Volume: 7, Issue: 4
Page: 64-75
2026

ISSN: 2709-9911 (Online), ISSN: 2710-236X (Print)
International Journal of Medicine, Nursing & Health Sciences (IJMNHS) ®
(IJMNHS.COM)

Integrating Birth Asphyxia Prevention into Routine Antenatal Education: A Narrative Review of an Achievable but Herculean Task

Author(s), OLUWASEYI, Omobola, DADA, Maria Romoke, ILESANMI, Mutiatu Oluwaseun, BALOGUN, Modupe Victoria, JAMIU, Sulaiman Tosin,

Abstract:

Birth asphyxia, the failure of a newborn to initiate and sustain spontaneous breathing at birth, remains one of the leading and most preventable causes of neonatal death worldwide. It contributes to roughly a quarter of the 2.3 million neonatal deaths recorded annually, and its burden is concentrated in sub-Saharan Africa, where Nigeria carries one of the heaviest national tolls. Antenatal care offers a uniquely repeated and trusted point of contact through which expectant mothers could be equipped to recognise risk, prepare for a skilled birth, and act quickly when labour becomes abnormal; yet routine antenatal education in most low-resource settings concentrates on nutrition, hygiene, and general danger signs while saying little about intrapartum and immediate newborn emergencies such as asphyxia. This narrative review synthesises current global, regional, and Nigerian evidence on the burden of birth asphyxia, the protective value of antenatal education and nurse or midwife training, and the practical content that asphyxia-focused education should contain. It then outlines a pragmatic, nurse-led pathway for embedding a short, repeatable asphyxia-prevention module within existing antenatal clinics, examines the institutional, system, and maternal barriers that make this integration a genuinely herculean task, and offers recommendations for practice and policy. The review argues that, although the obstacles are substantial, a structured and adequately supported nurse-led approach is both feasible and necessary if Nigeria and comparable settings are to advance toward Sustainable Development Goal 3.2 and the Every Newborn Action Plan target of fewer than 12 neonatal deaths per 1,000 live births by 2030.

IJMNHS
Accepted 25 August 2026
Published 30 August 2026
DOI: 10.5281/zenodo.23118359

Keywords: birth asphyxia, antenatal education, antenatal care, neonatal mortality, nursing, Nigeria,

About Author

Author(s): OLUWASEYI, Omobola
Department of Maternal Neonatal and Child Health Nursing,
Faculty of Nursing Sciences
University of Medical Sciences, Ondo, Ondo State, Nigeria

DADA, Maria Romoke
Department of Maternal Neonatal and Child Health Nursing,
Faculty of Nursing Sciences
University of Medical Sciences, Ondo, Ondo State, Nigeria

ILESANMI, Mutiatu Oluwaseun
Department of Maternal Neonatal and Child Health Nursing,
Faculty of Nursing Sciences
University of Medical Sciences, Ondo, Ondo State, Nigeria

BALOGUN, Modupe Victoria
Department of Maternal Neonatal and Child Health Nursing,
Faculty of Nursing Sciences
University of Medical Sciences, Ondo, Ondo State, Nigeria

JAMIU, Sulaiman Tosin
Department of Maternal Neonatal and Child Health Nursing,
Faculty of Nursing Sciences
University of Medical Sciences, Ondo, Ondo State, Nigeria

Introduction

Perinatal or birth asphyxia is the inability of a newborn to start and maintain sufficient breathing during birth, which results in low blood oxygen levels, high levels of carbon dioxide, low blood pH, and, if prolonged, damage to multiple organs and the developing brain (Lee et al., 2013). It is caused by poor gas exchange that occurs prior to, during or following delivery and is often associated with prolonged labour, obstructed labour, antepartum haemorrhage, hypertensive disorders of pregnancy, and placental insufficiency (Ikechebelu et al., 2024). While it is preventable and treatable, it is one of the top three causes of death in the first month of life, along with prematurity and neonatal infection (World Health Organization [WHO], 2024).

The first 28 days of life (the neonatal period) is the most critical time in the life course for child survival. In 2024, it is estimated that almost half of all deaths among children under five years of age were attributed to births, representing an estimated 2.3 million newborn deaths worldwide; the global neonatal mortality rate dropped marginally from 36.6 deaths per 1,000 live births in 1990 to 17.2 in 2024 (United Nations Children's Fund [UNICEF], 2025). Intrapartum-related events (asphyxia at birth is the largest contributor) account for approximately 25% of these deaths and, in addition to mortality, also contribute to many survivors having lifelong neurodevelopmental impairments such as cerebral palsy, epilepsy and cognitive delay (Lee et al., 2013; Lawn et al., 2009).

Although there has been international commitment to achieve a neonatal mortality rate of no more than 12 per 1,000 live births in all countries by 2030 (the Every Newborn Action Plan) and the Sustainable Development Goals, there has been limited progress in reducing intrapartum-related deaths, especially in sub-Saharan Africa (Lawn et al., 2014). Birth asphyxia in Nigeria is estimated to cause 10-25% of neonatal mortality, with National Population Commission and ICF (2019) reporting that the national neonatal mortality rate (NMR) has remained consistently high.One-fifth to one-quarter of neonatal mortality in Nigeria is estimated to be caused by birth asphyxia; similarly, the national neonatal mortality rate (NMR) is high and has not improved over time (National Population Commission [NPC] & ICF, 2019; Ikechebelu et al., 2024). This on-going burden highlights the need for antenatal education to provide expectant mothers with knowledge and birth-preparedness behaviours that will help prevent asphyxia. Nurses and midwives are key to this role because they are the first and most regular health care providers to the pregnant woman and are integral to health education and promotion, referrals and delivering skilled birth attendance.

However, the integration of birth-asphyxia prevention into maternal health services remains a challenging task, as one regional study put it, a “herculean challenge” that would require coordinated action on the curricula, staffing capacity, infrastructure, community engagement, and monitoring (Usman et al. 2019). This narrative review outlines the definition, importance of antenatal care, the burden of birth asphyxia at global, regional and national levels, the evidence supporting association of antenatal education and provider training with improved outcomes, content of antenatal education and a step-by-step pathway for implementation by nurses in Nigeria and similar settings, as well as barriers and policy responses.

Approach to the Review

This is a narrative review which aims to collate and give meaning to the current literature on the prevention of birth-asphyxia via antenatal education, with an aim of not quantitatively pooling up effect sizes. A combination of the terms birth asphyxia, perinatal asphyxia,

intrapartum-related neonatal death, antenatal care, antenatal education, birth preparedness, neonatal resuscitation, and Nigeria were used to search PubMed, Scopus, and Google Scholar, with the articles and reports published mainly between 2009 and 2025 being included. Systematic reviews, large multi-country or national studies, authoritative agency statistics and studies from sub-Saharan Africa were given priority and supplemented by seminal global estimates. Sources were chosen for their relevance, methodological credibility and timeliness and were synthesized thematically under the headings of burden, prevention, content, implementation, and barriers.

The Burden of Birth Asphyxia

Global perspective

Asphyxia is one of the three leading causes of neonatal deaths, alongside neonatal sepsis and prematurity, and is responsible for nearly eight out of every ten deaths in the first month of life (WHO, 2024). Intrapartum events account for around 25% of all neonatal deaths worldwide and most of these take place in low and middle-income countries where access to skilled birth attendance and good intrapartum monitoring is lowest (Lee et al., 2013; Lawn et al., 2009). The toll is also geographically concentrated, with approximately three-quarters of neonatal deaths occurring in Asia, and an estimated one million newborn babies die in the first 24 hours, during which effective resuscitation and immediate care of the newborn are most critical (WHO, 2024).

Fortunately, the risk factors for asphyxia have been identified and many are treatable. Good intrapartum care, well-coordinated by skilled attendants, good antenatal care, intrapartum monitoring and immediate newborn resuscitation can prevent a significant proportion of intrapartum-related deaths, while modelling and programme evaluations have consistently shown that a large proportion of intrapartum-related deaths could be prevented if interventions were delivered at scale and of good quality (Bhutta et al. 2014; Lee et al. 2013). This preventability was recognised and led to Every Newborn Action Plan being launched in 2014, which pledged the goal of reducing the neonatal mortality rate to 12 or fewer per 1,000 live births in all countries by 2030 and the need to increase access to skilled care at birth, early essential newborn care, and strengthened antenatal services (Lawn et al., 2014).

Sub-Saharan Africa

Although neonatal mortality rates are very low in comparison to the number of live births in South Africa, the neonatal mortality rate is estimated at approximately 27 deaths per 1,000 live births, the highest rate in the world, with the majority of neonatal deaths in South Africa occurring in the Sub-Saharan Africa region (UNICEF, 2025; WHO, 2024). In the region, intrapartum-related asphyxia is a major cause of neonatal mortality and a disproportionately high proportion of all asphyxia-related deaths are caused by intrapartum asphyxia (Usman et al., 2019), where weak health systems, lack of skilled birth attendants, delayed access to emergency obstetric care and lack of maternal education play significant roles. Only a small proportion of labour-room attendants have sufficient knowledge of newborn resuscitation, and many health centres are lacking in basic newborn resuscitation (NBR) equipment even in the case of facility birth, which does not ensure that the birth is well managed in the event of asphyxia (Usman et al., 2019).

Not only is the regional slowdown not inevitable, but it is also not a foregone conclusion that it will be ongoing. The Helping Babies Breathe (HBB) programme, a simple, low technology training programme in basic neonatal resuscitation, was found to be associated with a 47%

reduction in early neonatal deaths within 24 hours of birth and a 24% reduction in fresh stillbirths within 12–16 months of implementing the programme, across a range of hospitals in Tanzania – showing that pragmatic and scalable interventions in resource-limited settings can deliver significant gains in neonatal deaths and stillbirths (Msemo et al., 2013). These benefits are possible, however, if a prepared and informed mother is connected to a facility with a staff that is prepared and equipped to respond.

Nigeria

Nigeria has a significant proportion of neonatal deaths in the region and continent and is consistently among the top countries in terms of the absolute number of neonatal deaths. According to Nigeria Demographic and Health Survey (NDHS, 2018), NLM was estimated at 39 per 1000 live births, with only marginal changes over the past decades with a mean rate of 41 per 1000 live births between 1990 and 2013, and slight improvement in recent years (NPC & ICF, 2019; Akinyemi et al., 2015). It is estimated that about one-fifth to one-quarter of the deaths among the Nigerian neonates are linked to birth asphyxia and a large multi-centre study conducted in the six geopolitical zones of Nigeria confirmed that birth asphyxia is a significant cause of neonatal deaths as well as poor immediate neonatal outcomes (Ikechebelu et al., 2024).

There are several context-specific factors that contribute to this burden. Awareness of pregnancy complications and danger signs for the newborn is often low, the proportion of births performed by skilled health professionals, although improving, is still short of universal coverage, and the length of antenatal education and the lack of such education sessions in some cases is constrained due to limited staffing at primary health centres that limits health teaching time (Ikechebelu et al., 2024; Akinyemi et al., 2015). Additional barriers to recognizing danger and seeking skilled assistance include socio-cultural and economic barriers such as the cost of care, geographic distance and norms of home birth. The good news is that there is progress and there is an underused platform: national trends in survey coverage of antenatal services and skilled birth attendance have improved over time suggesting progress and that the platform is underused for delivering asphyxia-relevant education during each antenatal contact (NPC & ICF, 2019).

Antenatal Care as a Platform for Prevention

Antenatal care is the clinical care, prevention and health education received by women throughout their pregnancies with the goal of monitoring the wellbeing of the mother and foetus, prevent or, if necessary, manage any complications, and prepare women and families for safe childbirth and care of the baby (WHO, 2016). It combines assessment of risk, iron, folate and tetanus immunisation, blood pressure and screening for anaemia and infection and structured counselling (Abioye et al., 2024). Antenatal care is not just a clinical marker but also a prevention and education platform, and a linkage platform to the health system – women can be identified early for conditions like hypertension and anaemia, facilitated to attend the services of skilled birth attendants or delivery attendants, educated in breastfeeding and newborn care, and provided with continued contacts to reinforce key messages (WHO, 2016).

In most low-resource settings, routine antenatal education tends to include information about nutrition, common pregnancy and birth risks, birth preparation, hygiene and infection prevention, exclusive breastfeeding and family planning (Gentry et al., 2025). Training for neonatal emergencies, e.g., birth asphyxia, is often not comprehensive, consistent or deep.

The impact of this omission is significant: when mothers and families are not informed of the intrapartum warning signs that signal a compromised newborn, or the importance of prompt skilled care, there is poor awareness and delay in seeking care – at a time when minutes can make all the difference. Thus, there exists a key gap in current practice between the high rate of antenatal attendance and the small amount of asphyxia-related information provided during those visits that is an important challenge to address (Bayih et al., 2020).

The Case for Integrating Birth-Asphyxia Prevention into Routine Antenatal Care

There are several converging arguments for the incorporation of birth-asphyxia prevention into the normal care of mothers who are due to give birth. Firstly, a significant proportion of neonatal death is avoidable, and the cause is related to the birth, meaning that mothers' informed action could be the difference between life and death (WHO, 2024; Lee et al., 2013). Secondly, maternal knowledge about labour complications and danger signs for the newborn is low across many low- and middle-income countries, thus making it a real need and widespread (Bayih et al., 2020). Third, poor access to skilled care at the time of labour is often due to lack of awareness of danger signs, and the provision of targeted education could directly address this. Fourth, antenatal care is unique because it provides repeated and multiple contacts throughout the pregnancy for messages to be introduced, reinforced and rehearsed as opposed to just one message and nothing more. Last, but not least, an informed mother is an empowered advocate who will be more likely to elect a birth facility, will demand timely intrapartum intervention and will ensure that a newborn for whom breathing is not well is cared for immediately. Integration therefore ensures that maternal demand and skilled provider supply meet and the integration that is key to the final integration of asphyxia prevention. Thus, there is an integration of maternal demand and skilled provider supply.

Evidence that Antenatal Education and Provider Training Work

A growing number of trials has supported the proposition that structured antenatal education has a positive impact on outcomes. A recent systematic review and meta-analysis of 17 randomised controlled trials (RCTs) indicated that, although the results were inconsistent, overall antenatal education had positive impacts on labour and birth outcomes, such as increasing the likelihood of vaginal delivery, without adverse effects, and endorsed the WHO recommendation to include holistic antenatal education in standard antenatal care (Hooper et al., 2025). The size of the benefit is dependent on the content and delivery of the programme, but the direction of the benefit and the safety profile will be reassuring for programmes aiming to enhance targeted modules.

African and Nigerian studies suggest more specifically that teaching mothers about neonatal danger signs will result in behaviour change. The proportion of mothers that could not recall any danger sign in newborns decreased significantly from 47% to 1.5% while seeking medical attention within 24 hours of noticing a danger sign increased significantly (Ekwochi et al., 2022) in a community based pre- and post- intervention study in rural Enugu, South-East Nigeria. Complementary work has identified determinants for maternal knowledge of neonatal danger signs and highlighted knowledge is a prerequisite for seeking care timely and early readmission of sick neonates (Bayih et al., 2020). The results lead to a plausible behavioural chain of events from education to earlier recognition and quicker action.

Providers' training is the essential complement to maternal education. Nurse, midwife and other birth attendant training in newborn resuscitation, such as Helping Babies Breathe, has been shown to improve the practice in the delivery room, and has been linked to significant reductions in early neonatal deaths in the context of supportive systems (Msemo et al., 2013). Thus nurse-led antenatal education and facility-level resuscitation capacity are synergistic because mothers who have been educated to recognise problems and to seek skilled care, and staff who are prepared and equipped to provide care, both lead to the reduction of deaths from asphyxia. The evidence on the causal pathways is consistent and strong, because better preparedness for birth leads to more facility delivery and skilled attendance, awareness of danger signs leads to a decreased delay, and early family action improves the chances of getting the newborn to receive immediate care, while randomized evidence that antenatal education alone reduce the incidence of asphyxia is still limited (Hooper et al., 2025; Bhutta et al., 2014).

Core Content of Antenatal Birth-Asphyxia Education

Effective nurse-led antenatal education on birth asphyxia needs to include a few easily memorised, action-oriented and local-language and literacy appropriate messages. The first step is to provide a simple and non-technical explanation to parents about what birth asphyxia is and its importance – that a baby who is not breathing well at birth can become seriously ill or suffer permanent brain damage or even die if not helped promptly (WHO, 2024). Mothers and families should then be educated on the key maternal and intra-partum warning signs that indicate that they need to contact the facility immediately, such as reduced foetal movement, prolonged labour, maternal fever, bleeding during labour, convulsions and breaking of waters containing green or meconium stained fluid (Ikechebelu et al., 2024).

Emphasis should be laid on birth preparedness, and for facility delivery on having a birth companion, saving money, having a facility with skilled birth attendants, and emphasising the importance of prompt transfer when labour turns abnormal saves lives. Mothers also need to know about getting the baby warm by “skin to skin” contact, drying and stimulation, and early breastfeeding, and to value that trained personnel in the facility can undertake resuscitation in the event the baby does not breathe (WHO, 2024). Also crucial are the signs after birth that require immediate intervention, including the baby's inability to breathe or cry, the baby is very weak or floppy, the baby feeds poorly, and the baby convulses (Bayih et al., 2020). Lastly, messages should include active engagement of male partners and family decision makers, who often have control over transport and finances, and information about the referral pathways and where to go and who to contact. The messages should be repeated over repeated antenatal visits and with simple pictorial aids in the local language to enhance retention, which is defined by repetition and visualisation (Ekwochi et al., 2022).

A Nurse-Led Implementation Pathway

This can be done as a facility nursing team through five steps that are linked together – translating into practice. A preparatory phase involves nurse leaders obtaining managerial support and presenting the evidence, proposing a short module of 10 to 15 minutes, gaining approval to include the module in session checklists for antenatal and obtaining the necessary approval from relevant staff to implement the module, including the community health worker liaison (depending on the situation) and the facility manager, and building a small implementation team of two or three members of the antenatal staff, a lead

nurse/midwife and the facility manager. At this point it is important to integrate the intervention into the regular clinic schedule as opposed to developing an alternative.

A capacity building phase is conducted, where a rapid training of trainers workshop is carried out to provide the antenatal nurse with the information, counselling and communication skills as well as a general overview of basic newborn resuscitation to enable him or her to provide accurate information to parents about the content of the facility, and, where possible, to explain the information available from established national or Helping Babies Breathe materials (Msemo et al., 2013). The team tailors some basic job aids, including a one-page birth-preparedness and complication-readiness checklist, and a pictorial danger-sign chart in the local language, then sets aside a specific teaching time of 10 to 15 minutes each day of the antenatal clinic, and a few minutes during clinical checks to review and reinforce the danger sign chart.

A module is implemented consistently, with every antenatal group, using a set of pictorial flip charts that help support the recall of key risk signs in pregnancy and labour, what antenatal groups should prepare for, and immediate newborn-care actions, all in plain language. A take-home checklist is given to each mother which she can share with her partner and family, delivery of the module is recorded in the antenatal register, and the module is followed through with some sessions with partners that involve transportation and emergency funds. The team then continues to maintain quality through a monitoring and feedback stage, whereby the number of women attending and receiving the module, and women who have finished the BPP are recorded every week; the successes, barriers, and near-miss are discussed each month, and facility delivery rates, resuscitation rates and early neonatal outcomes are tracked monthly for advocacy every quarter.

Lastly, a scaling and sustainability phase embeds the module in the standard operating procedures of the facilities, integrates condensed messages into the messages of community actors (such as CHWs and TBAs who reinforce antenatal content), and leverages the facility data collected during the module to promote its district and policy-level adoption (Akute et al., 2024). The pathway relies on parallel investment in preparation of the facilities as is the case with every other initiative in facility readiness: If the demand for oxygen, a working bag valve mask, a newborn warmer and trained staff are to have a positive impact on the lives saved; the improvement of these facilities must be matched by the better-informed mothers.

Implications for Nursing Practice

When birth-asphyxia prevention becomes part of the routine antenatal education, it changes nursing practice at the clinical, organisational and policy level, since nurses and midwives are key players in the provision of maternal and newborn care and thus the natural keepers of a programme on birth-asphyxia prevention. The nurse's role as an educator is enhanced and institutionalised and counselling is formally included in every ante-pregnancy contact, rather than being an afterthought. Documentation and accountability are enhanced by the regular record keeping of the delivery of modules and planning for the birth and clinical surveillance and early risk recognition are improved with systematic collection and action on intrapartum warning signs.

The strategy also provides for interprofessional coordination with antenatal providers, delivery room providers and community health workers and ensures that nurses have a role in championing quality-improvement efforts and promoting resources and policies that enable prevention. It requires and cultivates capacities in newborn resuscitation

preparedness, involves partners and decision makers within the framework of family-centred care and, most importantly, places nursing practice at the heart of the global action to decrease unnecessary neonatal deaths. In short, intervention raises the role of a nurse, and provides a solid, achievable way for them to carry it out.

Barriers: Why It Remains a Herculean Task

Challenges to implementing birth-asphyxia education into the mainstream of antenatal care are considerable and exist at multiple levels. The system level issues that prevent structured education of many facilities, lack of skilled nurses and midwives, high patient volumes and poor staffing ratios, all squeeze into every antenatal contact. At the institutional level, teaching materials are not standardised, continuity of health education, between visits, is poor and antenatal nurses are not adequately trained in neonatal-resuscitation counselling. Low literacy among some pregnant women, cultural beliefs about childbirth and absence of regular attendance at antenatal services, particularly in the rural areas all hinder the regular delivery and uptake of education at the maternal level.

Wider weaknesses of the perinatal care system in the region, such as poor knowledge of newborn resuscitation among birth attendants and low stock of basic resuscitation equipment, even in facilities, serve to exacerbate these constraints, with the potential for better maternal demand outstripping the system's capacity to meet it (Usman et al., 2019). It is this combination of system, institutional, and maternal barriers, combined with weak infrastructure, that makes integration a herculean task, and makes it essential to go beyond words of encouragement and to think strategically, plan for integration, and invest in it.

Recommendations

Several steps could promote implementation of birth-asphyxia prevention in regular pregnancy services. There should be a brief, repeatable module to prevent asphyxia of 10-15 minutes, concentrating on the signs of risk, preparation for birth and infant care, which should be included as a standard part of all antenatal appointments, consistent with the evidence supporting structured antenatal education (Hooper et al., 2025). It is important that nurses and midwives are trained to teach this content effectively and to maintain the basic new-born resuscitation skills as awareness alone is not sufficient to save the lives of newborns unless combined with the competencies of the provider (Msemo et al., 2013).

Programmes should use pictorial job aids and take-home danger signs and birth plan checklist, as well as recording the delivery of programmes in antenatal registers and tracking the programme delivery using simple facility indicators (Ekwochi et al., 2022). Male partners and family decision makers should be involved in at least one visit to minimize time to access care; and a community health worker and antenatal teams should be coordinated to provide home reinforcement and planning for transport. Most importantly, there should be an increase and improvement of the facilities in readiness (oxygen, bag-valve mask, newborn warmer, trained staff member) to meet the rising and educated demand of the users (Usman et al., 2019). Policy makers should use data from the facilities to incorporate these practices into national standards for ante-natal care, and target resources to the facilities where they are needed the most.

Conclusion

While birth asphyxia is a major and largely preventable cause of neonatal mortality in Nigeria, globally and at the regional level, antenatal care (ANC) is the most consistent platform to engage mothers with the health system and is not fully leveraged in preventing neonatal

deaths. The findings presented here suggest that structured antenatal education increases maternal knowledge and uptake of care-seeking, newborn resuscitation training by health workers decreases early neonatal mortality, and combined structured antenatal education and provider training in newborn resuscitation is most effective. It is therefore logical and feasible to include a brief, nurse-led, asphyxia-specific module in the routine childbirth education, even though institutional, system and maternal barriers make it an actual herculean task. This can be achieved with careful planning, sufficiently trained nurses, standardised materials, parallel investment in setting up facilities and proper policy. In Nigeria and sub-Saharan Africa, strengthening maternal knowledge and ensuring competent skilled care during childbirth is key to improving newborn survival and meeting the goals and targets of Every Newborn Action Plan, which is to end preventable newborn deaths by 2030 as well as the Sustainable Development Goal 3.2

References

Abioye, A.A., Owopetu, C.A., Adamu-Adedipe, F.O., Odesanya, L.O., & Olofin-Samuel, M.A. (2024). Anemia prevention among pregnant women. *International journal of nursing midwife and health related cases.* 10(12), 1-11

Akinyemi, J. O., Bamgboye, E. A., & Ayeni, O. (2015). Trends in neonatal mortality in Nigeria and effects of bio-demographic and maternal characteristics. *BMC Pediatrics, 15*, Article 36. https://doi.org/10.1186/s12887-015-0349-0

Akute, Y.I., Elusoji, C.I., Munge M., Olawale, Y.A., & Olofin-Samuel, M.A.(2024). Collaboration Processes between skilled and traditional birth attendants on maternal and newborn care in Ekiti State. *Journal of Liaoning technical university (natural science edition)*18(4), 189-204 https://www. lgjdxcn.asia/public_article.php?article=284

Bayih, W. A., Birhan, B. M., Yeshambel, A., & Asfaw, M. (2020). Determinants of maternal knowledge of neonatal danger signs among postnatal mothers visiting neonatal intensive care unit, North Central Ethiopia, 2019: A cross-sectional study. *BMC Pregnancy and Childbirth, 20*, Article 218. https://doi.org/10.1186/s12884-020-02896-x

Bhutta, Z. A., Das, J. K., Bahl, R., Lawn, J. E., Salam, R. A., Paul, V. K., Sankar, M. J., Blencowe, H., Rizvi, A., Chou, V. B., & Walker, N. (2014). Can available interventions end preventable deaths in mothers, newborn babies, and stillbirths, and at what cost? *The Lancet, 384*(9940), 347–370. https://doi.org/10.1016/S0140-6736(14)60792-3

Ekwochi, U., Ndu, I. K., Nduagubam, O. C., Chime, O. H., Amadi, O. F., Eneh, C. I., Asinobi, I. N., & Osuorah, D. I. C. (2022). Evaluation of the impact of maternal training on knowledge of danger signs in sick newborns and health-seeking behaviors among mothers in Enugu, South-East Nigeria: A pre-and-post interventional study. *Annals of Clinical and Biomedical Research, 3*(2), Article 237. https://doi.org/10.4081/acbr.2022.237

Gentry, O.A., Adelani, A.A., Borode, S.B., Olofin-Samuel, M.A. and Oyeyemi, T.A. (2025) Factors Affecting Healthy Eating in Pregnancy among Women attending Antenatal Care in Ado-Ekiti, Ekiti State, *International Journal of Quantitative and Qualitative Research Methods*, 13 (1), 1-11 doi: https://doi.org/10.37745/ijqqrm.13/vol13n1111

Hooper, E., Mechkaroff, O., Upitis, A., Schofield, E., Carland, J. E., & Henry, A. (2025). The effectiveness of antenatal education on improving labour and birth outcomes: A systematic review and meta-analysis. *Women and Birth, 38*(2), Article 101843. https://doi.org/10.1016/j.wombi.2024.101843

Ikechebelu, J. I., Eleje, G. U., Onubogu, C. U., Ojiegbe, N. O., Ekwochi, U., Ezebialu, I. U., Ezenkwele, E. P., Nzeribe, E. A., Umeh, U. A., Obumneme-Anyim, I., & Nwokeji-Onwe, L. N. (2024). Incidence, predictors and immediate neonatal outcomes of birth asphyxia in Nigeria. *BJOG: An International Journal of Obstetrics & Gynaecology, 131*(Suppl. 3), 88–100. https://doi.org/10.1111/1471-0528.17816

Lawn, J. E., Blencowe, H., Oza, S., You, D., Lee, A. C. C., Waiswa, P., Lalli, M., Bhutta, Z., Barros, A. J. D., Christian, P., Mathers, C., & Cousens, S. N. (2014). Every Newborn: Progress, priorities, and potential beyond survival. *The Lancet, 384*(9938), 189–205. https://doi.org/10.1016/S0140-6736(14)60496-7

Lawn, J. E., Lee, A. C. C., Kinney, M., Sibley, L., Carlo, W. A., Paul, V. K., Pattinson, R., & Darmstadt, G. L. (2009). Two million intrapartum-related stillbirths and neonatal deaths: Where, why, and what can be done? *International Journal of Gynecology & Obstetrics, 107*(Suppl. 1), S5–S19. https://doi.org/10.1016/j.ijgo.2009.07.016

Lee, A. C. C., Kozuki, N., Blencowe, H., Vos, T., Bahalim, A., Darmstadt, G. L., Niermeyer, S., Ellis, M., Robertson, N. J., Cousens, S., & Lawn, J. E. (2013). Intrapartum-related neonatal encephalopathy incidence and impairment at regional and global levels for 2010 with trends from 1990. *Pediatric Research, 74*(Suppl. 1), 50–72. https://doi.org/10.1038/pr.2013.206

Msemo, G., Massawe, A., Mmbando, D., Rusibamayila, N., Manji, K., Kidanto, H. L., Mwizamuholya, D., Ringia, P., Ersdal, H. L., & Perlman, J. (2013). Newborn mortality and fresh stillbirth rates in Tanzania after Helping Babies Breathe training. *Pediatrics, 131*(2), e353–e360. https://doi.org/10.1542/peds.2012-1795

National Population Commission (Nigeria), & ICF. (2019). *Nigeria demographic and health survey 2018*. NPC and ICF. https://dhsprogram.com/pubs/pdf/FR359/FR359.pdf

United Nations Children's Fund. (2025). *Neonatal mortality*. UNICEF Data. Retrieved June 23, 2026, from https://data.unicef.org/topic/child-survival/neonatal-mortality/

Usman, F., Imam, A., Farouk, Z. L., & Dayyabu, A. L. (2019). Newborn mortality in sub-Saharan Africa: Why is perinatal asphyxia still a major cause? *Annals of Global Health, 85*(1), Article 112. https://doi.org/10.5334/aogh.2541

World Health Organization. (2016). *WHO recommendations on antenatal care for a positive pregnancy experience*. Author. https://www.who.int/publications/i/item/9789241549912

World Health Organization. (2024). *Newborn mortality* [Fact sheet]. https://www.who.int/news-room/fact-sheets/detail/newborn-mortality

Cite this article:

Author(s), OLUWASEYI, Omobola, DADA, Maria Romoke, ILESANMI, Mutiatu Oluwaseun, BALOGUN, Modupe Victoria, JAMIU, Sulaiman Tosin, **(2026). "** Integrating Birth Asphyxia Prevention into Routine Antenatal Education: A Narrative Review of an Achievable but Herculean Task **", Journal**: International Journal of Medicine, Nursing and Health Sciences (IJMNHS), P, 64- 75. **DOI**: www.doi.org/10.5281/zenodo.23118359 , Issue: 4, Vol.: 7, Article: 5, Month: August, Year: 2026. Retrieved from https://www.ijmnhs.com/all-issues/

Published By

AND

ThoughtWares Consulting & Multi Services International (TWCMSI)