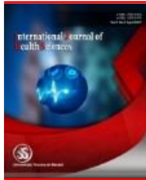

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Maternal and newborn outcomes of upright versus supine birthing position in Sub-Saharan Africa: A systematic review

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Abstract---Background: Maternal positioning during the second stage of labour, such as the supine (including lithotomy) or upright (like sitting) positions, plays a significant role in influencing both maternal and fetal outcomes during delivery. ***Aim***: The aim of this systematic review is to compare maternal and neonatal outcomes between upright and supine birthing positions during labour. ***Methods***: A search was done across various research databases but only three research databases (PubMed, Scopus and Google Scholar) yield articles carried out in sub-Saharan Africa. The Search was done to identify related studies carried out within Sub-Saharan Africa, for

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the past twenty-year period (2004-2024), in English language or translated to English. In addition, manual searches were conducted on the reference lists of the identified studies. Out of all searched literature, five studies retrieved (1quantitative comparative study1 prospective study, 1 quasi-experimental, 1 three-arm, open-label, randomized controlled trial and Quasi-experimental, non-equivalent control group post-test-only design). Relevant data were extracted with the aid of data extraction form, and analysed descriptively. ***Results***: Five studies involving 3,376 laboring women from diverse Sub-Saharan African countries, including Tanzania, Ethiopia, Benin, Nigeria, and South Africa, met the inclusion criteria. The literature review highlighted five key themes: duration of the second stage of labor, mode of delivery, maternal labor pain, fetal outcomes, and the most prevalent theme—perineal tears and the performance of episiotomies. ***Conclusion***: Majority of the articles demonstrate the positive effect of upright position during the second stage of labour compared to supine position on maternal and foetal outcomes.

***MeSH Keywords*---**Upright position, supine position, maternal birth outcomes, foetal birth outcomes, second stage of labour, childbirth, Sub-Saharan Africa.

Introduction

One of the known interventions for preventing child/maternal complications and death during labour involves the adoption and application of appropriate birthing positions during the stages of labour. The choice of birthing positions has an important effect on maternal and child health even after delivery. Abnormal or inappropriate birthing positions during the stages of labour are not only one of the leading factors of death and complications but also have a lot of consequences afterwards.

Research has shown that upright positions are associated with increased pelvic diameter, facilitating a smoother passage for the newborn. These positions may reduce the duration of the second stage of labor and the need for instrumental deliveries. On the other hand, the supine position or lithotomy position that is commonly used may compress major blood vessels, impede blood flow and invariably lead to reduced blood flow and oxygen delivery to the fetus and the mother, thus potentially complicating maternal and neonatal outcomes. Agunda, (2022), in a dissertation study, stated that upright position ('all fours') has better outcome compared to lithotomy birth position.

Maternal and newborn health in Sub-Saharan Africa remains a critical public health priority, with the region accounting for a significant portion of global maternal and neonatal mortality. Despite considerable efforts to reduce these rates, challenges persist due to limited healthcare resources, access to skilled birth attendants, and socio-cultural factors that influence maternal care practices. Ensuring safe and effective childbirth practices is a key component in

addressing these challenges, with the birthing position of the mother being a crucial yet often overlooked aspect of care.

Birthing positions during labor and delivery can vary widely, and they are known to influence both maternal comfort and clinical outcomes. The two most common birthing positions are the upright position (which includes standing, sitting, squatting, or kneeling) and the supine position (lying on the back). In many Sub-Saharan African communities, cultural norms and traditional practices have long favored upright birthing positions during the 17th century. However, with the introduction of modern medical practices, the supine position has become more prevalent in healthcare facilities.

The research research er throughout her professional midwifery practice in different hospitals in sub-Sahara African countries including Kenya, Tanzania, Ghana and home-Nigeria, observed that majority of the laboring women are encouraged to adopt supine position during second stage. Diorgu et al. (2016) confirmed this observation, when it was reported that 98% of women still adopt the lithotomy position to give birth in Nigeria.

Krywko & King, (2021) stated that when venous return from the lower extremities back to maternal heart is impeded due to compression of inferior vena cava and aorta by gravid uterus in horizontal position, resulting to supine hypotensive syndrome. This may not be unconnected with high maternal and foetal mortality recorded in most health facilities in sub-Sahara Africa where majority of women are not allowed to make choice in the birthing positions used during second stage of labour (WHO, 2015). The result of this (i.e. maintenance of this status quo of birthing position) is that there are cases of avoidable complications where some babies are born with severe asphyxia, brain damage and even stillbirth (Poinsett,2020).

According to World Health Organization (WHO), care of a woman during second stage in a normal birth should promote the adoption of position preferable by the mother except supine position. Women should not be forced to adopt any particular position that is uncomfortable to them; rather they should be assisted to assume position of their choice that is not harmful to both the mother and the fetus. The health attendants should be equipped with all the necessary training to be able to support the evidence based practice (WHO, 2018).

This topic is of significant importance for improving maternal and newborn health outcomes. Understanding the impact of different birthing positions could lead to more informed choices during labor, optimizing care practices, reducing unnecessary interventions, and ultimately enhancing the health and safety of both mother and child. Therefore, reviewing and synthesizing the existing evidence on this matter is critical for guiding clinical practice and ensuring the best possible outcomes.

Systematic Review Questions

1. How do maternal outcomes differ between women who give birth in upright positions compared to those in supine positions?

2. What are the neonatal outcomes associated with upright versus supine birthing positions?

Systematic Review Justification and Significance

It is important to examine the impact of different birthing positions on maternal and newborn outcomes because each position carries its own potential benefits and risks. The upright birthing position is believed to facilitate more efficient labor by leveraging gravity, potentially reducing the duration of labor and the need for medical interventions such as episiotomies or assisted deliveries. Additionally, some studies suggest that the upright position may lead to fewer instances of perineal trauma and improved maternal comfort.

In contrast, the supine position is more commonly used in clinical settings due to ease of monitoring and intervention by healthcare providers. However, it has been associated with longer labor durations, increased perineal trauma, and restricted blood flow, which may negatively impact maternal and newborn health outcomes. Given the ongoing challenges in maternal and neonatal health in Sub-Saharan Africa, understanding the potential benefits and risks of different birthing positions is crucial. Identifying the optimal birthing position could improve labor outcomes, reduce complications, and contribute to broader efforts.

The position adopted during labor has been a topic of considerable debate, with some advocating for the traditional supine (lying down) position, while others suggest the benefits of upright positions (e.g., standing, squatting, or sitting). There is increasing evidence suggesting that the birthing position can affect both maternal and neonatal outcomes, including labor duration, rates of medical interventions (such as cesarean section or episiotomy), maternal comfort, and neonatal health (e.g., Apgar scores). Therefore, it is pertinent for mothers to have a good labour experience and delivery process that impacts pleasant memories to them in order to create a healthy start in the maternal experience. A systematic review will synthesize the existing evidence to provide a comprehensive understanding of how upright and supine positions during labor impact maternal and neonatal outcomes.

Methods

Study Design and Search Strategy

This review adhered to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines (Sarkis-Onofre et al., 2021). A systematic search was conducted across three databases: PubMed, Scopus and Google Scholar, targeting studies on validation **on** maternal and newborn outcomes of upright versus supine birthing position in Sub-Saharan Africa. The search was restricted to peer-reviewed articles published between 2014 and 2024. Additionally, a manual reference search was performed on the identified studies using both the ancestor and descendant approach.

Eligibility Criteria

Study Eligibility **(Inclusion)**: Randomized controlled trials (RCTs), cohort studies, case-control studies, and quasi-experimental studies comparing maternal and newborn outcomes between upright and supine birthing positions. Study Eligibility (Exclusion): Case reports, opinion pieces, reviews without original data, and studies that do not provide comparative data on both positions.

PICOT Question:

PICOT	CONTENT	PICOT QUESTION	
P	Women in labour	"What are the differences in maternal and newborn outcomes associated with upright versus supine birthing positions among women giving birth in Sub-Saharan Africa?**"**	
1	Women in labour who adopt the upright position in the second stage of labor		
C	Women in labour who adopt the supine position in the second stage of labor		
O	Maternal and fetal outcomes		
T	Pushing phase (second stage of labour)		
Type	Intervention PICOT question		

Articles Selection and Screening Process

The electronic search was completed with the search terms upright position in the second stage, sitting position, supine position, maternal delivery outcomes, fetal delivery outcomes, maternal and fetal childbirth, Sub-Saharan Africa. The researcher evaluated each article based on the inclusion criteria. The studies selected involved women of all ages, both those who had never given birth (nulliparous) and those who had given birth before (multiparous), with gestational ages between 37 and 42 weeks, carrying a single viable fetus in a cephalic presentation. The labor was either spontaneous or induced. Studies were excluded if they did not primarily focus on maternal and fetal delivery outcomes or maternal delivery positions (upright and supine). In the end, five articles were included in the reviews that were carried out in Sub-Saharan Africa.

Quality assessment

The included studies in this review represent a range of quantitative designs, each with varying strengths and potential biases. The single Randomized Controlled Trial (RCT), considered the gold standard for assessing causality, the Prospective Cohort study which allows for observing outcomes over time in a real-world setting, offering moderate-quality evidence. The Case-Control study useful for examining rare outcomes but is inherently more susceptible to recall and selection bias. The two Quasi-Experimental studies provide insights in settings where randomization is not feasible.

Search Strategies

This review was systematic in its approach and was guided by Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) guidelines. A review of the literature was conducted using different databases including the Database of Cumulative Index of Nursing and Allied Health Literature "CINHAL," Database of the National Library of Medicine "Pub MED," Database of Medical Literature Analysis and Retrieval System Online "Medline", Google Scholar, Embase and African Journals Online (AJOL). Three databases yielded articles from Sub-Saharan Africa, Pub Med, Scopus and Google Scholar. The review focused on studies that had met the inclusion and exclusion criteria based on the developed PICOT question.

The inclusion criteria for this review entailed: articles of weighted research quality, published from 2004 - 2024. Articles published in English language, or translated to English which dealt with the comparison between the upright and the supine maternal birthing position on maternal and fetal outcomes. The inclusion criteria encompassed studies examining randomized controlled trials (RCTs), cohort studies, case-control studies, comparative studies and quasi-experimental studies comparing maternal and newborn outcomes between upright and supine birthing positions. While the exclusion criteria encompassed studies that focused on reports, opinion pieces, reviews without original data, and studies that do not provide comparative data on both positions.

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The electronic search was completed with the search terms upright position in the second stage, sitting position, supine position, maternal delivery outcomes, fetal delivery outcomes, maternal and fetal childbirth, Sub-Saharan Africa.

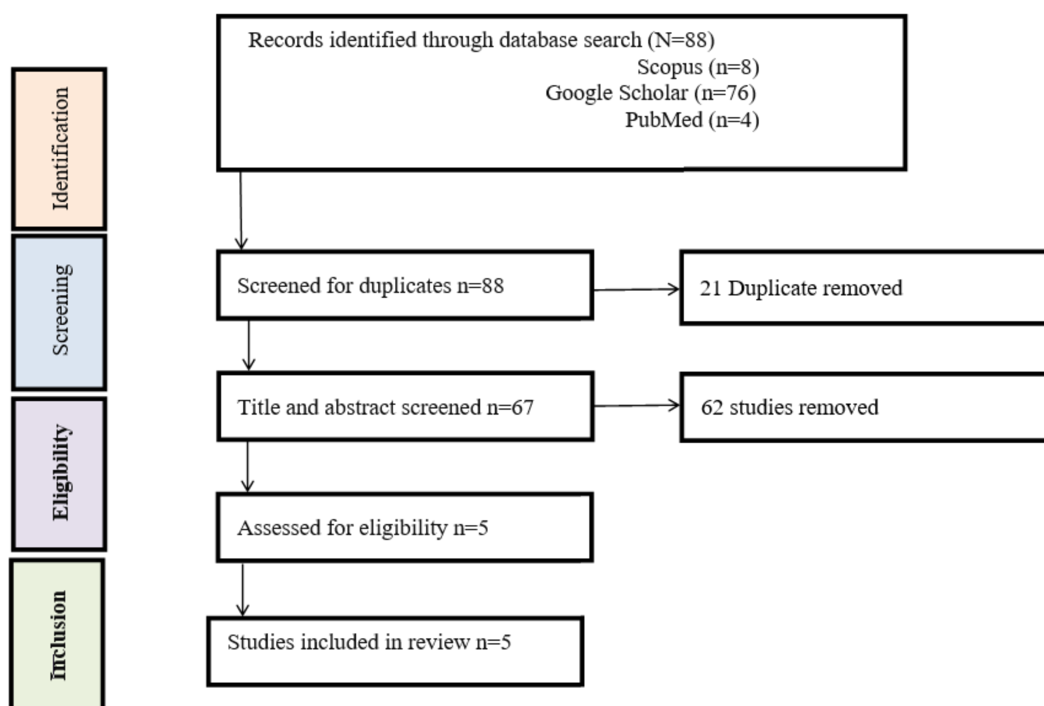

Figure 1: A PRISMA flow diagram of article selection process

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The quality of the studies was assessed using for the randomized controlled trial (RCT) and the ROBINS-I tool for the non-randomized studies. This was done to ensure a robust quality assessment, which focused on study design, handling of confounders and outcome measurement. These assessments helped categorize the risk of bias as low, moderate, or high. Conducted in diverse sub-Saharan

African countries (Nigeria, Ethiopia, South Africa, Benin, and Tanzania), these studies reflect a range of settings, but regional variability may affect generalizability.
Tables 1&2 summarized the extracted data from the five articles, comparing upright and supine birthing positions for maternal and neonatal outcomes

Table 2: Maternal Outcome

Study & Year	**Study Design**	**Setting & Population**	**Birthing Positions Compared**	**Measured Parameters**	**Upright Position Outcomes**	**Supine Position Outcomes**	Classification
Ethiopia Study (2022)	Quasi-Experimental	1048 women, Amhara, Ethiopia	Upright (FSP) vs. Supine (SP)	Perineal tear	11.9%	20.9%	Low Risk
				Duration of second stage	56 minutes	82 minutes	
				Instrumental delivery	6.88%	10.81%	
				C-section rate	6.3%	9.7%	
Benin Study (2011)	Prospective	490 women, Cotonou, Benin	Upright vs. Supine	Duration of active labor	Shorter by 20 minutes ($P < 0.01$)	Longer	Low Risk
				Assisted deliveries	0.4% ($P < 0.01$)	4.3%	
				Episiotomy rate	3.5% ($P < 0.01$)	8%	
				Maternal satisfaction	87% satisfied ($P < 0.01$)	61.2% satisfied ($P < 0.01$)	
South Africa Study (2018)	Randomized Controlled Trial	1158 women, South Africa	Upright vs. Supine	Second stage labor duration	24.6 minutes	25.0 minutes	Low Risk
				Operative birth rate	3.9%	4.4%	
				Perineal trauma	6.5%	5.5%	
				Episiotomy rate	21.1%	22.5%	
Sokoto Nigeria Study (2023)	Case-Control	100 women, Maternity ward	Upright vs. Supine	Cesarean section rate	Lower	Higher	Moderate Risk
				Maternal satisfaction	Higher	Lower	
Tanzania Study (2022)	Quasi-Experimental	150 women, 2 hospitals, Tanzania	Upright vs. Supine	Labor duration (1st stage)	93% faster	24.68%	moderate Risk
				Labor duration (2nd stage)	96% faster	44% faster	

Table 3: Neonatal Outcome

Study & Year	**Study Design**	**Setting & Population**	**Birthing Positions Compared**	**Measured Parameters**	**Upright Position Outcomes**	**Supine Position Outcomes**	Classification
Ethiopia Study (2022)	Quasi-Experimental	1048 women, Amhara, Ethiopia	Upright (FSP) vs. Supine (SP)	Low APGAR (<7)	9%	14.7%	Low Risk
				NICU admission	6.1%	13%	
Benin Study (2011)	Prospective	490 women, Cotonou, Benin	Upright vs. Supine	Fetal heart rate anomalies	2.9% (P < 0.01)	8.9%	Low risk
				Meconium-stained liquor	0.4% (P < 0.01)	1.4%	
South Africa Study (2018)	Randomized Controlled Trial	1158 women, South Africa	Upright vs. Supine	APGAR score <7 at 5 minutes	1.1%	1.3%	Low risk
				NICU admission > 24 hours	1.3%	2.1%	
				Neonatal trauma	0%	0.5%	
Sokoto Nigeria Study (2023)	Case-Control	100 women, Maternity ward	Upright vs. Supine	Oxygen requirement	Less frequent	More frequent	Moderate Risk
Tanzania Study (2022)	Quasi-Experimental	150 women, 2 hospitals, Tanzania	Upright vs. Supine	APGAR Score >7 (1 min)	98.6%	88.3%	Moderate Risk

Finding and Result

This review presents the results in order of a description of the characteristics of included studies, followed by a critical appraisal process, and finally the presentation of extracting themes. A broad range of studies focusing on different delivery positions was identified as a part of the literature search. Each study included was reviewed individually by comparing each paper's aims and/or objectives, study design, data collection and analysis methods, main findings, and implications for practice. The study design of the included studies can be divided into four quantitative types which are one RCT, one Prospective cohort, one Case-Control and two Quasi-Experimental studies. The five studies were conducted in the following sub- Saharan countries: Nigeria, Ethiopia, South-Africa, Benin and Tanzanian.

Table 4: Themes and sub themes

Themes	Name	Name of the Author	Publish Year
3.1	Maternal birthing position and second stage duration	Solomom et al. Mtatina et al Hofmeyr et al Mtatina et al Denakpo et al	2022 2018 2022 2022 2016
3.2	Maternal birthing position and the occurrence of perineal injury /performing episiotomy	Hofmeyr et al Mtatina et al Muhammed et al Denakpo et al	2018 2022 2023 2016
3.3	Maternal birthing position and mode of delivery	Solomom et al. Denakpo et al Hofmeyr et al	2022 2016 2018
3.4	Maternal birthing position and labor Pain	Hofmeyr et al Mtatina et al Muhammed et al	2018 2022 2023
3.5	Maternal Birthing position and fetal /neonatal outcomes	Hofmeyr et al Mtatina et al Muhammed et al Denakpo et al	2018 2022 2023 2016

Five key themes emerged from the literature regarding the connection between maternal upright and supine positions during the second stage of labor and their impact on maternal and fetal outcomes. These themes include: perineal tears or the need for an episiotomy, the length of the second stage of labor, the mode of delivery, fetal outcomes, and maternal labor pain.

Theme 1: **Maternal Birthing Position in Relationship with the duration of Second Stage**

The second stage of labor starts when the cervix is fully dilated (10 cm) and concludes with the delivery of the baby. This stage is a very crucial stage which can last up to three hours for the first time mothers and less than two hours in multiparous mothers. The duration varies depending on a number of factors such as the size of the fetus, the position of the fetus, the size of the woman's pelvis, the nature of contraction, the health condition of the woman, and more importantly, the position being adopted during second stage. Certain maternal positions may help reduce the duration of this stage.

Across studies, the upright position consistently resulted in a shorter labor duration compared to the supine position, particularly in the second stage of labor. A quasi-experimental, non-equivalent control post-test-only study, with 1048 participants carried out in Ethiopia study, revealed that labour duration in the upright group was shortened compared to the supine group. The mean duration of the second stage of labour was shorter (56 min (sd ± 180)) among mothers in the intervention group than in the control group (82 min (±24)) by a mean difference of 26 min (p-value < 000, CI: 23–28 min). Similarly, a study

carried out on maternal birth positions in cotonou in Benin also showed a 20-minute reduction in active labour for women in the upright position.

Furthermore, a study carried out on maternal birth positions found that adopting upright or flexible sacrum positions during the second stage of labor significantly reduced its duration compared to the supine position. In a two districts in Tanzania, a quasi-experimental study carried out with 150 participants, 93% of women in the upright position had significantly faster first-stage labor compared to 24.68% in the supine group. A prolonged second stage can raise the likelihood of maternal and fetal complications, including postpartum hemorrhage, the need for operative delivery, severe perineal injury, low Apgar scores, and asphyxia.

Theme 2: Maternal Birthing Position and the Occurrence of Perineal Injury / Episiotomy

Sometime women birthing spontaneously sustain various degrees of perineal tears. Evidence-based birthing position during the second stage of labour can help to minimize the incidence of spontaneous perineal tears or episiotomy rate. Perineal tears can aggravate after pain and lead to discomfort during postnatal period. According to this review, perineal tears were generally lower in the upright position. In a quasi-experimental, non-equivalent control post-test-only study, with 1048 participants carried out in Ethiopia study, 11.9% of women in the upright position experienced perineal tears compared to 20.9% in the supine group. Similar trends were observed in the Tanzania, a quasi-experimental study with 150 participants carried out in two districts. It was observed that there were lower tear rates for women that adopted upright position compared to supine position (11% vs. 16%). Episiotomy rates were also lower for upright positions.

Furthermore, in a prospective study carried out in Cotonou Benin with 980 participants, there were fewer episiotomies in upright position (3.5% upright vs. 8% supine). Likewise in a three-arm open-label RCT carried out in South Africa, episiotomy rate was lower in upright position compared to supine (21.1% upright vs. 22.5% supine). The findings revealed that the supine position was associated with a higher risk of severe perineal tears, whereas the upright position had a protective effect in women.

3.3 Theme3: Maternal birthing position and mode of delivery

The upright position showed a lower incidence of instrumental deliveries and C-sections across several studies. The position a mother assumes during the second stage of labor has a tremendous effect on the mode of delivery. The upright position, offers several physiological advantages that aid in the progression of labour and increase the likelihood of a spontaneous vaginal delivery. Firstly, gravity plays a crucial role, as the mother's pushing aligns with its force. Secondly, uterine contractions tend to be more regular and stronger in this position. Lastly, the sitting position increases the pelvic diameter, facilitating labor progression.

In contrast, the lithotomy position places the mother's weight on her back, requiring her to push against gravity, which may hinder delivery. In Ethiopia, a

quasi-experimental, non-equivalent control post-test-only study, with 1048 participants carried out showed that instrumental delivery rates were lower in the upright group (6.88% vs. 10.81%), and C-section rates were similarly reduced (6.3% vs. 9.7%). Similarly, a prospective study carried out in Cotonou in Benin with 980 participants Benin study showed significantly fewer assisted deliveries in the upright position (0.4% vs. 4.3%).

Theme 4: Maternal birthing position and labor Pain

The relationship between maternal birthing position and labor pain is a key aspect of maternal care, as pain relief during labor is crucial for the mother's well-being. By changing the maternal position, the spatial shape of the pelvis is altered, which helps align the fetus more optimally with the birth canal. This improved alignment reduces mechanical obstruction, allowing for smoother fetal descent. Positions like sitting, squatting, or kneeling not only use gravity to the mother’s advantage but also help open the pelvis, potentially reducing pressure and discomfort. Moreover, certain positions can relieve strain on specific nerves and muscles, which may help lower the perception of pain and contribute to a more comfortable labor experience.

During the second stage of labor, pain is transmitted through the stimulation of the L1–L10 and S2–S4 nerves. Various methods are available to manage labor pain, which can be broadly categorized into pharmacological and non-pharmacological approaches. One of the effective non-pharmacological methods is adjusting the mother's birthing position, which plays a significant role in influencing pelvic dimensions.

This review recorded that maternal satisfaction was consistently higher in the upright position. In a prospective study carried out in Cotonou Benin with 980 participants, 87% of women in the upright position were satisfied, compared to 61.2% in the supine group. Similar trends were observed in the Tanzania, in a quasi-experimental study with 150 participants carried out in two districts, it was also noted that maternal satisfaction was higher in the upright group.

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with 980 participants Benin study showed significantly fewer assisted deliveries in the upright position (0.4% vs. 4.3%).

Theme 5: Maternal Birthing position and fetal /neonatal outcomes

Higher APGAR scores were associated with the upright position according the findings of this review. In a quasi-experimental, non-equivalent control post-test-only study, with 1048 participants carried out in Ethiopia study, only 9% of babies in the upright group had a low APGAR score (<7), compared to 14.7% in the supine group. Similarly, it was observed in a quasi-experimental study with 150 participants carried out in two districts in Tanzania, that 98.6% of babies from upright deliveries had APGAR scores above 7 at one minute, compared to 88.3% in the supine group**.**

This review reported fewer NICU admissions for babies delivered in the upright position.In Ethiopia, 6.1% of newborns from upright births required NICU admission compared to 13% in the supine group. Similar trends were observed in the South Africa study, where NICU admissions were also lower in the upright group (1.3% vs. 2.1%).

Neonatal trauma was generally lower or nonexistent in the upright position. Likewise in a three-arm open-label RCT carried out in South Africa, 0% of neonates in the upright group experienced trauma, compared to 0.5% in the supine group. Neonatal death rates were slightly lower in the upright group (0.3%) compared to supine (0.5%).

However, the upright position resulted in fewer fetal heart rate anomalies. In a prospective study carried out in Cotonou Benin with 980 participants, 2.9% of babies in the upright position had heart rate anomalies, compared to 8.9% in the supine group. This needs further investigation to ascertain the factors contributing to these anomalies in upright position.

Conclusion

The findings have intended to highlight the background of this review paper, by comparing two maternal delivery positions and maternal and fetal outcomes. Five studies have met the review inclusion criteria and their outcomes were divided into five themes to answer the PICOT question. The synthesis of research comparing upright and supine birth positions highlights significant differences in maternal outcomes, particularly labor duration. Across multiple studies, the upright position consistently demonstrated shorter labor times, especially in the second stage, as shown in the studies, which reported 26-minute and 20-minute reductions, respectively. This reduction can be attributed to the influence of gravity, which aids in the descent of the baby and enhances the efficiency of contractions, thereby speeding up the birthing process. Additionally, the upright position's lower rates of perineal trauma and episiotomies, as observed too which suggest that this position may allow better pelvic alignment, reducing stress on the perineum during delivery.

In terms of maternal satisfaction, women consistently reported greater contentment with the upright position, despite occasional discomfort. The combination of a faster labor, lower rates of instrumental interventions, and higher maternal satisfaction reflects the holistic benefits of the upright position. Women in these studies appeared to value the enhanced sense of control and autonomy during the birthing process, even if it came with some increased physical discomfort. Overall, the findings strongly support the preference for upright positions, emphasizing their role in improving maternal experiences and outcomes during labor. Upright positions, therefore, should be considered a beneficial alternative to supine positions in labor and delivery, particularly in settings where promoting natural labor progression and minimizing medical intervention are priorities.

Limitations

However, the major limitation of this literature review is the availability of the studies themselves carried out in Sub-Saharan Africa. Limited studies are specifying upright and supine position during second stage. The number of studies that were exclusive to the previously mentioned delivery positions was few; there were only five studies articles. However, the studies included in this review are from a few countries in Sub-Saharan Africa. There is need for more studies to be carried out which have differences in the health care delivery system that may affect the delivery outcomes.

Key Recommendations

Based on the findings of this review, several recommendations can be made to guide future practice and research regarding maternal delivery positions and outcomes, particularly in Sub-Saharan Africa:

- Upright positions should be promoted in clinical settings given the demonstrated benefits.
- Midwives, obstetricians, and other healthcare professionals should be trained on the advantages of evidence-based birthing positions.
- Mothers should be informed about the advantages of upright birthing positions and allowed to make informed choice
- Scholars should be motivated carry out more extensive research in Sub-Saharan Africa to validate the findings of this review.
- Policy guidelines on delivery practices should be updated to incorporate the findings supporting upright positions.
- Institutions should ensure that birthing environments are equipped to accommodate different birthing positions.

By implementing these recommendations, there will be a tremendous transformation in Sub-Saharan Africa maternal and neonatal outcomes. It will lead to optimized Labor experiences for mothers, improve delivery outcomes, and contribute to more research-informed maternal care in Sub-Saharan Africa and beyond.

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