

## TRADITIONAL BIRTH ATTENDANTS: A VITAL LINK IN THE CHAIN OF MATERNAL CARE

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### **Abstract**

*Traditional birth attendants are medium between the community and the formal healthcare system. They provide support and care to pregnant women and their new born babies, often in areas where there is limited access to health care. While they may not have the same level of medical training as doctors or nurse their experience and knowledge are highly valued by the communities they serve. Their role is not only about providing education, information, and a sense of comfort and familiarity. Traditional birth attendants play a vital role in rural and developing areas, providing essential care and preserving cultural traditions. The best way to address the challenge facing traditional birth attendants is through government support and collaboration with formal healthcare system. This involves providing resources like clean water and basic supplies, as well as training in basic healthcare practices. The government could also work to integrate traditional birth attendants into the formal health care system, so they can collaborate with doctors, nurses and other healthcare providers. This will ensure improved maternal outcomes. Training of TBAs will also promote the standard procedures during pregnancy, labour and prevent infection and other related intrapartum and postnatal problems.*

**Keywords:** Traditional birth, attendant, vital, link, maternal care.

### **Introduction**

Maternal health is a cornerstone for healthy and productive populations (Girum & Wasie, 2017). Despite efforts to reduce maternal and infant mortality, low and middle income countries continue to report significant mortality rates. Maternal mortality could be attributed to poor socio-economic conditions, low quality of care, lack of well-trained health care professionals, lack of infrastructure, and barriers to accessing medical facilities (Kyei-Nimakoh & Mccann 2017). These factors could contribute to high risk of maternal bleeding, complications and infections during child birth and unsafe abortions (Say 2014). Evidence suggests that reducing global maternal mortality and providing equitable access to health care can have many benefits for societies, including increased productivity and higher education attainment (Jamison, Summers, Alleyne, Arrow, Berkley, Binagwaho and Yamey, 2013).

A Traditional birth attendant (TBA), according to WHO is "a person who assists another during childbirth and who initially acquired her skills by delivering babies herself or through apprenticeship to other traditional birth attendants" (WHO 1992). In Africa, traditional-birth-attendants (TBAs) have historically been the major caregivers for women

during childbirth. Like many low income countries, pregnant women continue this to either give birth at home or with TBAs. Traditional midwifery has been a part-time practices. Many TBAs rely on herbal medicines which are culturally inherited to assist women before, during and after labour. Meanwhile, research suggests that these TBAs have had very little training and education that might integrate them into the larger health care system and even those with training need the support of skilled backup services (Ribeiro, 2014 & Ganle, 2015).

In 1987, introduction and adoption of safe motherhood programmes in Ghana drew attention to the need for women to patronize professional healthcare services during pregnancy and childbirth (Okiewelu & Noutcha, 2007.) However, these services are limited and not easily accessible or of low quality. In rural communities, over 30% of pregnant women do not have access to skilled birth attendants. Therefore, some of these women continue to access the services of TBAs. However, there is a dearth of information on the type of support and remedies they provide to women during pregnancy (Aryeetey, Jehu-Appiah, Spaan, Agyepong, & Baltussen. 2015). TBA care has been known to cut across pregnancy, labour, postpartum and care of the newborn. Preference for TBAs has also been attributed to the fact that they provide affordable and accessible services as well as conduct delivery at home- an environment familiar to the woman (Serizawa et al. 2014 & Sarker et al, 2016). Traditional midwives provide basic health care, support and advice during and after pregnancy and childbirth, based primarily on experience and knowledge acquired informally through the traditions and practices of the communities where they originated (World health organization, 2010). They usually work in rural, remote and other medically underserved areas. TBAs may not receive formal education and training in health care provision, and there are no specific professional requisites such as certification or licensure. A traditional birth attendant may have been formally educated and has chosen not to register (The regulation of midwifery, 2011). They often learn their trade through apprenticeship or are self-taught; in many communities one of the criteria for being accepted as a TBA by clients is experience as a mother. Many traditional midwives are also herbalists, or other traditional healers. They may or may not be integrated in the formal health care system. They sometimes serve as a bridge between the community and the formal health system, and may accompany women to health facilities for delivery.

Induction or initiation refers to the process by which a person becomes recognized as traditional birth attendant within the community. This process may vary from community to community, but it often involves training, mentorship and sometimes even involves induction or initiation ceremonies or rituals. It is a process that helps to ensure that the traditional birth attendant is respected and trusted by the community.

According to Sialubanje, Massar, Hamer, and Ruiters. (2015) initiation into TBA practice includes formal training by district health staff and organizations, sacred calling through dreams or visions (Walsh, 2006) and inheriting or apprenticeship from close relatives such as mothers (Aborigo et al, 2015). The apprenticeship has the duration of two to five years under a family member but one to two years when the trainer of the TBA is not a family member (Falle et al, 2009) probably because of commitment and paid training for those who are not family members. The findings also pre-suppose that TBAs learn on the job and hence may not benefit from scientific and standard processes of childbirth. It is

reported that TBAs keep the pregnancy status of a woman secret until signs of pregnancy are obvious in order to protect both mother and baby (Choguya, 2014). They also assess the vagina for cervical dilatation during labour and some listen to fetal heartbeats by positioning a bamboo on the abdomen (Dorwie, 2014). Some TBAs place women in labour in a pounding mortar and when labour unduly delays, the woman is accused of concealing secrets such as infidelity and that labour will only progress after confession (Dorwie, 2014 & Treacy, 2015). Traditional birth attendants also use herbal medicine (Ohaja & Murphy-lawless, 2017) to manage prolonged labour and retained placenta (kaingu et al., 2011) but when overwhelmed by complications they refer to health facilities (Vygusa et al. 2013).

### **Training and focus of work**

Traditional birth attendants are often older women, respected in their communities. They consider themselves as private health care practitioners who respond to requests for service. The focus of their work is to assist women during delivery and immediately post-partum. Frequently their assistance includes helping with household chores (United Nations population fund, 1996).

TBAs may not have any formal training on how to attend to pregnant women. Many are highly experienced in caring for pregnant women, including how to recognize and respond appropriately to complications of pregnancy. It is a matter of discussion whether the lack of education in some TBAs and the way many attend deliveries are risky for the mothers and their babies. Evaluating the impact of these traditional practitioners on health outcomes requires taking into consideration additional factors such as poverty, availability of health services, or institutional support (Sarmiento et al. 2016 & WHO, 2000). It is being increasingly recognized that TBAs may have a role to play in improving health outcomes in developing countries because of their access to communities and the relationships they share with women in local communities, especially if women are unable to access skilled care. Some countries, training institutes and non-governmental agencies are initiating efforts to train TBAs in basic and emergency obstetric care, family planning, and other maternal health topics, in order to enhance the links between modern health care services and the community, and to improve the chances for better health outcomes among mothers and babies. There is little evidence of large-scale effectiveness of targeted intervention programmes for training TBAs, as they are rarely integrated within a general strategy for improving maternal and childcare (UNPF, 1996).

### **Integration into healthcare systems in developing countries**

Before now, Traditional Birth Attendants (TBA) have operated outside of the formal healthcare delivery structure (Sibley et al. 2004), TBA training has been used as a means of extending health services to underserved communities in developing nations in hopes of decreasing mortality and morbidity. While the focus in the past two decades has been on training TBAs, studies on training impact has shown conflicting results in maternal outcomes with many studies showing little to no impact on high maternal mortality outcomes (Gloyd et al. 2001). As a result, there has been a shift toward skilled birth attendants, capable of averting and managing complications (Byrne, 2011). The TBAs role in the community

should not be overlooked; they are highly respected members and proven assets in addressing poor maternal outcomes (Birth Attendants in Maternal Health programs accessed 2012) TBAs have been unsuccessful in handling obstetric complications, but have contributed to successful maternal, neonatal, and child health interventions, although there is insufficient evidence that TBA training improves peri-neonatal mortality (Bhardwaj et al. 1990 & Peltzer & Henda, 2006) The key piece missing in TBA training is an adequate referral system, which allows TBAs to use their close ties with the community to link pregnant women to skilled birth attendants (SBA) (Prata et al, 2009).

The effectiveness of TBA referrals to health facilities is dependent on the healthcare system's ability to support an increase in services provided and the supervision needed to support TBA integration (Byrne & Morgan, 2011) "Five process" for TBA integration were identified: training and supervision of TBAs; collaboration skills for health workers; inclusion of TBAs in facility-based activities; systems for communication between TBAs and SBAs; and defining roles for TBAs and SBAs (Byrne & Morgan, 2011) While these mechanisms are important, complementary activities also influenced TBA referral and integration success: "careful selection of TBAs; community participation; health system development; and affordability change (Byrne & Morgan, 2011) TBA's must be provided with appropriate knowledge, easy access to health personnel, and quality and regular supervision; all the three components enable training to become a tool for TBA integration into the healthcare system (Byrne & Morgan, 2011) The referral training for TBAs allows them to act as "intermediaries between the community and the formal health care system (Baxter, 2011). Training that advocates collaboration and regular involvement in clinic duties, increases the number of referrals and improves communication (Byrne & Morgan, 2011).

According to Krasovec, (2004) most maternal deaths from direct causes (such as hemorrhage, obstructed labor, infections, eclampsia, or unsafe abortions) could be prevented if women received timely care at critical moments. On average, half of deliveries in the developing world have a skilled birth attendant present (Krasovec, 2004). With many deliveries outside of the health center, and an estimated 9-15% of deliveries requiring intervention, access to transportation and communication are critical to improve maternal and infant outcomes. Major contributing factors to maternal death are: "delay in recognizing danger signs, deciding to seek care, reaching care, and receiving care at health facilities (Thaddeus & Maine, 1994). To improve access to healthcare for pregnant women, many communities have implemented transportation Committees, which employ bicycle ambulances and oxcarts to transport pregnant women to health facilities. For example in Malawi, there were issues during the rainy season. The program later added ambulances, targeted information, education, maternity waiting, and focused education activities for decision makers in the family. The maternity waiting homes were rare because they required funds collected by the community.

#### **In Uganda transportation strategies failed:**

- Stationing two ambulances at a referral facility was not effective. Communication and lack of planning for fuel price hikes and shortages were cited as the causes for poor results (Lalonde et al, 2003).

- UNFPA used four-wheel-drive vehicles, a designated referral point and a standard for referral care. Reports of fuel shortages threaten the success of the program (Experience of the Iganga District in Uganda).

**Honduras experienced breakthrough:** Improved roads, communication, ambulances, and increased staffing and equipment increased referrals and reduced maternal Mortality (Daniel, 1990-1997).

**In Sri Lanka:** The Sri Lankan government provided three to five ambulances at each hospital. The program gave health workers the authority to organize, pay, and receive reimbursement for privately organized transportation (Pathmanathan ). However, in Nigeria, Community leaders negotiated a contract with a local bus union to transport women with obstetric emergencies. The drivers received training and were reimbursed for fuel by a community fund. In the event of a death police and local authorities were made aware of the arrangement, so that bus drivers would not be held liable (Shehu et al.1997).Transportation signal to improve services in West Africa: Some countries in West Africa use a yellow flag as a signal to passing drivers that a laboring woman is in distress. Willing drivers stop and transport the woman to a health facility (Trunk drivers help pregnant women, BBC News).

### **Concept of Skilled Birth Attendance**

Skilled birth attendants provide maternal care during pregnancy, childbirth and postpartum and newborn care at health centres. During pregnancy, skilled attendants monitor the progress of the pregnancy, detect complications, provide preventive measures, develop birth and emergency plans with the woman and her family and advise women on health, lifestyle and nutrition in pregnancy. During child birth, skilled attendants monitor the progress of labour, they are vigilant for complications, and they stay with the women and support them in many ways. They know how to manage abnormalities such as breech delivery, and they work in a team of professionals with obstetric, neonatal and anesthesia skills and are able to handle severe complications. Access to skilled care during pregnancy, childbirth, and post-partum should be prioritized to improve maternal and child health. All women and babies need good maternity care during pregnancy, childbirth and after delivery to enhance optimal pregnancy outcomes (WHO,2018) However, globally, a third of child births occur at home without assistance of a skilled birth attendant. The World Health Organization advocates for skilled care at every birth to reduce the global burden of 536000 maternal deaths, 3 million stillbirths and 3.7 million newborn deaths each year. In Indonesia, interventions to enhance collaboration and partnerships between traditional birth attendants, skilled birth attendants and facility based staff, created relationships integrated into midwifery training.

In the postnatal period, they provide care in various ways including helping mothers and babies in breastfeeding, managing severe postpartum bleeding, depression etc. They give timely treatment to babies with problems such as preterm birth or those with complications associated with birth (Frankenberg et al). Skilled attendants provide

counselling on postnatal contraception to mothers. They advise mothers on preventing mother to child transmission of HIV. This advice starts with HIV testing, providing antiretroviral therapy, counselling on infant feeding and on safer sex practices including use of condoms as well as the importance of family planning. Access to skilled birth attendant is thus critical in improving maternal and newborn (pyone et al, 2014 & WHO,2014) However, in low resource settings, rural and refugee camps, professionally trained staffs are often in short supply hence women tend to rely on traditional birth attendants (TBAs) for delivery (WHO,1992) Despite knowledge that a healthcare facility delivery is safer, many women from low resource environments continue to seek for the care of TBAs (Pyone et al, 2014 & Kamal, 1998).

### **Roles of traditional birth attendants**

TBAs play a vital role in providing care to pregnant women, both during and after child birth. They are well established and live in close proximity to the women who require maternity care in the community. They have detailed knowledge of the community norms and are paid for their services (WHO, 2018). TBAs are often older, respected women who are part of the local community but do not have a formal education and are often illiterate. Apart from being nearby and available, TBAs are trusted by women and they provide culturally appropriate pregnancy care in line with the traditional expectations of the community.

Traditional birth attendants (TBAs) play a critical role in maternal healthcare in the rural and deprived communities where there are inadequate skilled birth attendants (Adatara et al. 2018)'In a study conducted in Ghana focusing on TBAs' perspectives on their role indicated that, TBAs assist in conducting uncomplicated deliveries at home due to absence of skilled birth attendants. According to this study, TBAs perceived their roles to include; advising women to go to the health facility to deliver. However, sometimes women refuse to deliver in health facilities. The study further revealed that TBAs provide health education on nutrition and natural family planning to women in their respective communities. Additionally, TBAs arrange for means of transport and accompany women in labour to the health facility to give birth. They offer the couple education on natural family planning. TBAs provide psychological support through counselling. It also emerged from the study that TBAs are paid in kind for the services they offer (Adatara et al, 2018).

Traditional birth attendants have continued to be culturally and socially accepted in many societies despite their limitation in handling childbirth complications (Cheptum et al 2017) Globally, every year over five hundred thousand women die due to complications related to pregnancy, and childbirth (Cheptum,et al 2017) The mortality rates are high in developing countries especially in sub-Saharan Africa. In sub-saharan Africa, maternal mortality rate is at 500/100000 compared to Asia 220/100000, while Caribbean and Latin America is 80/100000E (Cheptum et al. 2017).

Most of the causes of maternal mortality are preventable through utilization of skilled care at birth (WHO, 2015). However, in developing countries, many women attend antenatal care in the hospital but few of them deliver with skilled birth attendants (Wang et al (2011).

### **Health implications of traditional birth attendance**

Training TBAs has been shown to increase the utilization of prenatal, antenatal, and postnatal healthcare of women who otherwise are unable to seek treatment from a skilled birth attendant (Sibley and Sipe 2006). Without formal training, TBAs are unable to identify the signs of a critical pregnancy or labor and delivery danger signs which can significantly put a mother's life at risk (Doctor et al, .2013). Training of TBAs is recommended in addition to an increase of hospital births and informing women who utilize TBAs to request that they refer them to a health facility if they are unable to care for them properly (Bukar &Jauro, 2013).

Providing quality maternal health training to TBAs will help them recognize their scope and limitations, and possibly refer mothers and their infants for immunization, family planning, and emergency services as needed (Agbo MAE, 2013). TBAs, in addition to other community members who are influential in decision making, should be included in educational and communication activities. An example of this includes community mobilization to recommend oral misoprostol to prevent postpartum hemorrhaging, which has been effective (Henderson et al.2012).

A lack of comprehensive maternal and child health infrastructure and a need for policy improvements were found as factors that influence maternal health in Nigeria. A reason for the high utilization rates of TBAs in rural areas is due largely to lack of access to health care facilities. Eliminating the utilization of TBAs in rural areas will not alleviate mortality rates but may actually exacerbate rates as it would leave mothers without access to any form of assistance. Policy makers, such as the International Confederation of Midwives (ICM), can advocate for the inclusion of TBAs as an important bridge to healthcare without excluding them (Iyaniwura & Yusuf, 2009). WHO and the United Nations have acknowledged the importance of integrating TBAs in health care interventions and training TBAs in an aim to reduce mortality rates. Furthermore, government agencies should provide support in the strengthening of relationships between skilled health workers and TBAs. To improve the quality of care for women, cooperation and communication is needed between TBAs and health care workers. The communities' input and participation can help improve programs and health service delivery. Policies that incorporate an ecological systems view, which acknowledges and recognizes the contributions of TBAs and socio-historical factors that encourage their utilization, is a step forward. This highlights the relevance of the important cultural and social roles that TBAs fulfill in their communities.

To reduce maternal mortality and improve maternal healthcare in Nigeria, an increase in quality health education for women and their family is essential. Additionally, the inclusion of culturally appropriate and sensitive health care practices is warranted (Osunbor et al.2006). With improvements in education for both men and women, in addition to improving the overall economic status of the families; a reduction in maternal deaths in communities is possible and likely (Iyaniwura &Yusuf, 2009). Paternal attitude is an important factor that influences many women when it comes to seeking quality care due to negative outlooks within the health system. When men gave their wives more permission to go to a health care center, health care utilization increased (Findley et al.s2015) Increasing the focus on the role of men in the pregnancy and postpartum period can be done by

providing education, incentives, and support that can be instrumental in reducing maternal mortality and increasing health care usage among both men and women.

It is important to note that westernized medicine is often viewed as the preferred form of care which has contributed to the role of TBAs being devalued. Western medical knowledge is often used as the standard of acceptable medical practice, intentionally ignoring the cultural perspective and tradition into utilization thus perpetuating the roles of TBAs as inferior and unsafe. Reasons for the recent devaluation of TBAs role is also due to lack of evidence based literature and research that can support utilization of TBAs positively. Though there is no direct link to high utilization of TBAs and mortality rates in infants and mothers, researchers tend to attribute the use of TBAs to morbidity and mortality in countries where they are heavily utilized.

The high utilization rates of TBAs in rural areas and developing countries are not solely due to comfort level mothers but also to lack of access to health care facilities. Therefore, eliminating TBAs in rural areas will not alleviate mortality but may exacerbate rates as it would leave mothers and children without access to any form of assistance. When establishing goals for MDG 5, there should be more of a positive lens that highlights TBAs that have good intentions but are limited in skills and knowledge. TBAs are the bridge to reaching the community and providing the quality care needed for mothers.

### **Conclusion**

Traditional birth attendants play a vital role in rural and developing areas, providing essential care and preserving cultural traditions. However, their work is often hampered by a lack of access to training and education, as well as a lack of access to training and education, as well as a lack of collaboration with healthcare professionals. By addressing these challenges and promoting the role of traditional birth attendants, we can improve the health and wellbeing of mothers and babies in these communities.

The best way to address the challenge facing traditional birth attendants is through government support and collaboration with the formal healthcare system. This involves providing resources like clean water and basic supplies, as well as training in basic healthcare practices. The government could also work to integrate traditional birth attendant into formal health care system, so they can collaborate with doctors, nurses and other healthcare providers. This will ensure improved maternal outcomes.

Traditional birth attendants should have increased access to healthcare facilities and education is needed through policy and infrastructure and advancement. It is important that TBAs are formally trained since such knowledge will enable them to recognize early signs of complications and refer early so that lives can be preserved. Training of TBAs will also promote the standard procedures during pregnancy, labour and prevent infection and other related intrapartum and postnatal problems. Finally, increasing awareness on the role and importance of traditional birth attendants in the community could help promote their work.

## References

- Aborigo, R. A., Reidpath, D. D., Oduro, A. R., & Allotey, P. (2015). Male involvement in maternal health: perspectives of opinion leaders. *BMC Pregnancy and Childbirth*, 15, 216. <https://doi.org/10.1186/s12884-015-0652-7>
- African Resources: Traditional Birth Attendants, accessed 3 March 2011.
- Agbo MAE. Training of traditional birth attendants: a strategy for reduction of maternal and infant mortality. *West African Journal of Nursing*. 2013:42–52
- Aryeetey, R., Jehu-Appiah, C., Spaan, E., Agyepong, I., & Baltussen, R. (2015). Costs, equity, efficiency and feasibility of identifying the poor in Ghana's National Health Insurance Scheme: Empirical analysis of various strategies. *Tropical Medicine & International Health*, 17(1), 43-51. <https://doi.org/10.1111/j.1365-3156.2011.02765>
- Byrne, A; Morgan A (2011). "How the integration of traditional birth attendants with formal health systems can increase skilled birth attendance". *International Journal of Obstetrics and Gynecology*. 115 (2): 127-34. doi:10.1016/j.jgo.2011.06.019. PMID 21924419.
- Bukar M, Jauro YS. Home births and postnatal practices in Madagali, North-Eastern Nigeria. *Nigerian Journal of Clinical Practice*. 2013;16(2):233–245
- Cheptum, J. J., Gitonga, M. M., Mutua, E. A., & Mukono, S. O. (2017). Mothers' experiences of delivery services by traditional birth attendants in rural Kenya. *International Journal of Nursing, Midwife and Health Related Cases*, 3(4), 9-20. Retrieved from <https://www.eajournals.org/>
- Choguya, N. Z. (2014). Traditional Birth Attendants and Policy Ambivalence in Zimbabwe. *Journal of Anthropology*, 2014, Article ID 750240, 9 pages. <https://doi.org/10.1155/2014/750240>
- Doctor HV. Intergenerational differences in antenatal care and supervised deliveries in Nigeria. *Health and Place*. 2011;17:480–489
- Doctor HV. Variations in under-five mortality estimates in Nigeria: explanations and implications for program monitoring and evaluation. *Maternal and Child Health J*. 2013;17(8):1355–8.
- Dorwie, F. M., & Pacquiao, D. F. (2014). Practices of traditional birth attendants in Sierra Leone and perceptions by mothers and health professionals familiar with their care. *Journal of Transcultural Nursing*, 25(1), 33-41. <https://doi.org/10.1177/1043659613503874>
- Findley SE, Doctor HV, Ashir GM, Kana MA, Mani AS, Green C, et al. Reinvigorating health systems and community-based services to improve maternal health outcomes: Case study from Northern Nigeria. *Journal of Primary Care Community Health*. 2015;6(2):88–99.
- Girum, T., & Wasie, A. (2017). Correlates of maternal mortality in developing countries: An ecological study in 82 countries. *Maternal Health, Neonatology and Perinatology*, 3(1), 19. <https://doi.org/10.1186/s40748-017-0059-8>
- Gloyd, S; Floriano F; Scunda M; Chaqreque MA; Nyangezi JM; Platas A (2001). "Impact of traditional birth attendant training in Mozambique: a controlled study". *Journal of*

- Midwifery Womens Health. 46 (4): 210-6. doi:10.1016/1526-9523(01)00142-8. PMID 11603632.
- Henderson, J. V., Storeygard, A., & Weil, D. N. (2012). Measuring economic growth from outer space. *American Economic Review*, 102(2), 994-1028. <https://doi.org/10.1257/aer.102.2.994>
- Jamison, D. T., Summers, L. H., Alleyne, G., Arrow, K. J., Berkley, S., Binagwaho, A. & Yamey, G. (2013). Global health 2035: A world converging within a generation. *The Lancet*, 382(9908), 1898-1955. [https://doi.org/10.1016/S0140-6736\(13\)62105-4](https://doi.org/10.1016/S0140-6736(13)62105-4)
- Kaingu, C. K., Oduma, J. A., & Kanui, T. I. (2011). Practices of traditional birth attendants in Machakos District, Kenya. *Journal of Ethnopharmacology*, 137(1), 495-502. <https://doi.org/10.1016/j.jep.2011.05.008>
- Kyei-Nimakoh, M., Carolan-Olah, M., & McCann, T. V. (2017). Access barriers to obstetric care at health facilities in sub-Saharan Africa—a systematic review. *Systematic Reviews*, 6(1), 110. <https://doi.org/10.1186/s13643-017-0503->
- Lalonde, R. N., Cila, J., Lou, E., & Giguère, B. (2013). *Canadian Journal of Behavioural Science / Revue canadienne des sciences du comportement*, 45(4), 296-304.
- Maternal Health Task Force: Hamlin Fistula Hospital, MHTF blog, accessed 3 March 2011. Occupational licensing of a credence good: the regulation of midwifery, accessed 3 March 2011.
- Okiwelu, S. N., & Noutcha, M. A. E. (2007). Breeding sites of *Culex quinquefasciatus* (Say) during the rainy season in rural lowland rainforest, Rivers State, Nigeria. *Public Health Research*, 2(4), 131-137. <https://dx.doi.org/10.5923/j.phr.20120204.01>
- Ohaja, M., & Murphy-Lawless, J. (2017). Unilateral collaboration: The practices and understandings of traditional birth attendants in Southeastern Nigeria. *Women and Birth*, 30(4), e165–e171. <https://doi.org/10.1016/j.wombi.2016.12.002>
- Osubor KM, Fatusi AO, Chiwuzie JC. Maternal health-seeking behavior and associated factors in a rural Nigerian community. *Maternal and Child Health Journal*. 2006;10(2):159–169
- Prata N. (2009). Making family planning accessible in resource-poor settings. *Philosophical transactions of the Royal Society of London. Series B, Biological sciences*, 364(1532), 3093–3099. <https://doi.org/10.1098/rstb.2009.0172>
- Pyone, T., Adaji, S., Madaj, B., Woldetsadik, T., & van den Broek, N. (2014). Changing the role of the traditional birth attendant in Somaliland. *International Journal of Gynecology & Obstetrics*, 127(1), 41-46. <https://doi.org/10.1016/j.ijgo.2014.04.009>
- Say, L., Chou, D., Gemmill, A., Tunçalp, Ö., Moller, A. B., Daniels, J., ... & Alkema, L. (2014). Global causes of maternal death: A WHO systematic analysis. *The Lancet Global Health*, 2(6), e323-e333. [https://doi.org/10.1016/S2214-109X\(14\)70227](https://doi.org/10.1016/S2214-109X(14)70227)
- Sarmiento, I; Zuluaga, G; Anderson, N(2016). "Traditional medicine used in childbirth and for childhood diarrhea in Nigeria's Cross River State: interviews with traditional practitioners and a statewide cross-sectional study". *BMJ Open*. 6:e010417. doi:10.1136/bmjopen-2015-010417.
- Serizawa, T., Yamamoto, M., Shuto, T., Higuchi, Y., Ono, J., Inomori, S & Kuribayashi, S. (2014). Stereotactic radiosurgery for patients with multiple brain metastases

- (JLGK0901): a multi-institutional prospective observational study. *The Lancet Oncology*, 15(4), 387-395.
- Shehu, D., Ikeh, A. T., & Kuna, M. J. (1997). Mobilizing transport for obstetric emergencies in northwestern Nigeria. *International Journal of Gynecology & Obstetrics*, 59(Suppl. 2), S173-S180.
- Sialubanje, C., Massar, K., Hamer, D. H., & Ruiter, R. A. C. (2015). Reasons for home delivery and use of traditional birth attendants in rural Zambia: a qualitative study. *BMC Pregnancy and Childbirth*, 15,
- Sibley, L; Sipe T; Koblinsky M (2004). "Does traditional birth attendant training improve referral of women with obstetric complications: a review of the evidence". *Soc Sci Med*. 59 (8): 1757-68. doi:10.1016/j.socscimed.2004.02.009. PMID 15279931.
- Thaddeus, S., & Maine, D. (1994). Too far to walk: Maternal mortality in context. *Social Science & Medicine*, 38(8), 1091-1110.
- United Nations Population Fund. 1996. Evaluation Findings: Support to traditional birth attendants <http://www.unfpa.org/monitoring/pdf/n-issue7.pdf>
- Walsh, F. (2006). *Strengthening family resilience* (2nd ed.). New York: Guilford Press
- WHO, UNICEF, UNFPA, The World Bank: Trends in maternal mortality: 1990 to 2010. Geneva: World Health Organization; 2012.
- World Health Organization. "General guidelines for methodologies on research and evaluation of traditional medicine." (2000).
- World Health Organization. 2010. Classifying health workers. Geneva, WHO. World Vision: Ethiopia: Trained traditional birth attendants easing delivery, accessed 3 March 2011.