and prenatal yoga. This research result is in line with the study conducted by The Health Department of East Java Province in 2013 entitled "The Effect of Pregnancy Exercise in

Reducing Lower Back Pain Indication at Kedungmungu Semarang Public Health Working Area". The result of the study mentioned that mother's lower back pain indication rate before and after implementing the pregnancy exercise treatment showed changes. The average value before implementing the pregnancy exercise was 57.9%, and became 8.20% after implementing the pregnancy exercise. Thus, the effect of implementing the pregnancy exercise was significant.

The pregnancy exercise and prenatal yoga aims to train pelvic muscles and the surrounded area so it could become stronger and more elastic. Normal delivery would be easier when the blood circulation around the pelvic is improved. The breathing exercise along the pregnancy exercise would make mothers get used to do quick and short breathing as well as the long and deep breathing with regular rhythm, both while inhaling and exhaling the air. Breathing exercise could calm mothers through the delivery pain, as well as stimulate the nervous system which supports the opening and stretching ability of the delivery passage.

## DISCUSSION

The exercise during pregnancy is specially intended for pregnant women. Thus, it has some movement standards which are different from the more general purposed exercises, because it is adjusted to the needs and comfort of pregnant women. Some of the objectives of pregnancy exercise are: (1) protecting the joint muscles, (2) strengthening and maintaining the muscles in uterus wall, stomach, and lower back, (3) improving physical and psychological health, (4) mastering the breathing technique, (5) preventing varicose veins. Some of the benefits from the pregnancy exercise are: (1) reducing pain during delivery process, (2) reducing problems and symptoms during pregnancy, (3) strengthening lower back muscles so it could ease and quicken delivery process, (4) reducing stress, sores, and pain, (5) increasing overall body strength and energy.

The pregnancy exercise is suggested to do for 30 minutes in a week, and pregnant women only need 3 to 5 times exercise. The duration of the pregnancy exercise should also consider the physical condition of the mother and the pregnancy itself (Susanti and Putri, 2019).

## CONCLUSION

Conclusion of this research is that there is significant difference between pre and post treatment after implementing pregnancy exercise combined with prenatal yoga.

## ACKNOWLEDGEMENT

Thanks to The University of Ibrahimy Situbondo for the supports in this research.

## REFERENCES

- Amru, D. E., Umiyah, A., Yastirin, P. A., Susanti, N. Y., & Ningsih, D. A. (2021) 'Effect of Deep Breathing Techniques on Intensity of Labor Pain in The Active Phase', 3(2), pp. 359–364. Available at: <https://growingscholar.org/journal/index.php/TIJOSW/article/view/176>.
- Ray-Griffith, S. L. *et al.* (2018) 'Chronic pain during pregnancy: A review of the literature', *International Journal of Women's Health*, 10, pp. 153–164. doi: 10.2147/IJWH.S151845.
- Scientific, T. and Journal, N. (no date) 'Tanta Scientific Nursing Journal (Print ISSN 2314-5595) (Online ISSN 2735 – 5519 )', 23(4), pp. 193–213.
- Sencan, S. *et al.* (2018) 'Pregnancy-related low back pain in women in Turkey: Prevalence and risk factors', *Annals of Physical and Rehabilitation Medicine*, 61(1), pp. 33–37. doi: 10.1016/j.rehab.2017.09.005.
- Suryani, P. and Handayani, I. (2018) 'Senam Hamil Dan Ketidaknyamanan Ibu Hamil Trimester Ketiga', *Jurnal Kebidanan*, 5(01), pp. 33–39.
- Susanti, N. Y. *et al.* (2014) 'Hubungan Pendampingan Suami Dengan Lama Kala I', *Oksitosin*

- Kebidanan*, 1(1), pp. 1–7.
- Susanti, N. Y. (2018) ‘Penurunan Nyeri Pinggang Pada Ibu Pra Menopause Effects Of Soy Milk For Low Back Pain In Pre Menopausal Women Data penelitian Departemen Kesehatan didapatkan dari Persatuan Osteoporosis Indonesia pada tahun 2006 ditemukan Makmal Terpadu FKUI Jakarta terny’, V(2), pp. 101–107.
- Susanti, N. Y. (2021) ‘Terapi Akupreseur untuk Penurunan Nyeri Haid Acupressure Therapy for Menstrual Pain Reduction Nyeri haid atau disminore biasa dengan kondisi yang besar Chinese Indonesia Occupational’, 8(2), pp. 145–150.
- Susanti, N. Y. (2022) ‘Pos Pelayanan Terpadu Lansia (Posyandu Untuk Masyarakat Lanjut Usia)Di Desa Sumberejo Kecamatan Banyuputih Kabupaten Situbondo’, *J-AbdiJurnal Pengabdian Kepada Masyarakat*, 1(8.5.2017), pp. 2003–2005. Available at: <https://www.bajangjournal.com/index.php/J-ABDI/article/view/1214/900>.
- Susanti, N. Y., Kebidanan, A. and Sukorejo, I. (2015) ‘Luka Perineum Pada Ibu Post Partum Abstinence Food Effect Against Healing Perineal Wound for Post Partum Mother’, II(2), pp. 88–93.
- Susanti, N. Y. and Putri, N. K. (2019) ‘Pengembangan Senam Hamil Dan Pengaruhnya Terhadap Pengurangan Keluhan Nyeri Pinggang Pada Ibu Hamil Trimester Iii’, *OKSITOSIN: Jurnal Ilmiah Kebidanan*, 6(1), pp. 45–49. doi: 10.35316/oksitosin.v6i1.343.