

THE PREVALENCE OF BACK PAIN AND THE PATTERN OF COMPLAINTS IN PREGNANT WOMEN AT THE GATAK COMMUNITY HEALTH CENTERS

Farrah Rizky Mutiara¹, Tiara Fatmarizka²

^{1,2}*Physiotherapy department, Faculty of Health Sciences, Universitas Muhammadiyah Surakarta, Indonesia*

*Corresponding author: Tiara Fatmarizka, email: tf727@ums.ac.id

Abstract

Background: Musculoskeletal complaints experienced by pregnant women have an impact on comfort in carrying out daily activities, one of which is back pain. Back pain experienced by pregnant women usually starts in the second and third trimesters due to various factors, one of which is a change in posture. Based on the location of the complaint, back pain is divided into 3, namely: low back pain (LBP), pelvic girdle pain (PGP), and lumbo pelvic pain (LPP). In 2019 in Indonesia there were 70% cases of back pain experienced by pregnant women, this needs to be known so that it can be used as a precaution for pregnant women and be preventive in their pregnancy. **Objective:** to determine the prevalence of the location pattern and the degree of back pain felt by pregnant women. **Methods:** This type of research is an observational study with a cross-sectional approach. The sampling technique in this study used incidental techniques with 194 samples with questionnaires. **Results:** Based on the results of the study, the highest prevalence of back pain was found in pregnant women at the Gatak Health Center, namely pain with a low back pain location pattern of 61.3% (121 respondents) with a moderate degree of pain with an average pain result of 4.6. **Conclusion:** Pregnancy back pain is normal because of changes in posture and other risk factors and the most frequent pattern of pain location is Low Back Pain with moderate pain degree (60.3%), followed by Lumbo Pelvic Pain location pattern 21.1% and Pelvic Girdle Pain 17.5%. 3% (121 respondents) with moderate pain degree with an average pain result of 4.6.

Keywords: pattern of location of back pain, pregnancy complaints, low back pain, pelvic girdle pain, lumbo pelvic pain

PRELIMINARY

Pregnancy has a physiological effect on a woman's body, one of which is musculoskeletal problems (Clark & Lindsey, 2015). The most common musculoskeletal problem experienced by pregnant women and has an impact on comfort in carrying out daily activities is back pain (D'Eramo et al., 2012). Complaints usually begin to be felt between the fifth and seventh month of pregnancy or eight to twelve weeks after pregnancy (Sabbour & Omar, 2011). According to Wang et al., (2004) in Sweden that most pregnant women experience back pain for the first time during their first pregnancy (*primigravida or gravida 1*) (Wang et al., 2004).

Back pain is experienced by many pregnant women, according to Manyozo et al., (2019) in the United States, Europe and parts of Africa, 30-78% experience pain (Manyozo et al., 2019). In addition, Weis et al., (2018) research in Canada 20%-90% of pregnant women complain of back pain and interfere with daily activities such as walking and sitting for a long time (Weis et al., 2018). In 2019 in Indonesia, 70% of pregnant women in the third trimester experienced back pain (Permatasari, 2019).

Back pain is an event that is often experienced by pregnant women in the second and third trimesters because one of them is caused by changes in posture (Manyozo et al., 2019). Posture changes occur due to an increase in lumbar lordosis which is useful for balancing the increased weight in the uterus (Pennick & Liddle). , 2013). Back pain as a result of changes that affect the spine, sacrum and pelvis. Back pain has several types of complaints, according to research by Weis et al (2018) that back pain has three types (Weis et al., 2018), namely: Low Back Pain or low back pain that occurs between the costal margin and the gluteal folds (inferior), Pelvic Girdle Pain or pain that occurs in the symphysis pubis or between the posterior iliac crest and the gluteal folds, Combo Pain or known as lumbopelvic pain is pain that is felt in both parts from the lumbar to the pelvic.

The selection of this study was based on surveys related to existing references, but research on the incidence of each classification of back pain locations in Indonesia has not been found. Based on research that has been done regarding back pain during pregnancy, there is no clear category between the location of the pain and the degree of back pain. Therefore, this study was conducted to determine the prevalence of pregnant women who have complaints of back pain with a pattern of location and degree of pain.

RESEARCH METHODS

The type of research carried out is observational research with a cross-sectional approach where observations are only made once and no action is taken at all to the respondents (Imas Masturoh, 2018). This research was conducted in 14 villages under the auspices of the Puskesmas Gatak

Sukoharjo sub-district, which is located at Dk Kranon, RT.02/RW.8, Dusun II, Blimbing, Kec. Gatak, Sukoharjo Regency, Central Java. Population. in this study were 223 pregnant women in Gatak District. The sampling technique in this study used incidental sampling with the inclusion criteria of >18 years of age, 2nd & 3rd trimester pregnancy, singleton pregnancy (not twins), and willing to provide accurate information, samples with a history of spinal disorders were not included in the sample criteria. Pregnant women with a history of trauma and mental disorders will be excluded from the sample.

The sample that met the criteria in this study were 194 pregnant women with gestational age in the 2nd and 3rd trimesters and 29 respondents who did not meet the inclusion criteria (trimester 1). This research step begins with determining the variables and determining the sample population to prepare a proposal and making a questionnaire in the form of a body chart containing pictures of the anatomy of the body and a numeric rating scale in the form of a sequence of numbers 1-10 which indicates the level of pain and making ethical clearance (998/XI/HREC/ 2021), the research was conducted 19 November – 03 December 2021 as well as data processing and compiling research results.

RESULT AND DISCUSSION

		Amount	Average	%
Mother's Age	21-30 year	121	29,0	62,4%
	31-40 year	67		34,5%
	40-50 year	6		3,1%
Gestational Age	Trimester 2	98		50,5%
	Trimester 3	96		49,5%
Parity		194	First Pregnancy	38,7%
Height		194	154,9	
Pain Pattern	LBP	119		61,3%
	PGP	34		17,5%
	LPP	41		21,1%
NRS (Numeric Rating Scale)	Mild	62	4,59	32%
	Moderate	117		60,3%
	Weight	15		7,7%

LBP; Low Back Pain, PGP; Pelvic Girdle Pain, LPP; Lumbo Pelvic Pain

Source: Primary Data, 2021

Based on age, the majority of respondents were aged 21-30 years with a total of 121 (62.4%), with an average age of 29 years for pregnant women. Most occur in the 2nd trimester of pregnancy because the majority of gestational age in the population is in the 2nd trimester with the most frequent pattern of complaints being low back pain (61.3%), lumbo pelvic pain (21.1%), pelvic girdle pain (17, 5%) and moderate pain with an average pain of 4.59.

DISCUSSION

a. Age

From the results of univariate analysis that has been conducted on 194 respondents aged 20-50 years, it was found that the average pregnant woman who experienced back pain was 29 years old. Based on research in Brazil (2013) that pregnant women who are younger, the possibility of experiencing back pain will also be greater (Carvalho et al., 2017). Research conducted by Al-Sayegh et al., (2012) in Kuwait from 400 respondents, the average pregnant woman who experiences back pain is 29.5 years old (Al-Sayegh et al., 2012).

Back pain in pregnant women often occurs in productive ages (20-40 years) because at an older age and with a lot of activity, the endurance of the back muscles also decreases, causing an increase in the possibility of feeling pain, in addition to the load on the spine that affects the back pain. back pain (Smith et al., 2017). The more strenuous activity, the more productive age will cause changes in muscle mechanics so that it becomes a factor that affects back pain (Gashaw et al., 2020). So from the research conducted and theoretically it is found that the productive age of the mother affects the back pain of pregnant women.

b. Gestational Age

From the results of the univariate analysis that has been carried out by researchers on 194 respondents with criteria for gestational age in the 2nd and 3rd trimesters of pregnancy found the highest number of pregnant women at the Gatak District Health Center at the 2nd trimester of pregnancy.) and all pregnant women experience back pain but with different location patterns (Kovacs et al., 2012). Things that affect the pattern of pain location are a history of LBP or PGP before pregnancy which is the biggest risk factor, while for a BMI level > 25 it is a supporting risk factor that is not known for certain (Wizeer et al., 2020).

From the results of the research that has been done and the theory that supports the research, it is appropriate that the greater the gestational age, the greater the possibility of back pain in pregnant women. This occurs because of weight gain during pregnancy, an increase in the sagittal diameter of the abdomen, causing a shift in the center of gravity to the anterior (Sneag & Bendo, 2007).

Biomechanical back pain felt by pregnant women there is a change in the nature of gravity that shifts to the front because an increase in the abdomen and breasts that causes a change in posture, These changes cause lumbar lordosis and tension in the muscles paravertebral. In addition, compression of the large blood vessels due to the uterus during pregnancy causes a decrease in blood flow to the marrow back pain that causes back pain, especially in the last trimester (Carvalho et al., 2017).

c. Pain Pattern

Supporting research in this study was conducted by Weis et al., (2018) in Ontario with a number of respondents 287 pregnant women found 76.6% of pregnant women experienced back pain with 3 different location patterns, with each distribution of Low Back Pain. (LBP) 33.4%, Pelvic Girdle Pain (PGP) 27.9%, and Lumbo Pelvic Pain (LPP) 30.7% , The distribution of the location pattern is carried out to determine the appropriate treatment for back pain in pregnant women (Weis et al., 2018).

Many factors can affect the difference in pain patterns in pregnant women, Vleeming et al., (2008) Pelvic Girdle Pain location patterns can occur due to a history of back pain and previous pelvic trauma so that it can make the development of pain so that during pregnancy experience a pattern of pelvic location complaints. Girdle Pain (Vleeming et al., 2008).

The etiology of each classification of pain locations cannot be ascertained, but according to Bastiaanssen et al., (2005) in the process of pregnancy, almost all women experience some pain which may be caused by hormonal and physiological changes during pregnancy (Bastiaanssen et al., 2005). According to Sencan et al., (2018) PGP and LBP pain cannot be distinguished because the location of the complaint and the description of pain are difficult to distinguish, so in this study using the category of gestational age with the same category of complaint location pattern (Sencan et al., 2018).

d. Pain Severity

The results of the univariate analysis conducted on 194 respondents at the Gatak District Health Center showed an average pain level of 4.59 which indicated moderate pain severity. The results of the research by Shijagurumayum Acharya et al., (2019) the average severity of pain in pregnant women is 6 where this number indicates moderate pain severity, so that the pain felt by pregnant women does not interfere with daily activities (Shijagurumayum Acharya et al. , 2019).

According to Al Sayegh et al (2012) the severity of pain is caused by obesity (BMI: > 25-30) which causes an increase in pain so that pregnant women will limit their functional movements (Al-Sayegh et al., 2012). Other factors that affect pain besides BMI according to Vignato et al., (2020) occur due to increased hormones in pregnant women (Vignato et al., 2020).

An increase in the severity of pain occurs due to heavy work during pregnancy or complaints of back pain in a previous pregnancy (Bryndal et al., 2020). Pain will not increase if during pregnancy active light activities or active sports, according to Kokic et al., (2017) that exercise has many effects to reduce pain and improve functional abilities and quality of life in pregnant women (Kokic et al., 2017).

COCLUSION

Based on the results of research data related to the prevalence of the location pattern of back pain, the most that occurred in pregnant women at the Gatak community health centers was low back pain with a total of 61.3% (119 respondents) with a moderate degree of pain severity.

SUGGESTION

The main limitation in this study is the small number of samples due to the limited research time. With this research, it is hoped that it can be a reference in determining diagnoses related to back pain for pregnant women so that they can provide appropriate, comfortable and effective treatment according to the location of the complaint. For further research, it is expected to add variables related to risk factors and interventions regarding back pain in pregnant women and others.

BIBLIOGRAPHY

- Al-Sayegh, N. A., Salem, M., Dashti, L. F., Al-Sharrah, S., Kalakh, S., & Al-Rashidi, R. (2012). Pregnancy-Related Lumbopelvic Pain: Prevalence, Risk Factors, and Profile in Kuwait. *Pain Medicine (United States)*, 13(8), 1081–1087. <https://doi.org/10.1111/j.1526-4637.2012.01424.x>
- Bastiaanssen, J. M., De Bie, R. A., Bastiaenen, C. H. G., Heuts, A., Kroese, M. E. A. L., Essed, G. G. M., & Van Den Brandt, P. A. (2005). Etiology and prognosis of pregnancy-related pelvic girdle pain; design of a longitudinal study. *BMC Public Health*, 5, 1–8. <https://doi.org/10.1186/1471-2458-5-1>
- Carvalho, M. E. C. C., Lima, L. C., de Lira Terceiro, C. A., Pinto, D. R. L., Silva, M. N., Cozer, G. A., & Couceiro, T. C. de M. (2017). Low back pain during pregnancy. *Brazilian Journal of Anesthesiology*, 67(3), 266–270. <https://doi.org/10.1016/j.bjan.2016.03.00>
- Clark, S. M., & Lindsey, R. W. (2015). 539.Full-2. 23(9), 539–549.
- D’Eramo, F., Liu, H., & Rajagopal, K. (2012). Medium induced collinear radiation via soft collinear effective theory (SCET). *AIP Conference Proceedings*, 1441(January 2013), 829–831. <https://doi.org/10.1063/1.3700691>
- Gashaw, M., Gedlu, S., & Janakiraman, B. (2020). Burden of pelvic girdle pain during pregnancy among women attending ante-natal clinic, Ethiopia:a cross-sectional study. *BMC Pregnancy and Childbirth*, 20(1), 1–11. <https://doi.org/10.1186/s12884-020-03184-4>
- Kokic, I. S., Ivanisevic, M., Uremovic, M., Kokic, T., Pisot, R., & Simunic, B. (2017). Effect of therapeutic exercises on pregnancy-related low back pain and pelvic girdle pain: Secondary analysis of a randomized controlled trial. *Journal of Rehabilitation Medicine*, 49(3), 251–257. <https://doi.org/10.2340/16501977-2196>
- Kovacs, F. M., Garcia, E., Royuela, A., González, L., & Abreira, V. (2012). Prevalence and factors associated with low back pain and pelvic girdle pain during pregnancy: A multicenter study conducted in the spanish national health service. *Spine*, 37(17), 1516–1533. <https://doi.org/10.1097/BRS.0b013e31824dcb74>
- Manyozo, S. D., Nesto, T., Bonongwe, P., & Muula, A. S. (2019). Low back pain during pregnancy: Prevalence, risk factors and association with daily activities among pregnant women in urban Blantyre, Malawi. *Malawi Medical Journal*, 31(1), 71–76. <https://doi.org/10.4314/mmj.v31i1.12>
- Masturoh, I., & Anggita, N. (2018). *Metodologi penelitian kesehatan*. Jakarta: Pusat Pendidikan Sumber Daya Manusia Kesehatan.
- Pennick, V., & Liddle, S. D. (2013). Interventions for preventing and treating pelvic and back pain in pregnancy. *Cochrane Database of Systematic Reviews*, 2013(8). <https://doi.org/10.1002/14651858.CD001139.pub3>
- Permatasari, R. D. (2019). Effectiveness of Acupressure Technique at BL 23, GV 3, GV 4 Points on Decreasing Lower Back Pain in Pregnancy Trimester III at Puskesmas Jelakombo Jombang. *J-HESTECH (Journal Of Health Educational Science And Technology)*, 2(1), 33. <https://doi.org/10.25139/htc.v2i1.1518>
- Sabbour, A., & Omar, H. (2011). The Effect of Kinesiotaping Therapy Augmented with Pelvic Tilting Exercises on Low Back Pain in Primigravidas During the Third Trimester. 16(1), 53–61.
- Sencan, S., Ozcan-Eksi, E. E., Cuce, I., Guzel, S., & Erdem, B. (2018). Pregnancy-related low back pain in women in Turkey: Prevalence and risk factors. *Annals of Physical and Rehabilitation Medicine*, 61(1), 33–37. <https://doi.org/10.1016/j.rehab.2017.09.005>
- Shijagurumayum Acharya, R., Tveter, A. T., Grotle, M., Eberhard-Gran, M., & Stuge, B. (2019). Prevalence and severity of low back- and pelvic girdle pain in pregnant Nepalese women. *BMC Pregnancy and Childbirth*, 19(1), 1–11. <https://doi.org/10.1186/s12884-019-2398-0>
- Smith, A., Beales, D., O’Sullivan, P., Bear, N., & Straker, L. (2017). Low back pain with impact at 17

- years of age is predicted by early adolescent risk factors from multiple domains: Analysis of the Western Australian Pregnancy Cohort (Raine) Study. *Journal of Orthopaedic and Sports Physical Therapy*, 47(10), 752–762. <https://doi.org/10.2519/jospt.2017.7464>
- Sneag, D. B., & Bendo, J. A. (2007). Pregnancy-related low back pain. *Orthopedics*, 30(10), 839–845. <https://doi.org/10.3928/01477447-20071001-14>
- Vignato, J., Perkhounkova, Y., McCarthy, A. M., & Segre, L. S. (2020). Pain and Depression Symptoms During the Third Trimester of Pregnancy. *MCN. The American Journal of Maternal Child Nursing*, 45(6), 351–356. <https://doi.org/10.1097/NMC.0000000000000657>
- Vleeming, A., Albert, H. B., Östgaard, H. C., Sturesson, B., & Stuge, B. (2008). European guidelines for the diagnosis and treatment of pelvic girdle pain. *European Spine Journal*, 17(6), 794–819. <https://doi.org/10.1007/s00586-008-0602-4>
- Wang, S. M., Dezinno, P., Maranets, I., Berman, M. R., Caldwell-Andrews, A. A., & Kain, Z. N. (2004). Low back pain during pregnancy: Prevalence, risk factors, and outcomes. *Obstetrics and Gynecology*, 104(1), 65–70. <https://doi.org/10.1097/01.AOG.0000129403.54061.0e>
- Weis, C. A., Barrett, J., Tavares, P., Draper, C., Ngo, K., Leung, J., Huynh, T., & Landsman, V. (2018). Prevalence of Low Back Pain, Pelvic Girdle Pain, and Combination Pain in a Pregnant Ontario Population. *Journal of Obstetrics and Gynaecology Canada*, 40(8), 1038–1043. <https://doi.org/10.1016/j.jogc.2017.10.032>
- Wiezer, M., Hage-Fransen, M. A. H., Otto, A., Wieffer-Platvoet, M. S., Slotman, M. H., Nijhuis-van der Sanden, M. W. G., & Pool-Goudzwaard, A. L. (2020). Risk factors for pelvic girdle pain postpartum and pregnancy related low back pain postpartum; a systematic review and meta-analysis. *Musculoskeletal Science and Practice*, 48(September 2019), 102154. <https://doi.org/10.1016/j.msksp.2020.1>