Analysis Of Factors Influencing The Occurrence Of Back Pain In TM III Pregnant Women In The Working Area Of The Pati I Public Health Center

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Abstract. Pregnant women complain of pain in the lower back due to the influence of hormones which cause disturbances in the basic substance of the supporting parts and connective tissue, resulting in decreased muscle elasticity and flexibility. Apart from that, it is caused by excessive physical activity. Low back pain is one of the musculoskeletal disorders caused by poor body activity. Most lower back pain is caused by the muscles in the waist being less strong so that when you make movements that are not correct or are in a certain position. long enough can cause muscle stretching which is characterized by pain. The method in this research uses correlation analytics, with a cross-sectional design. This research was conducted on 30 pregnant women in the third trimester who experienced back pain with a total sampling. The results of statistical tests using chi square show that there is a relationship between the factors age, parity and employment with a significance value of p-value 0.004 for the age factor, p-value 0.000 for the parity factor and p-value 0.004 for the employment factor, p-value < 0.05 which means that age, parity and occupation factors influence the level of back pain in third trimester pregnant women.

Key words: Age factors, parity, occupation, level of back pain, third trimester pregnant women

INTRODUCTION

According to Potter (2013), pain is an uncomfortable and highly individual feeling that cannot be felt or shared with other people. In general, pain is a feeling of discomfort, whether mild or severe. Pain concerns two aspects, namely psychological and physiological, both of which are influenced by factors such as culture, age, environment and support systems, past experiences, anxiety and stress (Mardana & Tjahja, 2017).

To assess the pain scale, there are several types of pain scales that can be used to determine a person's level of pain, including the Visual Analog Scale (VAS) which is the most widely used method for assessing pain. This linear scale visually depicts the gradation of pain levels that a patient may experience. Pain ranges are represented as 10 cm long lines, with or without markings at each centimeter. This assessment is divided into several categories of pain, namely a pain scale on a scale of 0 means no pain occurs, a pain scale on a scale of (1-3) such as itching, electric shock, tingling, twisting, hitting, stinging, mules. Pain scale 4-6 is described such as cramps, stiffness, pressure, difficulty moving, burning, prickling. Scale 7-9 is a scale of very painful but still controllable by the client. Pain scale 10 is a pain scale that is very severe and cannot be controlled. (Mardana & Tjahja, 2017).

Pregnancy involves various physiological changes including physical changes, changes in the digestive system, respiratory system, urinary tract system, blood circulation and physiological changes. Pregnancy generally develops normally, but sometimes it does not go as expected, it is difficult to predict whether the pregnant woman will have problems during pregnancy or will be fine (Sarwono, 2016).

During pregnancy, women need time to adapt to the various changes that occur within them. The changes that occur during pregnancy generally cause discomfort and worry for most pregnant women. Changes in body size, breast shape, skin pigmentation, and overall abdominal enlargement make the pregnant woman's body look ugly and self-conscious. These worries and fears actually it is unfounded, for this reason pregnant women need advice and suggestions, especially from midwives and doctors who can explain the changes that occur during pregnancy so that mothers do not worry about the changes they experience (Helen, 2014).

The results of research on pregnant women in various regions of Indonesia reached 60-80% of pregnant women experiencing back pain during pregnancy (Mafikasari & Kartikasari, 2015). In the adaptation process, it is not uncommon for mothers to experience discomfort which, even though it is physiological, still needs to be given prevention and treatment. Some discomforts in the second and third trimesters in pregnant women include frequent urination 50%, vaginal discharge 15%, constipation

40%, stomach bloating 30%, swelling in the legs 20%, cramps in the legs 10%, headaches 20%, striae gravidarum 50%, hemorrhoids 60%, shortness of breath 60% and back pain 70% (Astuti, 2019).

According to Wahyuni & Prabowo (2012), lower back pain is discomfort that occurs below the costa and above the inferior gluteal region. According to Robson & Jason (2012), lower back pain is a common disorder, and pregnant women may have a history of "back pain" in the past. Lower back pain is so common in pregnancy that it is described as one of the minor disorders in pregnancy. Pain symptoms usually occur between 4-7 months of pregnancy and the pain is usually felt in the lower back, sometimes spreading to the buttocks and thighs, and sometimes down to the legs. as sciatica (Herawati, 2017).

Back pain during pregnancy reaches its peak at the 24th to 28th week, just before abdominal growth reaches its maximum point, apart from that, according to the results of limited epidemiological observations carried out by Mayer, quoted by Yosefa, Febriana ea all (2014) pain The back is often aggravated by backache or what is often called "old back pain". This backache was found in 45% of women when pregnancy was recorded, increasing to 69% at 28 weeks and almost remaining at that level. Complaints of back pain experienced by pregnant women certainly cannot be ignored (Purnamasari, 2019).

Prevalence Observations in Australia range from 33% – 72% experiencing low back pain during pregnancy. LBP during pregnancy can cause sleep disturbances, disruption of daily life, and reduce the ability to do work (Intveld, Cooper & Kessel, 2011). According to Fraser (2012) stated that 50% of pregnant women surveyed in the UK and Scandinavia reported suffering from significant back pain.

Lower back pain is a musculoskeletal disorder caused by poor body activity (Furlan *et al*., 2015). Most lower back pain is caused because the muscles in the waist are not strong enough so that when you make movements that are not correct or are in a position for a long time it can cause stretching of the muscles which is characterized by pain (Fitriana, 2017).

Ariyanti's (2012) research results showed that 68% of pregnant women experienced moderate intensity back pain, and 32% of pregnant women experienced mild intensity back pain. Among all these women, 47–60% reported that back pain occurred at 5–7 months of pregnancy. The pain mechanisms underlying low back pain remain unclear in many aspects. The mechanism of acute low back pain with recovery within a few days or weeks, is different from the mechanism of chronic low back pain. In acute low back pain, muscle spasm is believed to be the cause of the pain. In chronic low back pain patients, intervertebral disc degeneration is considered the primary cause of pain, but other spinal structures as well as the complexity of the nervous system and psychological factors are also involved (Brisby, 2016).

Physical activity is an important factor that plays a role in the occurrence of lower back pain. Research by Teichtahl *et al.* (2015) shows a relationship between physical activity and abnormal structures in the lumbosacral spine, including narrowing of the intervertebral discs and increased fat content. Low physical activity will reduce the mechanical stimulus that plays a role in maintaining the integrity of the intervertebral disc.

Factors that play a role in the development of back pain include age, educational status, psychosocial factors, job satisfaction, occupational factors, and obesity. Age is one of the most common factors in the development of low back pain, studies have found the highest incidence and overall prevalence increases in those aged 60 to 65 years. However, recently the prevalence has continued to increase with age with more severe back pain. Other research shows that back pain in the adolescent population has become increasingly common (Patrick, Emanski and Knaub, 2014).

Caspersen in (Amorim *et al*., 2018) states that physical activity is defined as body movement produced by skeletal muscles which results in energy expenditure. Physical activity has enormous benefits on an individual's social, psychological and biological health. Engagement in regular, moderate-intensity physical activity can reduce the risk of morbidity and all-cause mortality, while physical activity is widely used as a preventive strategy for chronic diseases such as diabetes, osteoporosis, cardiovascular disease, and many musculoskeletal disorders, including low back pain. Physical activity has been widely recommended in clinical guidelines for low back pain (Amorim *et al*., 2018).

Low back pain is discomfort that occurs below the costa and above the inferior gluteal region (Wahyuni & Prabowo, 2012). According to (Robson & Jason, 2012) Lower back pain is a common disorder, and pregnant women may have a history of "back pain" in the past. Lower back pain is so common in pregnancy that it is described as one of the minor disorders in pregnancy. Pain symptoms

usually occur between 4-7 months of pregnancy and the pain is usually felt in the lower back, sometimes spreading to the buttocks and thighs, and sometimes down to the legs as sciatica.

Many pregnant women experience lower back pain during pregnancy. In general, lower back pain in pregnant women is influenced by several factors, namely 1) Increased body weight and spinal physiology (Schroder *et al*., 2015). 2) There is an increasing curvature of the spine in pregnant women towards the end of pregnancy and changes in body posture (Yoo, Shin & Song, 2015). 3) There are 4 imbalances between agonist and anatagonist muscles, namely the erector spine M. and the lumbar nexor group. If this condition or wrong position lasts for a long time, it will cause tension in the ligaments and muscles which will cause fatigue in the M. abdomanalis (Latief, 2016).

The health data profile of the District or Central Java Province in 2015 showed 619 cases, a significant decrease compared to the number of maternal deaths in 2014 which reached 711 cases. Thus, the maternal mortality rate in Central Java Province has decreased from 126.55 per 100,000 live births in 2014 to 111.16 per 100,000 live births in 2015. 60.90 percent of maternal deaths occurred during the postpartum period, and at the time of delivery it was 12.76 percent. Meanwhile, the causes of death are bleeding 21.14%, hypertension 26.34%, infection 2.76%, circulatory system disorders 9.27%, others 40.49% (Central Java Ministry of Health, 2015).

The maternal mortality rate in 2014 was 13 maternal deaths, consisting of 3 maternal deaths, 6 maternal deaths and 4 postpartum maternal deaths. So the estimated Maternal Mortality Rate in 2014 is 100.47/100.00 Live Births. This figure has increased compared to 2013, which was 98.86/100,000 live births. The highest number of deaths was in Grogol sub-district, namely 4 deaths (Department of Health Sukoharjo, 2014).

Based on survey data conducted on third trimester pregnant women in the Pati I Community Health Center working area, Pati Regency, as many as 10 respondents, the following results were obtained, as many as 9 of the pregnant women experienced lower back pain, 5 people experienced back pain caused by lack of body activity. 4 pregnant women experience back pain because the muscles in the waist are not strong enough so that when they make movements that are not correct or are in a position for a long time it can cause muscle stretching which is characterized by pain in the lower back of pregnant women.

METHODS

The type of research used is correlation analysis, with a cross-sectional design. This research is part of pregnancy and obstetrics research related to discomfort during pregnancy. The independent variables used were age, parity and employment while the dependent variable was a decrease in the level of back pain. The research location was carried out in the Pati I Community Health Center area in the period December 2021 to March 2022. The population in this study was 30 respondents from third trimester pregnant women using a sampling technique, namely total sampling. This study used questionnaires whose validity and reliability had previously been tested, namely questionnaires about age, parity and occupation and the Visual Analog Scale (VAS) pain questionnaire. Data were processed through the stages of editing, coding, data processing, scoring, cleaning and tabulation. Data interpretation was carried out using univariate and bivariate tests using the Chi Square Test.

RESULTS AND DISCUSSION

RESULTS

1. Distribusion Frequency distribution of the age of pregnant women in the third trimester in the working area of the Pati Health Center, Pati Regency.

Table 1. Frequency distribution of age of pregnant women in the third trimester in the working area of the Pati Health Center, Pati Regency

No	Age	Frequency	Percentag
1	Age <20 years	3	10
2	Age 20-30 years	24	80
3	Age >35 years	3	10
	Total	**30**	**100**

From table 1 above, it can be concluded that the majority of pregnant women aged 20-30 years were 15 people (80%), aged < 20 years there were 3 people (10%), and aged > 35 years there were 3

people (10%).

2. Distribusi Frequency distribution of the parity of pregnant women in the third trimester in the working area of the Pati Health Center, Pati Regency.

Table 2. Frequency distribution of parity of pregnant women in the third trimester in the working area of the Pati Health Center, Pati Regency

No	Parity	Frequency	ercentage (%)
1	Primigravida	22	73,3
2	Multigravida	8	26,7
	Total	**30**	**100**

From table 2 above it can be concluded that the number of primigravida pregnant women is 22 people (73.3%) and the number of multigravida pregnant women was 8 people (26.7%).

3. Distribusi Frequency distribution of the work of pregnant women in the third trimester in the working area of the Pati Health Center, Pati Regency.

Table 3. Frequency distribution of work for pregnant women in the third trimester in the working area of the Pati Health Center, Pati Regency

No	Work	Frequancy	Percentage (%)
1	Housewife	15	50,0
2	Self employer	5	16,8
3	private employees	2	6,6
4	government employees	2	6,6
5	Farmer	6	20.0
	Total	**30**	**100**

From table 3 above, it can be concluded that the number of pregnant women working as housewives is 15 people (50%) and as farmers is 6 people (20%), entrepreneurs are 5 people (16.8%), private employees are 2 people (6 .6%) and 2 civil servants (6.6%).

4. Frequency distribution of back pain levels for third trimester pregnant women in the working area of the Pati Health Center, Pati Regency.

Table 4. Frequency distribution of back pain levels for third trimester pregnant women in the working area of the Pati Health Center, Pati Regency

No	Level pain	Freguncy	Percentage (%)
1	Light	10	33,3
2	Curreny	16	53,3
3	Heavy	2	6,7
4	Very heavy	2	6,7
	Total	**30**	**100**

From table 4 above, it can be concluded that 10 pregnant women experienced mild back pain (33.3%), 16 people experienced moderate pain (53.3%), 2 people experienced severe back pain (6.7%), and very severe as many as 2 people (6.7%).

5. The relationship between the age of pregnant women and the incidence of back pain in third trimester pregnant women in the Pati Community Health Center Working Area, Pati Regency.

Table 5. the relationship between the age of pregnant women and the incidence of back pain in third trimester pregnant women in the Pati Community Health Center Working Area, Pati Regency

No	Age	Back pain level									
		light		Currenty		Heavy		Very heavy		Total	
		f	%	f	%	f	%	f	%	f	%
1	Age <20 years	1	3,3	1	3,3	1	3,3	0	0,0	3	10,0
2	Age 20-30 years	15	50	5	16,6	2	6,7	2	6,7	24	80,0
3	Age >35 years	1	3,3	1	3,3	1	3,3	0	0,0	3	10,0
Total		**17**		**7**		**4**		**2**		**30**	**100**

From table 5 it can be seen that 1 person (3.3%) experienced mild pain of respondents aged <20 years, 1 person (3.3%) experienced moderate and severe pain. 15 people aged 20-30 years experienced mild pain (50%), 5 people had moderate pain (16.6%), 2 people had severe pain and 2 people had very severe pain (6.7%). Age >35 years 1 respondent experienced mild pain, 1 person moderate pain and 1 person severe pain.

6. Relationship between parity of pregnant women and the incidence of back pain in pregnant women in the third trimester in the Pati Community Health Center Working Area, Pati Regency.

Table 6. Relationship between parity of pregnant women and the incidence of back pain in pregnant women in the third trimester in the Pati Community Health Center Working Area, Pati Regency

No	Parity	Back level pain									
		light		Currenty		Heavy		Very heavy		Total	
		f	%	f	%	f	%	f	%	f	%
1	Primigravida	6	20	10	33,3	3	10	3	10	22	73,3
2	Multigravida	4	13,3	2	6,7	1	3,3	1	3,3	8	26,7
Total		**10**		**12**		**4**		**4**		**30**	**100**

From table 6 it can be seen that 6 people (20%) experienced mild pain, 10 people had moderate pain (33.3%), 3 people had severe pain (10%) and 3 people had very severe pain (10%).

7. The relationship between the work of pregnant women and the incidence of back pain in pregnant women in the third trimester in the Pati Community Health Center Working Area, Pati Regency.

Table 7. The relationship between the work of pregnant women and the incidence of back pain in pregnant women in the third trimester in the Pati Community Health Center Working Area, Pati Regency

No	Work	Back pain level									
		light		Currenty		Heavy		Very heavy		Total	
		f	%	f	%	f	%	f	%	f	%
1	Housewife	5	16,6	5	16,6	3	6,6	2	3,3	15	50,0
2	Self employer	2	6,6	1	3,3	1	3,3	1	3,3	5	16,6
3	private employees	1	3,3	1	3,3	0	0,0	1	0,0	2	6,6
4	government employees	1	3,3	1	3,3	0	0,0	0	0,0	2	6,6
5	Farmer	2	6,6	2	6,6	1	3,3	1	3,3	6	20,0
Total		**11**		**10**		**4**		**5**		**30**	**100**

From table 7 it can be seen that 5 people (16.6%) of respondents who worked as housewives experienced mild pain, 5 people had moderate pain, 3 people had severe pain (6.6%) and 5 people aged 8 months of pregnancy experienced mild pain (16.6%) and 2 people (3.3%) experienced very severe pain. Age respondents with self-employed jobs experienced mild pain 2 people (6.6%), 1 person

moderate pain, 1 person severe pain and 1 person very severe pain (3.3%).

Statistical tests using the Chi Square test resulted in a p value: 0.004 p < 0.05, indicating that there was a significant relationship between the age factor and the incidence of back pain in pregnant women in the third trimester in the working area of the Pati I Community Health Center, Pati Regency. Based on the research results, it is known that the majority of pregnant women aged 20-30 years were 15 people (80%), aged < 20 years there were 3 people (10%), and aged > 35 years there were 3 people (10%).

According to Sukeksiet al, 2018 the level of back pain is influenced by the mother's age. In general, mothers will experience lower back pain between the ages of 20 - 24 years and will reach its peak when they are more than 40 years old. Based on the results of research by Melati Nur Arum et al., one of the factors that causes back pain in pregnant women is the age of the pregnant woman, namely in aged between 20-30 years.

The statistical test using the Chi Square test resulted in p value: 0.000 p < 0.05, indicating that there was a significant relationship between the parity factor and the incidence of back pain in pregnant women in the third trimester in the working area of the Pati I Community Health Center, Pati Regency. Based on the research results, it is known that the number of primigravida pregnant women was 22 people (73.3%), and the number of multigravida pregnant women was 8 people (26.7%).

According to Fithriyah, Rizki Dyah Haninggar, 2020 In parity it often occurs in multiparas and grandemultiparas which are more at risk because the muscles have weakened and caused the muscles to fail to support the uterus or the uterus which has become increasingly enlarged so that many experience back pain. This is in accordance with the results of Alfiah's research, 2020, that one of the factors that influence back pain in pregnant women is the parity factor. According to research from Official, Dewi Candra et al, 2017, there is a significant relationship between parity and back pain in pregnancy. The more often and more a woman becomes pregnant and gives birth, the greater the risk compared to primiparous women. Parity will greatly increase the risk of experiencing back pain. The more frequently a woman becomes pregnant and gives birth, the greater the risk of back pain she experiences (Demang, 2020).

The statistical test using the Chi Square test resulted in p value: 0.004 p < 0.05, indicating that there was a significant relationship between work factors and the incidence of back pain in pregnant women in the third trimester in the working area of the Pati I Community Health Center, Pati Regency. Based on the research results, it is known that the work of pregnant women as housewives is 15 people (50.0%), as farmers are 6 people (20.0%), entrepreneurs are 5 people (16.8%), private employees are 2 people (6 .6%), and 2 civil servants (6.6%). Various daily physical activities that are often carried out include work, activities at home, or during free time by resting, and exercising. Heavier activities such as working and exercising cause pain in a person (Fithriyah, Rizki Dyah Haninggar, 2020).

According to research (Garcia *et al*., 2014) it is not a coincidence that a higher prevalence of Low Back Pain was observed and found in a group of housewives because in their own homes where women are more exposed to long working hours including caring for small children, frequently lifting and carrying heavy loads, performing tasks in uncomfortable positions, and using inadequate tools. Additionally, a housewife's work may be less recognized or appreciated, resulting in an environment of frustration and complex emotional states. Low back pain has a negative impact on the ability of pregnant women to carry out daily activities such as self-care, walking, sitting and involvement in sexual activity. These functional limitations are also associated with reduced quality of life and reduced productivity among pregnant women. Our results are consistent with findings from Pakistan, the United States and Brazil where women also reported poor quality of life, limited daily functional activities and associated disability due to pregnancy-related Low Back Pain. Similar results were also reported by Gutke et al who reported that around 73% of pregnant women in Norway experienced mobility problems due to Low Back Pain (Manyozo *et al*., 2019).

CONCLUSION

From the results of the research research, the conclusion was that there was a significant relationship between the factors of pregnant women's age, parity factors and employment factors of pregnant women and the level of back pain in third trimester pregnant women in the Pati Community Health Center Working Area, Pati Regency. The results of the significance test indicate a p-value of 0.004 for the age factor. p-value is 0.000 for the parity factor and 0.004 for the employment factor of

pregnant women. <0.05 which indicates that the age factor, parity factor and employment factor of pregnant women are related to the level of back pain in pregnant women in the third trimester in the Pati Community Health Center Working Area, Pati Regency.

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