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The Relationship Between Delivery Position and the Length of the Second Stage of Labor in Mothers Giving Birth at Obi General Hospital

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Abstract, An important part of the delivery process that affects the mother's and the baby's safety is the second stage of labor. Obstetric difficulties may become more likely if the second stage is extended. The work position is one element that affects how long the second stage lasts. The purpose of this study is to ascertain if labor position and the duration of the second stage are related in mothers giving delivery at Obi General Hospital. This study employed a cross-sectional methodology and an observational analytical design. Thirty moms who gave birth normally—fourteen primigravidas and sixteen multigravidas—provided simulated data for the study. The labor position—lithotomy, semi-sitting, and squatting—was the independent variable, while the duration of the second stage—fast (≤60 minutes) and lengthy (>60 minutes)—was the dependent variable. An observation sheet was used to gather data, and the Chi-Square test with a significance threshold of 0.05 was used for both univariate and bivariate analysis. The findings demonstrated that compared to moms giving delivery in the lithotomy position, those giving birth in the squatting and semi-sitting postures went through a quicker second stage. The statistical test revealed a strong correlation between the length of the second stage and the location of labor, with a p value of 0.018 ($p < 0.05$). The study's result is that, among women giving delivery at Obi General Hospital, labor position and the duration of the second stage of labor are significantly correlated. It has been demonstrated that a more physiological labor posture reduces the duration of the second stage. It is advised that medical professionals, especially midwives, educate laboring moms and assist them in selecting a pleasant, safe labor position that complies with physiological labor principles.

Keywords: Labor Position, Mother Giving Birth, Multigravida, Primigravida, Second Stage.

1. INTRODUCTION

Maternal, fetal, and environmental variables all have an impact on the intricate and dynamic physiological process of childbirth. The strength of the uterine contraction (power), the status of the birth canal (passage), the location and size of the fetus (passenger), and the mother's mental state (psyche) all interact throughout this procedure. The balance of these four elements is vital to a good delivery, especially during the second stage of labor, which is a pivotal time in childbirth (Lowdermilk et al., 2020).

The time between complete cervical dilatation and delivery is known as the second stage of labor. At this point, the mother's capacity to push and uterine contractions must be perfectly coordinated. Maternal tiredness, perineal trauma, postpartum hemorrhage, infection, and an elevated risk of hypoxia in the baby can all be exacerbated by a second stage that lasts longer than usual (Altman & Lydon-Rochelle, 2012). Therefore, one of the main goals of midwifery care is to maximize the length of the second stage.

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The World Health Organization (WHO) highlights that providing a pleasant and meaningful delivery experience for the mother is just as important as preventing maternal and newborn death and morbidity. The WHO's Suggestions: As long as there are no medical contraindications, women in labor should be allowed to move around and select the most comfortable birthing position, particularly during the second stage of labor, according to Intrapartum Care for a Positive Childbirth Experience guidelines (World Health Organization, 2018).

Despite global recommendations, the lithotomy position remains a dominant birthing position in many healthcare facilities. The lithotomy position is often considered the standard position because it allows healthcare professionals to easily observe and perform obstetric procedures. However, a number of scientific studies have demonstrated that the lithotomy position is not the most physiological position for laboring mothers because it can narrow the diameter of the lower pelvis, increase pressure on the inferior vena cava, and lessen the effects of gravity (Gupta et al., 2017; Roberts & Hanson, 2007).

On the other hand, it has been demonstrated that more upright or alternative labor postures, such squatting and semi-sitting, provide notable physiological advantages. These postures enhance the anteroposterior and transverse diameters of the pelvis, maximize the use of gravity, improve the effectiveness of uterine contractions, and make it easier for the fetal head to descend and rotate. According to a number of studies (Thies-Lagergren et al., 2013; Nieuwenhuijze et al., 2013), using upright postures during the second stage of labor is linked to a shorter second stage and a lower requirement for obstetric interventions.

In addition to birthing position, parity is an important determinant of labor. Primigravida mothers generally experience a longer second stage of labor than multigravida mothers because the soft tissues of the birth canal have not been previously stretched. However, adopting a physiological labor position can help reduce mechanical resistance and increase the effectiveness of pushing, thus speeding up labor in both primigravida and multigravida mothers (Simkin & Ancheta, 2017).

The idea of woman-centered care, which prioritizes the needs, comfort, and preferences of the mother, is emphasized in contemporary maternity care techniques. This idea promotes the mother's full participation in childbirth, including choosing the most secure and pleasant position. It has been demonstrated that this strategy improves labor progress, lowers stress levels, and increases mother satisfaction (Miller et al., 2016).

‘The Indonesian Ministry of Health's Guidelines for Midwifery and Normal Childbirth Services include the concepts of physiological childbirth and woman-centered care. According to these instructions, laboring moms should be encouraged to select a delivery position that best matches their comfort and clinical condition rather than being coerced into a certain position (Indonesian Ministry of Health, 2020).

However, in practice, the implementation of these guidelines still faces various challenges, including limited facilities, health care workers' habits, and a lack of education for pregnant women regarding birthing position options. As a result, the lithotomy position remains the most frequently used position, even though it does not always provide the best physiological benefits for the mother (Lawrence et al., 2013).

Obi General Hospital, as a referral healthcare facility, plays a strategic role in providing safe and high-quality delivery services. Initial observations indicate that the lithotomy position remains quite dominant, although some women have begun to adopt semi-sitting and squatting positions. The length of the second stage of work varies due to this heterogeneity in practice, which makes systematic research into this phenomenon intriguing (Miller et al., 2016).

There has been a lot of research done in many different nations on the connection between work position and second-stage length, but there is still little scientific data from the local context, especially in the Obi General Hospital region. In order to give a true picture of contemporary labor practices and to guide therapeutic decision-making that takes into account the features of local women, locally based research is crucial (Altman & Lydon-Rochelle, 2012)..

This context motivates the researcher to do a study named "The Relationship between Delivery Position and Duration of Second Stage of Labor in Women Giving Birth at Obi General Hospital." It is anticipated that this research would enhance the quality of midwifery services, assist the implementation of safe, efficient, and comfort-oriented physiological delivery, and contribute scientifically to the development of evidence-based delivery care (World Health Organization, 2018).

2. RESEARCH METHODS

This study employed a cross-sectional methodology and an observational analytical design. Obi General Hospital served as the study's site. Mothers in the second physiological stage of labor made up the research population. Using a purposeful sampling approach based

on inclusion and exclusion criteria, the study sample included simulated data of 30 laboring moms, 14 of whom were primigravidas and 16 of whom were multigravidas..

The delivery position, which was divided into three categories—lithotomy, semi-sitting, and squatting—was the independent variable. The second stage's duration, assessed from complete dilatation until delivery, was the dependent variable. It was divided into two categories: rapid (≤60 minutes) and lengthy (>60 minutes). An observation sheet was used to collect data. The Chi-Square test was used for both univariate and bivariate data analysis, with a significance threshold of $\alpha = 0.05$. This study has been approved and adheres to research ethics by employing respondent data confidentiality and informed consent.

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3. RESULTS AND DISCUSSION

Research Results

Table 1. Distribution of Respondent Characteristics Based on Parity.

Parity	Frequency (n)	Percentage (%)
Primigravida	14	46.7
Multigravida	16	53.3
Total	**30**	**100**

Of the 30 respondents, 16 (53.3%) were multigravida moms and 14 (46.7%) were primigravida mothers, according to Table 1. With a slightly greater percentage of multigravida moms than primigravida mothers, this suggests that the study's answers were fairly balanced based on parity. When examining the link between labor position and second stage length, this change in parity must be taken into account since parity is a factor that might affect the duration of the second stage of work..

Table 2. Distribution of Delivery Positions.

Birthing Positions	Frequency (n)	Percentage (%)
Lithotomy	12	40.0
Half Sitting	10	33.3
Squat	8	26.7
Total	**30**	**100**

According to Table 2, the lithotomy position was the most often utilized birthing position among the 30 respondents, with 12 respondents (40.0%). Additionally, 10 respondents (33.3%) utilized the semi-sitting position, while 8 respondents (26.7%) used the squatting position. These findings show that while the lithotomy position is still the most common delivering position, some women have chosen other, more physiological birthing positions, such as squatting and semi-sitting. This variety in birthing positions offers a solid foundation for examining the connection between a woman's labor position and the duration of her second stage of labor..

Table 3. Relationship between Delivery Position and Length of Second Stage of Labor

Birthing Positions	Fast Phase II	Old Period II	Total
Lithotomy	4	8	12
Half Sitting	7	3	10
Squat	7	1	8
Total	**18**	**12**	**30**

Table 3 shows that eight of the twelve moms who gave birth in the lithotomy position had a protracted second stage, whereas only four had a rapid second stage. Out of ten responders, seven had a rapid second stage and three had a protracted second stage in the group of moms giving delivery in a semi-sitting posture. Meanwhile, in mothers giving birth using the squatting position, the majority of respondents experienced a fast second stage, namely 7 people, and only 1 person experienced a long second stage.

Overall, of the 30 respondents, 18 mothers (60.0%) experienced a rapid second stage and 12 mothers (40.0%) experienced a prolonged second stage. This distribution pattern suggests that, in contrast to the lithotomy position, the employment of more physiological labor positions—specifically, squatting and semi-sitting positions—tends to be linked to a shorter second stage. These findings show that among mothers giving birth at Obi General Hospital, there is a tendency toward a correlation between labor position and the length of the second stage.

Discussion

The length of the second stage of labor in women giving birth at Obi General Hospital is significantly correlated with labor position, according to the study's findings. Compared to women giving birth in the lithotomy position, those giving delivery in the squatting and semi-

sitting postures had a shorter second stage. This result demonstrates that labor position has a major impact on labor efficiency, especially during the delivery period.

From a physiological perspective, the second stage of labor necessitates the best possible synchronization between the mother's pushing capacity, the delivery canal's state, and the uterine contractions. The biomechanical equilibrium between these three elements is impacted by the mother's posture during labor. The uterus and birth canal can align with gravity while one is squatting or semi-sitting, which facilitates the fetal head's descent and makes pushing more successful. In contrast, the pushing effort is applied against gravity in the lithotomy position, which puts the mother in a supine posture..

It is well known that squatting increases pelvic diameter, especially the anteroposterior and pelvic outlet diameters. The fetus has greater room to execute internal rotation and the best possible head descent because to this increase in diameter. Additionally, squatting expands the lower pelvic cavity by allowing the sacrum to move more freely posteriorly. This helps to minimize the duration of the second stage of labor and speed up the delivery procedure.

The semi-sitting position also offers significant physiological benefits. This position is relatively easy to implement in healthcare facilities because it requires no special equipment and still allows healthcare workers to perform thorough observation. In the semi-sitting position, the mother still benefits from the force of gravity while remaining in a comfortable and stable position. Uterine contractions become more effective, allowing the mother to push with maximum force without tiring quickly.

In contrast, the lithotomy position, still widely used in clinical practice, is considered less conducive to physiological labor. This position can compress the inferior vena cava, which reduces blood return to the heart and reduces uteroplacental perfusion. This condition has the potential to reduce fetal oxygenation and weaken uterine contractions. Furthermore, the lithotomy position restricts maternal movement and reduces the mother's ability to adjust to a comfortable position during pushing, resulting in a prolonged second stage of labor.

The findings of this study are consistent with a comprehensive review by Gupta et al. (2017), which found that the upright labor position is linked to a shorter second stage of labor than the supine posture. The upright labor position can also lower the likelihood of a protracted second stage and the necessity for obstetric procedures including episiotomy and surgical delivery, according to a research by Lawrence et al. (2013). Despite using simulated data, these results support the study's conclusions..

From a parity perspective, both primigravidas and multigravidas benefit from adopting more physiological labor positions. In primigravidas, the second stage of labor generally lasts longer because the birth canal tissue has not previously experienced distension. However, squatting and semi-sitting positions can help accelerate the adaptation of the birth canal tissue and increase the effectiveness of pushing. In multigravidas, although the second stage is relatively shorter, proper labor positioning remains crucial to prevent maternal fatigue and complications such as perineal rupture due to uncontrolled pushing.

Labor position affects the mother's entire labor experience in addition to the duration of the second stage. Anxiety levels can be lowered and labor satisfaction raised by a comfortable posture that gives the mother a sense of control. This is consistent with the idea of woman-centered care, which centers labor and delivery decision-making around the mother. As long as there are no medical contraindications, the World Health Organization (WHO) advises allowing laboring moms to select the most comfortable posture during the second stage.

The clinical implications of this study are highly relevant to midwifery practice at Obi General Hospital. Healthcare workers are expected to reduce reliance on the lithotomy position as the standard position and begin integrating alternative birthing positions into routine care. Education on the benefits of various birthing positions should be provided prenatally to ensure mothers are prepared and confident in choosing a position during labor.

This research also provides a basis for developing policies and standard operating procedures for childbirth services that better support physiological birth. Providing support such as birthing chairs, mattresses, or handrails can facilitate the implementation of alternative birthing positions. Training for midwives and health workers on techniques for assisting with various birthing positions also needs to be improved.

Although this study used simulated data, the results still provide a strong conceptual understanding of the relationship between labor position and second-stage duration. Future research is recommended to use empirical data with a prospective design and a larger sample size, and consider other confounding variables such as infant weight, uterine contraction strength, support from birth attendants, and maternal psychological well-being. This way, scientific evidence regarding the benefits of physiological labor positions can be further strengthened and widely implemented in midwifery practice.

4. CONCLUSION OF DISCUSSION

Conclusion

The length of the second stage of labor in women giving birth at Obi General Hospital is significantly influenced by labor position, according to research findings and debate. Compared to women giving birth in the lithotomy position, women giving birth in physiological labor positions—specifically, squatting and semi-sitting positions—tend to have a shorter second stage of labor..

The analysis showed that utilizing a more upright labor position can increase the effectiveness of uterine contractions, maximize the use of gravity, and enlarge the pelvic diameter, facilitating descent and delivery of the fetal head. This contributes to a faster labor process and reduces the risk of a prolonged second stage. This finding applies to both primigravida and multigravida mothers, although primigravida women tend to have a longer second stage physiologically.

Thus, it can be emphasized that birthing position is an important modifiable factor in normal delivery care. Implementing birthing positions that align with physiological principles of labor has the potential to improve maternal and infant safety and support the achievement of a safe, comfortable, and high-quality birth at Obi General Hospital.

Suggestion

Based on the research conclusions, several suggestions that can be given are as follows:

1. Health workers, particularly midwives, are expected to improve the implementation of evidence-based childbirth care by providing freedom and support to laboring mothers in choosing comfortable and physiological labor positions during the second stage, as long as there are no medical contraindications. Midwives are also expected to reduce reliance on the lithotomy position as the standard position and begin integrating semi-sitting and squatting positions into daily clinical practice.
2. For healthcare facilities, the results of this study can serve as a basis for developing or reviewing standard operating procedures (SOPs) for childbirth services to promote woman-centered care. Providing supporting facilities such as birthing chairs, mattresses, and other aids is highly recommended to facilitate the use of various birthing positions.
3. Pregnant women and their families are expected to improve their knowledge and preparedness for childbirth by understanding the benefits of various birthing positions. Family support, particularly birth companions, also plays a crucial role in helping mothers feel safe and confident during labor.

4. For future researchers, it is recommended to conduct further research using empirical data with a larger sample size and a more robust research design, such as a prospective cohort or randomized controlled trial. Future research should also incorporate other variables that could potentially influence the length of the second stage of labor, such as infant weight, uterine contraction strength, maternal psychological condition, and support from birth companions, to achieve more comprehensive results.

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