DRIVING FACTORS INFLUENCING THE INCIDENT OF PROLONGED LABOR AT PERMATA MADINA HOSPITAL PANYABUNGAN DISTRICT MANDAILING NATAL REGENCY NORTH SUMATRA PROVINCE IN 2025

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ABSTRACT

Prolonged labor is one of the obstetric complications that can increase the risk of maternal and infant morbidity and mortality. This condition is caused by various interacting factors, including maternal, fetal, and labor process factors. In Indonesia, the incidence of prolonged labor remains relatively high, especially in areas with limited access to optimal healthcare services. Permata Madina Hospital, located in Panyabungan District, Mandailing Natal Regency, North Sumatra Province, is one of the referral health facilities that handles severe obstetric cases, including prolonged labor. This study aimed to identify the factors influencing the incidence of prolonged labor at Permata Madina Hospital in 2024. The research employed a quantitative method with a case-control design. A total of 68 respondents participated, consisting of 34 mothers who experienced prolonged labor (cases) and 34 mothers with normal labor (controls), selected through purposive sampling. Data were analyzed using the Chi-Square test to determine the relationship between variables. The results showed a significant relationship between fetal weight, fetal presentation, and parity with the incidence of prolonged labor. Mothers with larger fetal weights, abnormal fetal presentations, and lower parity tended to experience prolonged labor. In conclusion, maternal and fetal factors play an important role in the occurrence of prolonged labor. Preventive efforts should focus on early detection and close monitoring of maternal and fetal conditions during pregnancy and labor. Healthcare professionals, especially midwives and doctors, are expected to enhance education for pregnant women about the importance of regular antenatal check-ups to reduce the incidence of prolonged labor and its complications

Keywords: Driving Factors, Influencing, Prolonged Labor

Introduction

Prolonged labor, or prolonged labor, is a childbirth complication that remains a problem in Indonesia, primarily because most deliveries are still assisted by non-medical personnel. Prolonged labor is defined as labor lasting more than 24 hours in primigravidas and more than 18 hours in multigravidas. This condition can lead to variouscomplications, such as dehydration, infection, maternal exhaustion, asphyxia, and even fetal death. Factors suspected to play a role include maternal age, parity, pregnancy spacing, fetal weight, and fetal presentation. (Sartika, 2024)

Phase of pregnancy, which is a period of significant transformation. The development of the fetus in the womb causes biochemical, physiological, and even psychological changes in addition to physical ones. Minor pregnancy-related problems include dependant edema, nocturia, constipation, shortness of breath,

heartburn, leg cramps, and lower back pain. Pregnant women are vulnerable to several forms of "stress" at this time, which might alter their physiological and metabolic processes.(Pasaribu and Yun, 2022).

Prolonged labor, or non-progressive labor, is a complication of childbirth. It is also a problem in Indonesia, as 80% of deliveries are still assisted by traditional birth attendants. Prolonged labor is defined as labor lasting more than 24 hours in primigravidas and more than 18 hours in multiples. Labor is the process of expelling the products of conception (fetus and uterus) that are full-term or capable of surviving outside the womb through the birth canal or other means without assistance (by one's own strength) (Ika Wulansari, Nur Ayun Yusuf, 2020). Data from WHO (World Health Organization) showed that as many as 558,000 women died due to childbirth problems, lower than The number of maternal deaths in 2013 was 581,000. 99 percent of maternal deaths were due to childbirth problems. or births occur in developing countries. (Who, 2025). According to the SDKI (Survey Indonesian Health Demography) in 2012. Maternal Mortality Rate (MMR) in Indonesia is 359/100000 Live Births. Mortality rate mothers in Indonesia are even worse than country Vietnamese. Target Which want to achieved in accordance objective SDGs (Sustainable Development Goals), in 2030 the MMR will decrease to 70 per 100,000 live births (Ministry Of Health RI, 2021)

In Indonesia, the mortality rate for mothers and babies is increasing; one of the causes is prolonged labor. This study aimed to determine the factors associated with prolonged labor events. This type of research is an analytical survey with a cross-sectional research design. The study population was all mothers giving birth to as many as 252 people, with a sample of 72

randomly taken. The research instrument uses a checklist sheet. The data used is secondary data obtained from medical records and documentation. (Aridtya Prayogi, 2024)

Discomfort is a regular occurrence during childbirth, and 90% of deliveries are always accompanied by discomfort. Out of 2,700 mothers who gave delivery, only 15% felt light discomfort, 35% reported moderate pain, 30% reported severe pain, and 20% expressed extremely severe pain. Mothers who have severe labor pain are more likely to suffer from psychiatric illnesses, including 10% depression, 3% psychosis, and 87% postpartum blues, which last from two weeks to a year following birth. (Jelita *et al.*, 2022)

Health care is a significant contributing factor to the high prevalence of maternal death in poor nations. According to reports, between 11% and 47% of maternal mortality in underdeveloped nations are caused by medical professionals providing inappropriate or insufficient treatment. Only a limited amount of knowledge and skills are provided by health workers' brief education and training. (Julianti, 2019)

Cervical dilatation and uterine contractions cause labor discomfort to start during the initial stage of labor. The intensity of the discomfort increases with the length and frequency of uterine contractions. The fetal and placental products of conception are expelled during labor, which is a normal part of a woman's life cycle. But each person's interpretation of this process is different and results in a singular experience. Labor pain is one of the causes of this.(Manurung *et al.*, 2024)

Health workers are expected to collect data on pregnant women to be used as targets for information on efforts to prevent childbirth complications. Distribute books KIA for all pregnant women who

visit for pregnancy check-ups at health facilities so that mothers can understand and learn about things that can increase the risk of complications in childbirth, especially prolonged labor (Hutagalung, 2014). Based on initial survey results, found 34 mothers giving birth who experienced *prolonged labor* during the period January-December 2023. This caused by by Baby big, CPD, And power Mother moment weak pushing (Irawati and Putri, 2025)

Research Method

After conducting the research, the results of this study can be described regarding the Driving Factors Influencing the Incidence of *Prolonged Labor* at Permata Madina Hospital, Panyabungan District, Mandailing Natal Regency, North Sumatra Province in 2024 with a total of 68

respondents using the chi square data analysis test. This type of research is quantitative with a case-control design, where variables are observed and measured only at specific points in time (Adriana A E Biney, 2017). The purpose of this study is to determine the relationship between the independent and dependent variables.

Result

After conducting the research, the results of this study can be described regarding the Driving Factors Influencing the Incidence of *Prolonged Labor* at Permata Madina Hospital, Panyabungan District, Mandailing Natal Regency, North Sumatra Province in 2024 with a total of 68 respondents using the chi square data analysis test

Table 1 Frequency and percentage distribution based on respondent characteristics at Permata Madina Hospital, Panyabungan District Regency Mandailing Natal Province Sumatra North 2024

No	Variables	Frequency (n)	Percentage (%)
1	**Age Mother**		
	<20 years	7	10.3
	20-35 year	50	73.5
	>35 years	11	16.2
	Total	**68**	**100**
2	**Education Mother**		
	Elementary School	4	5.9
	JUNIOR HIGH SCHOOL	3	4.4
	SENIOR HIGH SCHOOL	56	82.3
	PT	5	7.4
	Total	**68**	**100**
3	**Status Work**		
	Work	34	50
	No Work	34	50
	Total	**68**	**100**
4	**Parity**		
	Primipara	21	30.9
	Multipara	18	26.5
	Grandemultipara	29	42.6
	Total	**68**	**100**

5	**Birth Spacing**		
	<2 years	21	30.9
	2-5 year	32	47.1
	>5 years	15	22.1
	Total	**68**	**100**

Based on table 1, it shows that almost the majority of respondents are aged 20-35 years, as many as 38 respondents (73.1%), almost all of the respondents have secondary education, as many as 41 respondents (78.8%), most of the respondents work, as many as 29 respondents (55.8%), and almost the majority of the respondents are multigravida, as many as 27 respondents (35.5%).

Table 2 Distribution Frequency Factor Driver Which Influencing the Incidence of *Prolonged Labor* at Permata Madina Hospital, Panyabungan District, Mandailing Natal Regency, North Sumatra Province in 2024

No	Variables	Frequency (n)	Percentage (%)
1	**Presentation Fetus**		
	Abnormal	40	58.8
	Normal	28	41.2
	Total	**68**	**100**
2	**Heavy body fetus**		
	risky	45	66.2
	No risky	23	33.8
	Total	**68**	**100**
3	***Incident labor long/prolonged labor***		
	Yes	34	50
	No	34	50
	Total	**50**	**100**

Based on table 2, it shows that almost the majority of respondents had abnormal fetuses, as many as 40 respondents (58.8%), the majority of respondents had risky fetal weights, as many as 45 respondents (66.2%), half of whom experienced prolonged labor, as many as 34 respondents (50%).

Table 3 Table Cross Connection between presentation fetus with incident

Proloned Labor

Presentation fetus	Incident Prolong Labor				Total		P-Value
	Yes		No				
	n	%	n	%	n	%	
Abnormal	23	57.5	10	35.7	33	48.5	0.01
Normal	17	42.5	18	64.2	35	51.4	

Based on table 3 it shows that almost all of 23 (57.5%) women with abnormal fetal presentation experienced prolonged labor, while 18 (64.2%) women with normal fetal presentation did not experience prolonged labor. The *chi-square test* with a 95% confidence interval obtained a *p-value* of 0.01, indicating a significant relationship between fetal presentation and prolonged labor

Table 4 Table Cross Connection between heavy body fetus withincident proloned labor

Proloned Labor

Heavy body Fetus	Incident Prolong Labor				Total		P-Value
	Yes		No				
	n	%	n	%	n	%	
At risk	23	57.5	10	35.7	33	48.5	0.01
No							

Based on table 4 it shows that almost all of There were 23 mothers (57.5%) who had a fetal weight at risk of experiencing prolonged labor, and 18 mothers (64.2%) who had a fetal weight that was not at risk did not experience prolonged labor. The results of the *chi-square test* with a 95% confidence level obtained a *p value* of 0.01, thus the results showed that there was a relationship between significant relationship between fetal weight and the incidence of prolonged labor

Table 5 Table Cross Connection between presentation fetus with incident

Parity	Incident Prolonged				Total		P-Value
	NO		Yes				
	n	%	n	%	n	%	
Primipara	23	57.5	10	35	33	48.5	0.02
Multipara	10	25	5	17.8	20	29	
Grandemultipar	7	17.5	13	46.4	15	22.0	

Based on table 4.3 it shows that almost all of mothers giving birth with primiparity

parity do not experience prolonged labor as much 23 women (57.5%) and 13 women (46.4%) who gave birth with grandemultiparity experienced prolonged labor. The *chi-square test* with a 95%

Discussion

The *chi square* test with a 95% confidence level obtained a *p value* = 0.01, thus the results showed that there was a significant relationship between fetal weight and the incidence of prolonged labor.

In the analysis of the risk for fetal presentation with *Continuity Corretior,* there was a p *value of* 0.001, which means that fetal presentation abnormalities are related to the occurrence of prolonged labor. Fetuses in malposition and malpresentation often cause prolonged labor or obstructed labor.

This study found that high fetal weight, abnormal fetal presentation, and parity in grandemultiparas were significantly associated with prolonged labor. These findings align with previous research showing that large fetuses and abnormal presentations can cause complications during labor, increasing the risk of prolonged labor. Furthermore, parity also plays a role, with grandemultiparas at higher risk of prolonged labor than primiparas. (Fitriana, 2020)

Conclusion and Suggestion

A. Almost all respondents were aged 20-35 (38 respondents) (73.1%), almost all respondents had secondary education (41 respondents) (78.8%), most respondents were employed (29 respondents) (55.8%), and most respondents were multigravida (27 respondents) (35.5%).
B. Almost all respondents had abnormal fetuses (40 respondents) (58.8%), most respondents had high-risk fetal weights (45

confidence level obtained a *p-value* of 0.02, thus indicating a significant relationship between parity and the incidence of prolonged labor

respondents) (66.2%), and half experienced prolonged labor (34 respondents) (50%).
C. Almost half of the mothers who gave birth with high-risk fetal weights (23 respondents) experienced prolonged labor, while 18 women with low-risk fetal weights (64.2%) did not experience prolonged labor. The chi-square test results with a 95% confidence interval yielded a p-value of 0.01, indicating a significant relationship between fetal weight and prolonged labor.
D. Almost half of the women giving birth with an abnormal fetal presentation experienced prolonged labor (23 women (57.5%), while 18 women with a normal fetal presentation did not experience prolonged labor (64.2%).
A chi-square test with a 95% confidence interval yielded a p-value of 0.01, indicating a significant association between fetal presentation and prolonged labor.
e. Almost all primiparous mothers (57.5%) did not experience prolonged labor, while 13 grandemultiparous mothers (46.4%) experienced prolonged labor. The chi-square test with a 95% confidence interval yielded a p-value of 0.02, indicating a significant association between parity and prolonged labor.

Recommendations
1. Hospitals should improve programs to reduce complications that can arise from prolonged labor.
2. Educational institutions should provide references on prolonged labor.
3. Future researchers should examine larger variables and sample sizes.

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