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Role of Birth Companions in Influencing Labor Duration on Partus Mother

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ABSTRACT

Introduction: The maternal mortality rate in Indonesia remained high at approximately 7,389 deaths in 2021, attributed to several factors. One significant factor was prolonged labor caused by uterine contraction abnormalities due to disrupted oxytocin hormone secretion resulting from increased stress responses, thereby highlighting the importance of the presence of a birth companion. **Objective:** This research aimed to know the influence of birth companions on labor duration. **Methods:** This study employed a cross-sectional design and was conducted within the working area of the Public Health Center in Palu City, Central Sulawesi, from January to June 2024. The sample comprised 50 postpartum mothers. Data were collected using observation sheets, processed using SPSS, and analyzed with the Chi-square test. **Results:** The results indicated no significant relationship between the mother's choice of birth companion and the duration of labor, with a p-value > 0.05 (p-value = 0.642). However, 60% of mothers in labor chose their husband as their birth companion. **Conclusion:** There was no significant relationship found in this study's variables due to the limited knowledge possessed by birth attendants, which resulted in suboptimal task performance. It is recommended that future researchers conduct studies focusing on improving the knowledge of birth attendants or exploring other variables that influence labor progress.

INTRODUCTION

Labor and childbirth are physiological processes. Approximately 140 million births occur worldwide each year among women without risk factors for both the mother and the baby (World Health Organization, 2018). However, maternal mortality rates in Indonesia remain high, with around 7,389 deaths in 2021 attributed to various factors (Kemenkes RI., 2022). One significant factor is prolonged labor, which accounts for about 9% of maternal deaths in Indonesia (Yohanna, 2016). The most common cause of prolonged labor is abnormalities in uterine contractions, including strength, duration, and frequency (Gromova, 2019). Uterine contractions function to dilate the cervix and push the fetus out of the womb. If contraction disturbances occur during the first stage of labor, it can result in a prolonged latent phase (exceeding 20 hours in nulliparous women and 14 hours in multiparous womesn), thereby increasing maternal and fetal morbidity and mortality (F. Gary Cunningham, Kenneth J. Leveno, Steven L. Bloom, Jodi S. Dashe, Barbara L. Hoffman, Brian M. Casey, 2021). One factor causing abnormalities in uterine contractions is disrupted oxytocin hormone secretion due to stress. This aligns with research conducted by Dixon et al., (2013) which explains that

when a woman is about to give birth in a healthcare facility (a new environment), it can trigger an increased stress response that affects oxytocin levels during labor. Another study explains that the stress experienced by mothers during labor can lead to increased inhibition of oxytocin secretion (Walter et al., 2021).

To anticipate this, the World Health Organization recommends the presence of birth companions. A birth companion is someone who continuously accompanies the laboring mother throughout the childbirth process (Kabakian-Khasholian & Portela, 2017). Research shows that birth companionship is crucial as it can serve as a communication intermediary between the laboring mother and healthcare providers, provide emotional support, and importantly, a birth companion can act as a witness in case of any errors in the care provided by healthcare professionals and/or neglect (World Health Organization, 2020). Research indicates that birth companions increase vaginal deliveries, thereby reducing Caesarean sections, the use of forceps or vacuum, and the use of pain relief during labor (Kabakian-Khasholian & Portela, 2017). According to (Yaya Bocoum et al., 2023), the most frequently chosen birth companions by mothers are, respectively, husbands, family members, and friends.

The study found that the average labor duration for women with a birth companion was approximately 9.96 hours, whereas the average labor duration for women without a companion was 11.66 hours, demonstrating a statistically significant difference (p=0.01) (Seth et al., 2023). Another study showed that companionship during labor improved outcomes for women and infants, including increased rates of spontaneous vaginal birth, and shorter labor duration (Dubey et al., 2023). On the other hand, the meta-analysis demonstarted the positive effects of continuous labour support across various outcomes. Familiar labour companions had a higher effect size in reducing tocophobia, 1.73 (95% CI 1.49, 2.42), compared to unfamiliar companions, 1.34 (95% CI 1.14, 1.58). Moreover, studies conducted after 2000 showed a more significant impact on reducing labour duration (Jayasundara et al., 2024). The aim of this study is to understand the relationship between the mother's choice of birth companion and labor duration.

METHOD

This study used to cross-secsional design, this study aims to measure the independent and dependent variables simultaneously. The population in this study comprises all Parturient mothers within the service area of community health centers under the Health Department of Palu. The sampling was conducted using accidental sampling, this method was chosen because the researches needed to access hard-to-reach participants, specifically mothers in labor. The number of mothers in labor was limited, and the researchers had limited time to conduct the study. To minimize bias, the researchers conducted pre-registration to ensure similar characteristic among respondents. The sample size, determined using the Slovin formula, is a statistical tool used to calculate the minimum sample size required for estimating a population parameter with a specified margin of error. This formula is particularly useful when the population is large, and it is impractical to survey every individual. The calculation result using the Slovin formula in this research yielded 50 participants. The independent variable in this study is the duration of labor, assessed by contractions categorized into duration, frequency, and intensity within a 10-minute interval. The dependent variable in this study is the labor companion chosen by the mother, which may include the husband or other family members.

In this study, data were collected using a partogram during the childbirth process in parturient women. A partogram is a graphical tool used to monitor labor progress

and the well-being of both the mother and fetus during childbirth, as recommended by the World Health Organization. The partogram has two important parts: monitoring parameters such as maternal indicators, including vital signs, uterine contractions, time of membrane rupture, urine output, and medications administered. Moreover, the partogram also includes fetal indicators, such as fetal heart rate, characteristics of amniotic fluid (color, odor, quantity), and the descent of the fetal head. Additionally, it has a graphical representation, with a central feature being a graph that tracks cervical dilation starting from 4 cm. To ensure proper data collection, the researchers conducted training with enumerators on how to use the partogram. Data processing was conducted using SPSS version 20 and data analysis was performed using the chi-square test with a significance level of p-value < 0.05. This study received ethical approval from the Research Ethics Committee (KEP) of the Health Polytechnic of the Ministry of Health in Palu, with approval number 000217/KEPK POLTEKKES KEMENKES PALU/2024.

RESULTS

The results of data processing and analysis can be seen in the following table:

Table 1. Frequency distribution of respondent characteristics

Variable	n (50)	%
Gravida:		
Nulliparous	14	28.0
Multiparous	36	72.0
Age		
< 19 years or > 35 years	7	14.0
19 – 35 years	43	86.0
Dilation (cm)		
Dilation 0 – 3 cm	7	14.0
Dilation 4 – 10 cm	43	86.0
Birth weight of the Baby		
< 2500 grams or > 3500 grams	8	16,0
2500 – 3500 grams	42	84,0

Based on Table 1, data from 50 research respondents were obtained. The majority of respondents are multiparous, with 36 respondents (72.0%), while nearly half of the respondents are nulliparous, with 14 respondents (28.0%). The age category of nearly all respondents is between 19 and 35 years, with 43 respondents (86.0%), while a small proportion of respondents are under 19 years or over 35 years, with 7 respondents (14.0%). The dilation (cm) for nearly all respondents falls into the 4–10 cm category, with 43 respondents (86.0%), while a small proportion of respondents are in the 0–3 cm category, with 7 respondents (14.0%). For birth weight, nearly all respondents have a weight between 2,500 and 3,500 grams, with 42 respondents (84.0%), while a small proportion of respondents have a weight either under 2,500 grams or over 3,500 grams, with 8 respondents (16.0%).

Table 2. Frequency distribution of the relationship between the mother's chosen labor companion and the duration of labor

Birth Companion	Duration of Labor				p-value
	Prolong Labor		Normal Labor		
	n (28)	% (56.0)	N (22)	% (44.0)	
Husband	16	32.0	14	28.0	0.642
Family	12	24.0	8	16.0	

Table 2 showed that the relationship between the labor companion and the duration of labor was analyzed using the chi-square test. The results indicated that nearly half of the respondents who were accompanied by their husbands during labor experienced prolonged labor, with 16 respondents (32.0%). The p-value indicated that there was no significant relationship between the labor companion and the duration of labor (p=0.642).

DISCUSSION

Labor was divided into four stages: Stage I (the dilation phase), Stage II (the expulsion phase), Stage III (the placental phase), and Stage IV (the recovery phase). Each stage of labor carries the risk of complications. One such complication that could occur during Stage I is prolonged labor. Stage I was divided into two phases: the latent phase, which started from cervical dilation of 0 to 4 cm, and the active phase, which began from 4 cm dilation to full dilation of 10 cm (Yaya Bocoum et al., 2023). Prolonged labor, defined as Stage I lasting more than 14 hours for multiparous women and more than 20 hours for nulliparous women, is a complication that can arise during Stage I (Friedman & Cohen, 2023). Prolonged labor can increase the risk of complications for both the mother and the fetus, such as cesarean section, uterine rupture, and fetal distress. These complications contribute to maternal and fetal mortality and morbidity (Maaløe et al., 2023).

Prolonged labor was caused by many factors. In general, it could be categorized into psychological and physical factors. Physical factors that influenced prolonged labor included primigravida, the mother's age at delivery, fetal position, fetal malpresentation, contractions, and the baby's weight (Wulansari et al., 2022). Meanwhile, psychological factors that could have influenced the progress of labor included the emotional state and support given to the mother in labor. One form of support that could have been provided was the presence of the husband, family members, or a person trusted by the mother to accompany her during labor, which could have helped the mother feel relaxed and calm. This could have reduced stress and improved the birthing experience (Lunda et al., 2018). A labor companion is an individual who provides emotional support, ensures comfort, and acts as a communication intermediary between the midwife and the laboring mother during labor. This companion can be a husband, friend, or other family member. The role of the labor companion is to ensure the health of both the mother and the baby (Bharti et al., 2021).

The results of this study indicate that there is no significant relationship between the chosen birth companion and labor duration. According to the researchers' assumption, this may occur due to the lack of knowledge of birth companions in supporting women during labor. This finding aligns with previous research showing that birth companions do not provide adequate support because they lack knowledge about labor assistance (Kungwimba et al., 2013). In addition, the lack of facilities in healthcare services means that there are no spaces available for birth companions to perform their duties in supporting women during labor effectively. This is supported by research stating that implementation obstacles included facility-related limitations, cultural preferences, care organization, and budget allocation (Kabakian-Khasholian & Portela, 2017). Another study stated that the lack of private rooms for women, cramped labor and delivery wards, hospital policies that forbid companionship, and social standards that prevent women from selecting their own companions are all major obstacles to establishing companionship during labor and delivery (Yaya Bocoum et al., 2023).

This study has several limitations, including the general categorization of the research sample, which prevents a detailed understanding of the respondents' characteristics and the relationship between birth companions and laboring women. Furthermore, the instrument used only measured labor progress, and there was no instrument to assess the extent to which birth companions performed their duties in supporting women during labor. The availability of birth companion facilities was assessed observationally, without any valid measurement tools. Based on these limitations, it is necessary to conduct measurements of the knowledge, roles, and functions of birth companions in carrying out their duties according to world health organization recommendations. Additionally, the development of valid measurement tools is needed to assess birth companions and healthcare facilities in supporting the health of mothers and infants.

CONCLUSION

This study concludes that the chosen birth companion does not have a significant relationship with prolonged labor because the birth companion did not perform their duties effectively according to the recommendations of the World Health Organization (WHO). This was attributed to a lack of knowledge and inadequate facilities provided by healthcare services for birth companions. Recommendations for healthcare facilities include supporting the presence of birth companions, as this has been recommended by the WHO. For future research, it is suggested to focus on interventions aimed at improving the knowledge of birth companions to ensure they can perform their duties optimally.

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