

THE INFLUENCE OF PRENATAL EXERCISES ON THE DURATION OF SECOND STAGE OF LABOR

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ABSTRAK PENGARUH LATIHAN PRENATAL TERHADAP LAMA PERSALINAN kala II

Komplikasi yang berlangsung pada persalinan kala II antara lain adalah partus lama. Senam hamil merupakan suatu metode terapi latihan gerak yang diberikan pada ibu hamil untuk mempersiapkan dirinya, baik persiapan fisik maupun mental yang bertujuan untuk mencapai persalinan yang cepat, aman dan spontan. Senam hamil dapat melatih dan mempertahankan kekuatan otot dinding perut dan dasar panggul pada saat persalinan berlangsung. Tujuan penelitian diketahui pengaruh senam hamil terhadap lama kala II persalinan di Puskesmas Tiuh Tohou Kabupaten Tulang Bawang Tahun 2023.

Desain yang digunakan dalam penelitian ini adalah kuantitatif dengan pendekatan *Cross sectional*. Populasi dalam penelitian ini adalah seluruh ibu bersalin di wilayah kerja Puskesmas Tiuh Tohou tahun 2023 berdasarkan jumlah persalinan periode penelitian sebanyak 31 persalinan. Sampel menggunakan total sampling dengan teknik pengambilan sampel secara *accidental sampling*. Analisa data yang digunakan menggunakan uji *chi square*.

Analisis didapatkan distribusi frekuensi persalinan dengan kala II memanjang sebanyak 5 orang (16,1%), dan jumlah persalinan dengan kala II normal sebanyak 26 orang (83,9%). Distribusi frekuensi ibu hamil yang melakukan senam hamil dengan frekuensi tidak teratur sebanyak 11 orang (35,5%), dan jumlah ibu hamil yang melakukan senam hamil dengan frekuensi teratur sebanyak 20 orang (64,5%). Ada hubungan yang bermakna antara senam hamil dengan lama kala II persalinan di wilayah kerja Puskesmas Tiuh Tohou Kabupaten Tulang Bawang tahun 2023 dengan nilai *P-value* = 0,042. Saran penelitian ini yakni Puskesmas agar lebih meningkatkan edukasi akan pentingnya melakukan senam hamil secara teratur di Posyandu ataupun kelas hamil untuk mempersiapkan dan mencegah komplikasi yang dapat terjadi pada saat proses persalinan.

Kata kunci : Senam hamil, kala II

ABSTRACT

Complications during the second stage of labor included prolonged labor. Prenatal exercises were a therapeutic method of movement exercises provided to pregnant women to prepare themselves physically and mentally, aiming to achieve a fast, safe, and spontaneous delivery. Prenatal exercises could train and maintain the strength of the abdominal wall muscles and pelvic floor during labor. The research aimed to determine the effect of prenatal exercises on the duration of the second stage of labor at Tiuh Tohou Public Health Center, Tulang Bawang Regency, in the year 2023.

The design used in this study was quantitative with a Cross-sectional approach. The population in this study consisted of all delivering mothers in the Tiuh Tohou Public Health Center's working area in the year 2023, based on the total number of deliveries during the study period, which was 31 deliveries. The sample was selected using total sampling with an accidental sampling technique. The data analysis involved using the chi-square test.

Analysis revealed a frequency distribution of prolonged second stage of labor in 5 individuals (16.1%), and the number of deliveries with a normal second stage of labor was 26 individuals (83.9%). The frequency distribution of pregnant women who performed irregular prenatal exercises was 11 individuals (35.5%), while the number of pregnant women who performed regular prenatal exercises was 20 individuals (64.5%). There was a significant relationship between prenatal exercises and the duration of the second stage of labor in the Tiuh Tohou Public Health Center's working area in Tulang Bawang Regency in the year 2023, with a *P-value* of 0.042. Recommendations: The health center was advised to enhance education about the importance of regular prenatal exercises in Integrated Health Services Post or prenatal classes to prepare and prevent complications that might occur during the labor process.

Keywords : Prenatal Exercises, Second Stage of Labor

INTRODUCTION

Pregnancy and childbirth are natural, normal, and healthy processes. Antenatal care aims to enhance and maintain the physical, mental, and social health of both the mother and the baby. It involves early identification of potential abnormalities or complications that might arise during pregnancy and preparing for a full-term delivery, ensuring a safe birth experience for both the mother and the baby with minimal trauma (Yulizawati, 2017).

According to the WHO, the current global incidence of prolonged labor is estimated to occur in 17% of total deliveries, with nearly 70% resulting in medical interventions such as cesarean sections. About 15% of pregnancies/deliveries experience complications. Every day, 830 mothers worldwide die due to pregnancy and childbirth-related diseases/complications, and approximately 7,000 newborns die daily. Around 75% of maternal deaths due to delivery complications are caused by bleeding, infection, preeclampsia/eclampsia, unsafe abortion, and prolonged or obstructed labor.

The current incidence of prolonged labor in Lampung is estimated to be around 10% of total deliveries. Lampung province is one of the provinces with a high infant mortality rate, even though looking at the trend of infant mortality rates in Lampung, there has been a decrease from 30/1000 live births in the 2012 National Health Survey (SDKI) to 24/1000 live births in the 2017 SDKI. The highest causes of death include neonatal asphyxia resulting from complications during the second stage of labor, namely prolonged labor. Similarly, the neonatal mortality rate in Lampung, although it has decreased from 30/1000 live births in the 2012 SDKI to 15/1000 live births based on the 2017 SDKI, has not yet reached the national target of 12/1000 live births. Lampung province still needs significant efforts to achieve the expected targets under the Sustainable Development Goals (SDGs).

The causes of prolonged labor are multifaceted and depend on factors such as proper prenatal care, adequate delivery assistance, and appropriate management. Factors contributing to prolonged labor include abnormalities in contractions, such as inefficient contractions (uterine inertia), irregular contractions, lack of coordination and synchronization between contraction phases (incoordinate contractions), and contractions that are too strong and frequent, leading to inadequate uterine relaxation (tetanic contractions). These factors can result in labor dystocia, which, if not promptly addressed, can lead to fetal distress and rupture of the maternal uterus (Winkjosastro, 2014).

Prenatal exercise, commonly known as prenatal fitness, is a therapeutic method of physical activity provided to pregnant women to prepare themselves both physically and mentally for childbirth. The primary objective of prenatal exercise is to achieve a fast, safe, and spontaneous delivery (Juita, 2017). The purpose of prenatal exercise is to prepare and train the muscles so that they can function optimally during a normal delivery. Through prenatal exercise, a state of readiness is attained by strengthening the abdominal muscles, pelvic floor muscles, and supportive tissues, enabling them to function effectively during the process of childbirth (Manuaba, 2012).

Furthermore, the findings of a study conducted by Juita (2017) on the impact of prenatal exercise on the duration of labor during both the first and second stages, in BPM Dince Safrina Pekanbaru, also indicate the influence of prenatal exercise on the duration of both stages. The study reveals that pregnant women who engage in prenatal exercise can accelerate the second stage of labor by up to 90%.

The incidence of prolonged labor in Tulang Bawang Regency in the year 2022 was 14% (Tulang Bawang District Health Office, 2022). Tihuh Tohou Public Health Center is one of the health centers in the sub-district of Tulang Bawang that provides maternal and child health services. Several independent midwife practices and integrated health posts (posyandu) in the working area of Tihuh Tohou Public Health Center also offer prenatal exercise classes to aid in the smooth process of childbirth.

Based on the compilation of childbirth data in 2022, there were 16% of cases referred for childbirth, with the highest referral cases being related to prolonged labor. The pre-survey conducted by the researcher also revealed that many pregnant women in the working area of Tihuh Tohou Public Health Center irregularly attended prenatal exercise classes, which were conducted during maternal classes at integrated health posts or organized by independent midwife practices within the working area of Tihuh Tohou Public Health Center. Given the information provided in the background above, the researcher is interested in conducting a study on the influence of prenatal exercise on the duration of the second stage of labor in the working area of Tihuh Tohou Public Health Center, Tulang Bawang Regency, in the year 2023.

RESEARCH METHODS

The type of research utilized in this study is quantitative research. Quantitative research involves

variables that are calculated and measured in numerical form (Hastono, 2018).

The research took place during the months of May to June 2023. This study employed an analytic survey method with a cross-sectional approach. The cross-sectional survey was a research method used to study the correlation dynamics between risk factors and effects by means of approaching, observing, or collecting data all at one point in time. Each research subject was observed only once, and measurements are taken of the subject's characteristics or variables at the time of examination (Notoadmodjo, 2012).

RESEARCH RESULT

Univariate Analysis

Table 1
Frequency Distribution of Respondents' Characteristics in the Working Area of Tiuh Tohou Public Health Center, Tulang Bawang Regency, Year 2023

Distribution	Frequency	Percentage
Age		
At risk	12	38,8
Not at risk	19	61,2
Parity		
Primipara	7	22,6
Multipara	24	77,4
Occupation		
Working	17	45,2
Not working	14	54,8

The data presented in Table 1 reveals key characteristics of the respondents. Notably, the majority of respondents, constituting 61.2%, fall into the "Not at Risk" category, indicating a positive trend in health. In terms of parity, a significant portion of the respondents, accounting for 77.4%, are categorized as "Multipara," indicating that they have experienced multiple pregnancies. Furthermore, in the context of occupation, a substantial proportion of respondents, making up 45.2%, are employed. These insights provide valuable information about the demographics of the study participants and their potential influence on the research findings.

Table 2
Frequency Distribution of the Duration of Second Stage of Labor in the Working Area of Tiuh Tohou Public Health Center, Tulang Bawang Regency, in the year 2023

The second stage of labor	Frequency	Percentage
Prolonged	5	16,1
Normal	26	83,9

Based on the table 2 above, it can be observed that the number of deliveries with prolonged second stage of labor in the working area of Puskesmas Tiuh Tohou in 2023 is 5 individuals (16.1%), while the number of deliveries with normal second stage of labor in the same area is 26 individuals (83.9%).

Table 3
Distribution of Frequency of Prenatal Exercises at Tiuh Tohou Public Health Center, Tulang Bawang Regency, in the Year 2023

Prenatal Exercises	Frequency	Percentage
Irregular	11	35,5
Regular	20	64,5

Based on the table 3 above, it can be observed that the number of pregnant women who engaged in irregular prenatal exercises in the Tiuh Tohou Public Health Center area in 2023 was 11 individuals (35.5%), while the number of pregnant women who engaged in regular prenatal exercises was 20 individuals (64.5%).

Bivariate Analysis

Based on Table 4, the results of the analysis of the relationship between prenatal exercise and the duration of the second stage of labor in the working area of Tiuh Tohou Public Health Center, Tulang Bawang Regency, in the year 2023 indicate that out of the 11 pregnant women who engaged in irregular prenatal exercise, 4 individuals (36.4%) experienced prolonged second stage of labor during childbirth, while 7 individuals (63.6%) had a normal second stage of labor. On the other hand, out of the 20 pregnant women who regularly practiced prenatal exercise, 1 individual (5.0%) experienced prolonged second stage of labor, and 19 individuals (95.0%) had a normal second stage of labor.

Table. 4

Relationship Between Prenatal Exercise and the Duration of Second Stage of Labor at Tiuh Tohou Public Health Center, Tulang Bawang Regency, 2023

Prenatal Exercises	Labor stage II				Total		P-Value	OR (95% CI)
	Prolonged		Normal		N	%		
	n	%	n	%				
Irregular	4	36,4	7	63,6	11	35,5	10,8	
Regular	1	5,0	19	95,0	20	64,5	(1,0-114,5)	

DISCUSSION

Univariate Analysis

Duration of the Second Stage of Labor

Based on the analysis results in this study, it was found that the number of childbirths with prolonged second stage of labor in the working area of Tiuh Tohou Public Health Center in the year 2023 was 5 individuals (16.1%), and the number of childbirths with normal second stage of labor was 26 individuals (83.9%).

These findings are consistent with the study conducted by Tandiono (2017) regarding the relationship between prenatal exercise and the duration of the first and second stage of labor at Sakina Idaman Maternity Hospital in Yogyakarta. The study showed that out of 68 respondents, 38 mothers (55.9%) experienced a normal second stage of labor, while 30 mothers (44.1%) had a prolonged second stage of labor.

According to the researcher, a prolonged second stage of labor is characterized by clinical signs and symptoms of complete cervical dilation, where the mother wants to push but there is no progress in the descent of the baby's head.

Prenatal Exercise

Based on the analysis results in this study, it was found that the number of pregnant women who engaged in irregular prenatal exercise in the working area of Tiuh Tohou Public Health Center in the year 2023 was 11 individuals (35.5%), and the number of pregnant women who engaged in regular prenatal exercise was 20 individuals (64.5%).

According to the researcher, through prenatal exercise, a prime condition is achieved by training and maintaining the strength of abdominal muscles, pelvic floor muscles, and supportive tissues to function during the course of labor.

Bivariate Analysis

Relationship between Prenatal Exercise and Duration of Second Stage Labor

The analysis results regarding the relationship between prenatal exercise and the duration of second stage labor in the working area of

Tiuh Tohou Public Health Center, Tulang Bawang Regency, in the year 2023 revealed that among the group of 11 pregnant women who engaged in irregular prenatal exercise, 4 individuals (36.4%) experienced prolonged second stage labor during delivery, while 7 individuals (63.6%) had a normal second stage labor. On the other hand, out of the 20 pregnant women who engaged in regular prenatal exercise, 1 individual (5.0%) experienced prolonged second stage labor and 19 individuals (95.0%) had a normal second stage labor.

The statistical test yielded a P-value of 0.042 ($P < 0.05$), indicating a statistically significant relationship between prenatal exercise and the duration of second stage labor in the working area of Tiuh Tohou Public Health Center, Tulang Bawang Regency in the year 2023. The analysis further produced an odds ratio (OR) value of 10.8 (95% CI: 1.0-114.5), implying that pregnant women who did not engage in regular prenatal exercise were 10.8 times more likely to experience prolonged second stage labor during delivery compared to pregnant women who practiced regular prenatal exercise.

These findings are supported by the research conducted by Juita (2017), which demonstrated an influence of prenatal exercise on the duration of both first and second stage labor in the Independent Midwife Practices Dince Safrina Pekan Baru". The statistical results showed a p-value of 0.005 for the first stage of labor and a p-value of 0.002 for the second stage of labor.

According to the researcher, a significant relationship exists between prenatal exercise and the duration of second stage labor in this study. This can be attributed to the fact that prenatal exercise can train muscles, enhance breathing, and increase the elasticity of the birth canal, potentially resulting in a faster normal delivery process. Observing the respondents, it was noted that some regularly practicing prenatal exercise had a prolonged second stage of labor, while others who did not regularly engage in prenatal exercise had a normal or faster second stage of labor. Moreover, the study revealed that 5% of pregnant women experienced prolonged second stage labor even though they engaged in

regular prenatal exercise. The researcher assumes that factors other than prenatal exercise, such as the mother's pushing strength and fetal factors like a short umbilical cord, might also influence the duration of the second stage of labor.

CONCLUSION

Based on the research findings and discussions presented, the conclusions drawn from this study are as follows: There is a significant relationship between prenatal exercises and the duration of the second-stage labor in the working area of Tiuh Tohou Public Health Center, Tulang Bawang Regency, in 2023, with a P-value of 0.042.

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