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The Influence of Knowledge and Mother's Attitudes Regarding the Benefits of Prenatal Massage (ENDORPHIN) on Back Pain in Pregnant Women in the Third Trimester

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ABSTRACT

Discomfort often occurs in pregnant women in the third trimester, one of which is back pain. Approximately 80% of women experience back pain at some point during pregnancy. This occurs in 70% due to changes in the spinal muscles, while 30% may be caused by problems with previous spinal conditions. Massage aims to restore venous and lymph flow, stimulate sensory receptors in the skin and subcutaneous to reduce pain. A preliminary study conducted at the midwife clinic Nur Kholidah Pulungan.S.Keb in November 2024, there were 25 pregnant women who were interviewed, stated that 9 (36%) complained of back pain during the third trimester. The purpose of the study was to determine the effect of pregnancy back massage on back pain in pregnant women and the difference in pain in pregnant women in the third trimester in the treatment and control groups. The research method used a quasi-experiment with a non-randomized pretest and posttest with a control group design. The study was conducted for 3 months, from September to November 2024. Sampling was carried out using a non-random sampling method with a purposive sampling technique. Data analysis using the Wilcoxon and Mann-Whitney tests. The results showed a significant effect of pregnancy massage on the back on back pain in pregnant women in the third trimester with a probability value (p) of 0.000 <0.05 and there was a difference in pain in pregnant women in the third trimester in the treatment and control groups as evidenced by a value (p) of 0.000 <0.05.

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INTRODUCTION

Pregnancy is a process that occurs between the fusion of sperm and ovum cells, resulting in conception and birth of the fetus. The normal duration of pregnancy is 280 days or 40 weeks, calculated from the first day of the last menstrual period (LMP). This pregnancy process begins with ovulation (cell maturation), followed by the meeting of the ovum (egg cell) and spermatozoa (sperm), fertilization and growth of the zygote, followed by implantation in the uterus and the formation of the placenta. The final stage is the growth and development of

the product of conception until term (Manuaba et al., 2012). During pregnancy, a pregnant woman will experience changes both psychologically and physiologically. The size of the fetus at a gestational age of less than 6 months is usually not too large so it does not burden the mother's activities. However, after the age of more than six months, the size of the fetus will increase and will affect the mother's ability to carry out activities. The mother's movements will become more limited and the mother will have difficulty performing certain movements, and the mother will also become more prone to losing her balance (Emilia & Harry, 2010). Pregnancy that is more than six months old will cause changes in the internal organs of the stomach and changes in the volume produced by the uterus, blood and other fluids so that there will also be changes in body weight from usual and the abdominal muscles are also elastic following the changes in the fetus in the womb. The increasing age of pregnancy causes the angle of the spinal curve to increase which is known as sway back and there is a forward movement of the pelvis so that it causes the connective tissue of the joints to tense and if the wrong position lasts for a long time it will cause tension in the connective tissue of the joints and muscles so that it causes fatigue in the muscles and ends in pain (Emilia & Harry, 2010).

Lower back pain is a common pain experienced during pregnancy. This back pain is not limited to a specific trimester but can also persist throughout pregnancy and into the postnatal period (Fraser, 2009). As many as 50% of pregnant women surveyed in the UK and Scandinavia reported experiencing back pain, and in Australia, the figure was as high as 70% (Katopis et al., 2011).

Numerous studies on the epidemiology of low back pain during pregnancy range from 25% to 90%, with most studies estimating that 50% of pregnant women will experience low back pain. One-third of pregnant women will experience severe pain, which will reduce their quality of life. The majority of pregnant women are affected by low back pain during their first pregnancy. 80% of women with low back pain report that it affects their daily routine. 10% of them report being unable to work, and 20% of pregnant women experience pelvic pain. A study of pelvic pain in the Netherlands showed that 38% of women still had symptoms at 3 months postpartum and 13.8% at 12 months postpartum.
(Katopis et al., 2011).

Pain can be managed with pharmacological and non-pharmacological therapies. Endorphin massage is one of the non-pharmacological techniques, a type of massage with a light touch that can be given to pregnant women in the period leading up to and during labor. This massage can stimulate the body to release endorphins, which are natural pain relievers and can create a feeling of comfort. The benefits of endorphin massage include aiding relaxation and reducing pain awareness by increasing blood flow to the affected area, stimulating sensory receptors in the skin and the underlying brain, transforming the skin, providing a general sense of well-being associated with human closeness, improving local circulation, stimulating endorphin release, and decreasing endogenous catecholamine stimulation of efferent fibers, resulting in a block to pain stimuli (Aprilia, 2010).

METHODS

This research is analytical and uses quantitative methods, analytical research is research that aims to determine the relationship or influence between one variable and another, or to

compare or determine the differences in one or more variables seen from various aspects or points of view (Siswanto, et al., 2015). The type of research conducted is pre-experimental research with one group pre and post test design, namely research that uses one group of subjects, where measurements are taken before and after treatment, then comparing the results of both. The population is all subjects (humans, the population is all subjects (humans, experimental animals, laboratory data, etc.) that will be studied and meet the specified characteristics (Riyanto, 2017). The population in this study were pregnant women in the third trimester at the clinic of Midwife Nur Kholidah Pulungan, S.Keb, totaling 50 pregnant women.

RESULTS AND DISCUSSION

This study used secondary data, collected based on pregnancy check-up history, prenatal exercise history, and delivery history. The instruments used were pregnancy history and exercise forms and partograph sheets. Data collection included observation sheets or checklists, including whether the pregnant woman performed prenatal exercise or not, and the delivery process.

1. Univariate Analysis

Univariate analysis was conducted to create a picture or description of a research variable presented in frequency distribution and presentation and the percentage in this study aims to analyze the relationship between pregnancy exercise and the labor process of mothers giving birth at the clinic above. Based on the research, the following data were obtained::

Table 1. Frequency Distribution of Respondents Based on Respondents' Age Characteristics (n = 25)

Characteristics	Frequency (f)	Percentage (%)
Age		
20-35 years	17	65
>35 years	8	32
Gestational Age		
28-31 weeks	11	44
32-35 weeks	6	24
36-41 weeks	8	32
Last Education		
Elementary-Middle School	9	36
High School/Vocational School	11	44

Higher education	5	15
Work		
Housewife	16	64

Self-employed	6	24
civil servant	3	12
Parity		
Primipara	9	36
Multipara	16	64

Based on table 1 above, the distribution of age characteristics of the 25 respondents is almost all between 20-35 years old, namely 17 people (65%), gestational age shows that almost half are 36-41 weeks old (32%), the last education of the 20 respondents shows that half are secondary education (SMA/SMK) namely 11 people (44%), the occupation of the 25 respondents shows that the most occupation is housewife, namely 16 people (64%) and the parity of the 25 respondents shows that almost all of them are pregnant women in the multiparous category, namely 16 people (64%).

Table 2. The Effect of Endorphin Massage on Back Pain in Pregnant WomenTrimester III (n=25)

Variables	**Mean**	**Asymp.Sig. (2-tailed)**	**F**
Pain (before)	3.30		5
Pain (after)	1.95	0,000	20

Based on table 2 above, it can be seen that the results of the analysis using the Wilcoxon Test obtained an average of lower back pain before being given endorphin massage of 3.30 and after being given endorphin massage became 1.95. The significance value of pain before and pain after endorphin massage is 0.000. This shows that the Asymp.Sig. value <0.05 so that it can be seen that H1 is accepted. Therefore, it can be concluded that there is an effect of endorphin massage on the intensity of lower back pain in pregnant women in the third trimester of the midwife clinic Nur Kholidah Pulungan S.Keb. in 2025.

Discussion

Based on the research results, almost all respondents were aged between 20-35 years, namely 17 people (68%). The ideal age for a woman to become pregnant is between 20-35 years. Too young an age, namely less than 20 years, may not be

physically, mentally, and materially ready. Meanwhile, women who become pregnant at an age that is too old (> 35 years) have many possible risks and various problems during pregnancy (Detiana, 2010). Women who become pregnant at the age of > 35 years have risks in their pregnancy due to aging reproductive organs and the possibility of stiffness in the birth canal so that the risk of pregnant women having a child with disabilities, obstructed labor, and bleeding may occur (Prawirohardjo, 2010). From the results of this study, it can be concluded that the characteristics of pregnant women today are mostly at a safe age or not at risk of pregnancy.

Based on the research results, almost half of the respondents' gestational age was 36-41 weeks (32%). Back pain occurs in most late pregnancies. Pregnant women often pull their shoulders and back back to balance when walking. This occurs due to the enlarged abdomen and the center of gravity being positioned forward to maintain body balance, causing discomfort. This curvature of the lower back causes an excessive inward displacement of the spine, commonly known as lordosis, and overworks the muscles, leading to lower back pain (Francis & Theresa, 2008).

Based on the research results, it was found that the last education of 25 respondents was half of secondary education (high school/vocational high school) namely 11 people (44%). The higher a person's education, the better their knowledge compared to a low level of education which results in a lack of knowledge in facing and solving a problem (Notoatmodjo, 2003). Therefore, the higher a person's education, the higher their demands for quality health. Pain felt by pregnant women can be reduced by doing endorphin massage, however, even though the last education of half of the respondents was high school/vocational high school, pregnant women did not know about endorphin massage and did not know about its benefits for pregnancy. The lack of information about endorphin massage for pregnant women with back pain is not yet well known to the Nurklolidah Pulungan midwife clinic so that pregnant women do not know about endorphin massage.

Based on the results of the study, it was found that almost all respondents were housewives, amounting to 16 people (64%). Household tasks carried out by pregnant women such as ironing or preparing food that can be done in a sitting position, not standing but done by standing for a long time, including if pregnant women have to lift heavy objects, this will cause tension in the pelvic muscles, all rotating movements while lifting are dangerous movements and should not be done. (Detiana, 2008). Excessive or heavy physical activity that can trigger fatigue, lack of rest, and the increasing size of the mother's stomach is what causes pregnant women to feel uncomfortable and cause back pain with varying intensity.

Based on the research results, almost all respondents were multiparous pregnant women, namely 18 people (90%). Anatomical and physiological changes that occur during pregnancy cannot be fully recovered after the pregnancy and

CONCLUSION

Based on the research, it can be concluded that the age of the majority of respondents is 20-35 years (68%), the gestational age of almost half of respondents is 36-41 weeks (32%), the last education of half of respondents is secondary education (high school/vocational

school) (44%), the occupation of the majority of respondents is housewife (64%) and the parity is almost all pregnant women in the multiparous category (64%).

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