

Assessing The Role Of Skilled Birth Attendants In Improving Perinatal Survival Rates Globally

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Abstract

Background: SBAs are needed to have safe childbirth and minimize maternal and neonatal mortality. When they are present during delivery, they are found to be instrumental in timely detection and control of complications, a fact that is crucially important in increasing perinatal rates of survival, particularly in low-resource conditions. **Objective:** The purpose of this study is to determine the effect of SBA-assisted deliveries on the perinatal survival rates and compare the results of the deliveries with skilled attendance and Without Deliveries. **Methodology:** The cross-sectional study was comparative and used a sample of 800 pregnant women (2 x 420 healthy) including SBA (n=420) and non-SBA (n=380) samples. Hospital records, community surveys and birth registers were used to obtain data. The outcome measures were perinatal survival, neonatal complications and maternal complications. Chi-square tests, logistic regression using $p < 0.05$ as the significant level, were considered statistical tests. **Findings:** The perinatal survival rate was also higher in SBA group (96%) than non-SBA group (85%)- $p < 0.001$. All neonatal complications (birth asphyxia 6 vs 18 and infections 5 vs 14) were more favorable in births assisted by SBA. There was also a decrease in maternal complications. **Conclusion:** The supply of qualified maternal care must be extended in all parts of the world; this is evident by the fact that SBA-supported deliveries have a great contribution to perinatal survival and complication minimization.

Keywords: Skilled birth attendants, perinatal survival, maternal health, neonatal outcomes, childbirth, healthcare access.

1. Introduction

Perinatal mortality is one of the major health challenges in the world especially in the low resource settings where facilities to the skilled healthcare during child birth are low. Global estimates indicate that a significant percentage of maternal and neonatal deaths happen during labor and delivery as well as the immediate after child birth, showing a very high level of care and quality during birth [1][2]. The key role in providing safe delivery practices, early identification of complications and prompt intervention corresponds on trained personnel (midwives, nurses and physicians) known as skilled birth attendants (SBAs) [3]. The availability of SBAs during childbirth is also a widely known strategy that has been reported to be one of the best strategies that have resulted in a reduction on maternal and neonatal mortality. There are studies that suggest that SBA-assisted births can greatly reduce occurrences of birth asphyxia, postpartum hemorrhage, and infant infections [4][5]. SBAs get trained to deliver critically needed obstetric and newborn care by being able to monitor labor with the help of standardized equipment, provide life-saving interventions, and refer them to other medical professionals in case of comorbidities [6]. Although the world is trying to enhance mothers healthcare services, access disparity relating to skilled attendance of birth still exists in different regions and groups. In most low middle income countries (LMICs), lack or inaccessibility to skilled care is caused due to the barriers of poor healthcare infrastructure, lack of trained staff, cultural beliefs and financial constraints [7][8]. This especially affects the rural and marginalized populations, who as a rule lack medical supervision and use unskilled birth attendants or home birth [9]. Recent efforts around the world have stressed the widespread extension of SBA cover as one of the elements of the attainment of Sustainable Development Goals (SDGs) pertaining maternal and child health [10]. Research has demonstrated that the expansion of SBA coverage is connected with significant changes that reduce the levels of perinatal mortality rates and also enhance the status of maternal health have a positive impact on the overall outcomes of maternal health [11]. Moreover, systematic healthcare methodologies that incorporate SBA services with antenatal services, emergency obstetric services, and postnatal services have proved to be more effective in raising survival rates [12]. But it is not just the presence of SBAs that affects their efficacy but also the quality of their care. Training, competency, and healthcare system support differences can influence the results greatly [13]. Also, even though many studies have examined SBA coverage, fewer studies have done in-depth comparative analyses of perinatal outcomes of two different populations SBA-assisted versus non-SBA deliveries [14].

1.1 Research Gap

The significance of skilled birth attendance is well established, but still, there is a shortage of standardized, comparative evidence assessing the direct influence of skilled birth attendance on perinatal survival outcomes in various care environments. Minimal attention to quality of care and contextual factors further increase limiting the extrapolation of results.

1.2 Objectives

1. To determine the effect of skilled birth attendants on perinatal survival rates.
2. To make comparisons between SBA-assisted and non-SBA deliveries.
3. To determine main factors affecting perinatal survival.

2 Methods

2.1 Study Design

A cross-sectional study was performed to compare how skilled birth attendants (SBAs) were used to better the perinatal rates of survival. The respondents were divided into two groups; SBA group which included the deliveries that had the involvement of trained medical workers, and the non-SBA group made up of deliveries that did not involve the services of skilled workers. This architecture was able to directly compare outcomes in the care settings in real world conditions [16].

2.2 Study Population

A total of 800 pregnant women were used in the study where 420 were sampled in the SBA group and 380 in the non-SBA group. The participants were sampled in healthcare centers and the community points presented by table 1. Early neonatal outcomes were captured by following up with neonates up to seven days after delivery.

Table 1: Distribution of Study Population

Group	Participants (n)	Percentage (%)
SBA	420	52.5
Non-SBA	380	47.5
Total	800	100

2.3 Variables Assessed

The main variables were the availability of a skilled birth attendant, delivery mode (delivery normal or cesarean), maternal complications (e.g., haemorrhage, infection) and the newborn outcomes (e.g., birth asphyxia, low birth weight). They were picked because these variables are important in perinatal survival and maternal health globally [17].

2.4 Data Collection

Various data sources were used to improve the validity and reliability of data collection. Clinical data was collected through hospital and clinic records, and community surveys were conducted to capture delivery practices in community settings and outcomes were verified by birth registers.



Figure 1: Data Collection Framework

The figure 1 shows an information gathering framework combining data of hospital and clinic records, community surveys and birth registers. All these various sources are amalgamated into one integrated data, this has given thorough, consistent, and balanced data to analyse making the research results and conclusions more valid and accurate.

2.5 Outcome Measures

The primary outcomes were perinatal mortality rate, neonatal complications, maternal complications and the overall birth outcomes as indicated in table 2. Perinatal mortality was those cases when the baby did not live or died during the first seven days of life.

Table 2: Outcome Measures	
Outcome Category	Indicators
Perinatal Outcomes	Mortality (≤7 days)
Neonatal Outcomes	Asphyxia, infections
Maternal Outcomes	Hemorrhage, infection
Delivery Outcomes	Mode of delivery

2.6 Statistical Analysis

Statistical software were used to analyze data. The chi-square tests were used to compare the categorical variables in SBA and non-SBA groups. Relative risk (RR) was estimated by determining how likely it is that unfavorable results are in relation to absence of skilled attendance. The predictors used to determine perinatal mortality after taking into account confounding variables were the logistic regression models. The reason is that it was established that statistical significance was under $p < 0.05$ [18].

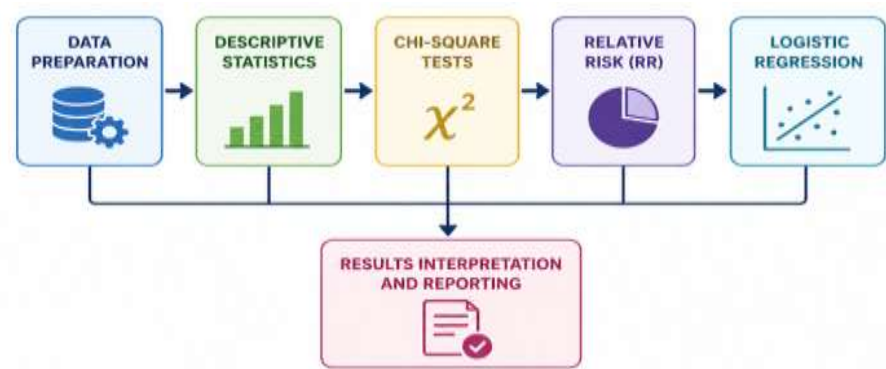


Figure 2: Analytical Approach

The figure 2 describes a statistical analysis process that starts with preparing and descriptive statistics. It goes on to the chi-square tests, the calculation of the relative risks and the logistic regression. All these actions would lead to the interpretation of relationships and conclusions, which ends in the interpretation of results and reporting of them, which would be clear conclusions and research based results from the research study.

3. Results & Discussion

In this section, the comparison of perinatal outcomes of deliveries facilitated by skilled birth attendants (SBAs) and deliveries lacking such assistance are presented. The-assisted SBA deliveries showed a better perinatal survival and lesser complications. According to statistical results, there is a very close connection between skilled birth attendance and favorable health results. These findings highlight the paramount importance of qualified healthcare professionals in promoting safe delivery and neonatal and maternal survival rates around the world.

3.1 Participant Characteristics

In the study, 800 participants were involved of which 420 (52.5) of them were in the skilled birth attendant (SBA) group and 380 (47.5) participants were in the non-SBA group as indicated in table 3. The distribution reveals that there is a slightly greater proportion of deliveries of skilled professionals which makes it possible to compare and contrast the two groups.

Table.3. Distribution of Participants

Group	Participants (n)	Percentage (%)
SBA	420	52.5
Non-SBA	380	47.5
Total	800	100

3.2 Perinatal Survival Rates

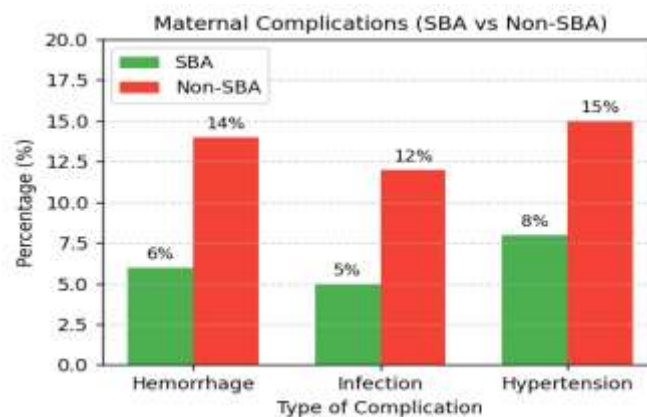
The perinatal survival rates were also statistically significantly higher in SBA-assisted delivery (96%) than in non-SBA delivery (85%), with a statistically significant difference ($p < 0.001$) revealed by table 4. In contrast, perinatal mortality was significantly reduced in the SBA group (4%) in comparison to the non-SBA group (15%), and it is also an indicator of the success of skilled care.

Table.4. Perinatal Survival Comparison

Outcome	SBA (%)	Non-SBA (%)	p-value
Survival Rate	96%	85%	<0.001
Perinatal Mortality	4%	15%	

3.3 Maternal Complications

The rate of maternal complications was much less in the SBA group, which implied more appropriate surveillance and early intervention in the labor process and delivery. Experienced attendance plays a role in early identification and control of the risks and minimizing adverse maternal outcomes.

**Figure.3. Maternal Complications (SBA vs Non-SBA)**

The number 3 is a comparison of the maternal complications among the skilled birth attendants (SBA) and non-SBA groups. The SBA has always had lesser complications: hemorrhage (6% vs 14%), infection (5% vs 12%), and hypertension (8% vs 15%). This implies that competent treatment greatly minimizes risks to maternal health and enhances outcomes.

3.4 Neonatal Outcomes

The incidence of neonatal complications was much less in SBA. The cases of birth asphyxia, low birth weight and infections were higher in non-SBA births which implies that neonatal care is more poorly conducted when there is no presence of skilled professionals.

Table.5. Neonatal Health Indicators

Outcome	SBA (%)	Non-SBA (%)	p-value
Birth asphyxia	6%	18%	0.01
Low birth weight	10%	20%	0.02
Infections	5%	14%	0.01

Table 5 shows the neonatal health outcomes of SBA and non-SBA groups. Cases of birth asphyxia, low birth weight and infections are also lower in the SBA cases. The p-values (0.01–0.02) show significant improvements in neonatal outcomes and fewer health complications are statistically significant, therefore revealing that skilled birth attendance is an effective intervention to boost neonatal outcomes.

3.5 Delivery Practices

There was also significant difference in the way deliveries were carried out by different groups and SBA-assisted deliveries showed better compliance to clinical protocols and better outcomes. Competent care provides suitability in interventions, which leads to an increase in survival.



Figure.4. Skilled vs Non-Skilled Delivery Outcomes

The 4 th figure will compare the results of delivery by skilled birth attendants (SBA) and non-SBA. The survival of SBA is greater (96% vs 85%), the complications are less, including birth asphyxia (6% vs 18%), low birth weight (10% vs 20%), and infections (5% vs 14%), as a reflection of skilled care.

4. Discussion

The evidence provided in this paper shows that skilled birth attendants (SBAs) are the key to the perinatal survival rates and the decrease in the maternal and neonatal morbidity. Better outcomes, such as increased survival rates and reduced complication rates were observed in deliveries attended by SBAs. This may be attributed to the fact that trained professionals are able to exercise control over labor, notice any early warning signals as well as offering medical care promptly.

4.1 Key Insights

A number of significant learnings are pointed out in the study. SBAs can greatly decrease perinatal mortality as they guarantee safe birth procedures and prompt newborn treatment. Timely diagnosis and intervention during labor can prevent complications that may occur during birth e.g. birth asphyxia and maternal bleeding. Moreover, competent care enhances the outcome of neonatal by supporting adequacy in resuscitation, prevention of infection, and postnatal care.

4.2 Comparison with Previous Studies

The results align with international evidence that highlights the need to have skilled birth attendance to enhance the maternal and neonatal health outcomes. Other studies in the past have also indicated that expansion of the SBA coverage is linked to significant mortality and morbidity decrease especially in the low resource environment.

4.3 Limitations

In spite of the strong points, the research has a number of weaknesses. The cross-sectional nature does not allow forming the causal correlations between the availability of SBA and better outcomes. Also, there can be reporting bias due to the use of recorded and self-reported information. Limited follow-up period, which is only restricted to early neonatal outcomes, fails to include the long term maternal and child health outcomes.

5. Conclusion

In this study, the conclusion is that skilled birth attendants (SBAs) can significantly enhance the survival rate of the perinatal unit

and the number of maternal and neonatal complications. The proportion of adverse outcomes and survival were significantly lower than with SBA-assisted deliveries, which confirmed the importance of skilled care in giving birth. Trained professionals will result in safer practices in complication detection and management, which ultimately guarantees early detection of complications. Access to expanding access to SBAs, especially in low-resource and underserved environments, is necessary to enhance maternal and neonatal health outcomes in the world. This can be enhanced with the improvement of healthcare mechanisms, training, and delivery of institutions deliveries. In general, improving the coverage of SBA is an important measure to prevent preventable deaths and to ensure global perinatal health.

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