

Family as the Main Caregivers during Child Delivery in Resource-Poor Settings of Nasarawa State, Nigeria

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Abstract

This article drew from a population-based survey of 413 women to determine the proportion of births assisted by the family in resource-poor areas of Nasarawa State. “Resource-poor settings” was defined as rural communities without access to health facilities. This exploratory study utilised a two-stage cluster random sampling technique to select 413 houses where questionnaires were administered to women who had given birth in the five years preceding the study. Simple descriptive and inferential statistics were used to analyse the study data. The analysis reveals gross inequality in access to skilled birth facilities during childbirth in Nasarawa State. Births at home were common in rural areas among women of low socio-economic status who were illiterate. In resource-poor settings (where health facilities were unavailable), the family played a substantial role in child delivery. Specifically, while doctors and nurses attended to about 90 per cent of all births in resource-rich settings (where health facilities are available), the family members took delivery of 51.5 per cent of all births in resource-poor settings. Family members or relatives delivered the majority of the births that took place at home (61.6%). The traditional birth attendants assisted only 11.5 per cent of births within resource-poor settings, compared to only two per cent within resource-rich settings. The findings emphasised that the role of the family in caregiving during childbirth is not limited to providing social capital and emotional support but they also act as key caregivers, especially in resource-poor settings.

Keywords: Nigeria; resource-poor; caregivers; maternal health; childbirth



Introduction

The burden of maternal death (the death of a woman while pregnant or within 42 days of termination of pregnancy from any cause related to or aggravated by the pregnancy or its management) is highest in sub-Saharan Africa (Ronsmans, Graham, and Lancet Maternal Survival Series Steering 2006; Wang, Liddell, Coates, Mooney, Levitz, Schumacher, Apfel, Iannarone, Phillips and Lofgre 2014; World Health Organization 2015). The World Health Organization (WHO) and UNICEF (2015) estimate that 303 000 maternal deaths occurred globally in 2015 and 66 per cent of these deaths occurred in sub-Saharan Africa. What is more, women residing in rural areas, especially in poor communities, have the greatest risk of dying as a result of pregnancy and childbirth (Montagu, Yamey, Visconti, Harding and Yoong 2011; WHO 2014, 2015a). The rationale is that women residing in developing countries, especially rural areas, on average have many more pregnancies than women in developed countries, and their lifetime risk of maternal deaths (the chances that a woman would die from a pregnancy-related cause) is higher. There is huge inequality in maternal health globally. For instance, a woman's lifetime risk of maternal death is 1 in 4 900 in developing countries, compared to 1 in 180 in developed countries (WHO 2015b).

Nigeria has a heavy burden of maternal mortality. Every day, 159 women die due to pregnancy-related causes in Nigeria (WHO 2015a). The country accounts for about 20 per cent of global maternal deaths (WHO 2015a) despite housing less than three per cent of the world's population. There is evidence of huge socio-economic and geographical inequality in maternal health in Nigeria. Poor women, uneducated women and those living in rural areas have the worst maternal health indicators in the country.

Indeed, the effects of maternal deaths are worse felt in the family (Finlay, Moucheraud, Goshev, Levira, Mrema, Canning, Masanja, and Yamin 2015; Mosley, Koblinsky, Reed, Council, and Population 2000). The death of a mother during pregnancy or during childbirth can devastate the health and economic wellbeing of her family (Miller and Belizan 2015). Studies have shown that children whose mothers died due to maternal-related events are often abandoned by their fathers, undernourished, forced to drop out of school, to take on difficult household and farm tasks and are far less likely to survive (Houle, Clark, Kahn, Tollman and Yamin 2015; Molla, Mitiku, Worku and Yamin 2015; Moucheraud, Worku, Molla, Finlay, Leaning and Yamin 2015; Scott, Kendall, Gomez, Howie, Zaman, Ceesay, D'Alessandro and Jasseh 2017; Zhou, Zhang, Ye, Wang, Huntington, Huang, Wang, Liu and Wang 2016). There is also evidence that children whose mothers have died perform poorly compared to children whose mothers are alive (Case and Ardington 2006) and overall are at greater risk of dying (Molla et al. 2015; Moucheraud et al. 2015; Ronsmans, Chowdhury, Dasgupta, Ahmed and Koblinsky 2010). The effect of maternal deaths is also felt in the community through grieving the loss of a community member. A study has shown that the indirect cost of

maternal death in the African region in 2010 amounts to a total non-health GDP loss of \$4.5 billion (Kirigia, Mwabu, Orem and Muthuri 2014).

The biological causes of maternal deaths are known, treatable and preventable with the use of quality obstetric services. However, more than half of all births globally are unattended by a skilled provider (Alkema, Chou, Hogan, Zhang, Moller, Gemmill, Fat, Boerma, Temmerman and Mathers 2016; WHO 2015b). In Nigeria, for instance, only 38 per cent of all births take place in health facilities and skilled birth attendants attend only 39 per cent of all births (National Population Commission [Nigeria] and ICF International 2014). Poverty, unavailability of health facilities in communities of residence, ignorance, inadequate services, and cultural practices are known social determinants of maternal deaths (Ng, Kiserud, Kvåle, Byskov, Evjen-Olsen, Michelo, Echoka and Fylkesnes 2014; Nyango, Mutihir, Laabes, Kigbu and Buba 2014; Roro, Hassen, Lemma, Gebreyesus and Afework 2014; Say, Chou, Gemmill, Tunçalp, Moller, Daniels, Gülmezoglu, Temmerman and Alkema 2014; Silal, Penn-Kekana, Harris, Birch and McIntyre 2012; Yesuf, Kerie and Calderon-Margalit 2014). In settings where there are health facilities, most women often favour utilising those health facilities for child deliveries. However, many women prefer to give birth at home to travelling long distances in search of facility-based delivery.

Literature is replete with studies on determinants of the preferred place of childbirths (Asseffa, Bukola and Ayodele 2016; Edmonds, Paul and Sibley, 2012; Feyissa and Genemo 2014; Idris, Gwarzo and Shehu, 2006; Ononokpono and Odimegwu 2014; Tsegay, Gebrehiwot, Goicolea, Edin, Lemma and San Sebastian, 2013; Wagle, Sabroe and Nielsen 2004). A study conducted in a northern Nigeria state shows that 70 per cent of births took place at home in 2016 and 78 per cent of all births occurred without the assistance of skilled attendants (Idris et al. 2006). The main determinants of home delivery include: no formal education, maternal age and husband's occupation (Idris et al. 2006). Another study in northern Nigeria shows that while over 65 per cent of women in urban areas gave birth in a skilled birth facility, only 4.7 per cent delivered in a health facility in rural areas. Similarly, skilled birth attendants assisted in the delivery of 70 per cent of all childbirths in urban areas compared to only 4.3 per cent in rural areas. Notable reasons for home deliveries in rural areas were the lack of consent from husbands, no privacy in health facilities, distance to the health facility and non-availability of delivery wards, while the emergencies related to deliveries were the main reason in the urban areas (Shehu, Ibrahim, Oche and Nwobodo 2016).

However, a systematic review study shows that higher maternal age, education, household wealth, lower parity and urban residence contribute towards an increase in the use of skilled birth facilities (Gabrysch and Campbell 2009). Quality of care was an important determinant of use of skilled birth facilities as reported in a qualitative study, but it is difficult to measure quality of care in quantitative study (Gabrysch and

Campbell 2009). The determinants of skilled birth facilities utilisation are context-specific and overlap substantially between complex variables. such as demographic variables and community level factors (Gabrysch and Campbell 2009). A rural southern Tanzanian study shows that despite almost all women attending antenatal care service, only 46.7 per cent gave birth in a health facility. A low proportion of 44.5 per cent of all births in the southern Tanzanian region were assisted by skilled birth attendants (Mpembeni, Killewo, Leshabari, Massawe, Jahn, Mushi and Mwakipa 2007). Distance to the health facility; discussion with the woman's partner and agreeing on the place of delivery; persuasion by friends or family members to deliver in a health facility and knowledge of pregnancy risk factors by the pregnant woman were associated with the utilisation of skilled facilities (Mpembeni et al. 2007). In Bangladesh, women's intention about the place of childbirth, women's perceptions of the labour process, the availability of transportation at the time of labour, and proximity of the health facility to the household, were determinants of facility-based childbirth (Edmonds et al. 2012). However, in a Canadian study, it was reported that the motivating factor for home childbirth is choice rather than distance (Murray-Davis, McNiven, McDonald, Malott, Elarar and Hutton 2012). In Nepal, a travel time of more than one hour to the health facility, low amenity, low education and multi-parity were associated with home childbirth (Wagle et al. 2004). In rural Cambodia, only 19.8 per cent of women had a skilled attendant present during their last childbirth (Yanagisawa, Oum and Wakai 2006). Antenatal care utilisation, years of school attendance of the mother and prolonged labour were the determinants of facility delivery.

In rural Zambia only 42 per cent of women gave birth in a health facility and 75 per cent of women preferred to have the assistance of a skilled attendant during childbirth in a health facility (Van Den Boogaard, Arntzen, Chilwana, Liyungu, Mantingh and Stekelenburg 2008). Transportation problems, sociocultural reasons and birth unpreparedness, however, prevented women from utilising skilled birth attendants (Van Den Boogaard et al. 2008). In Kenya, access to health facilities, availability, proximity, transportation and affordability were found to influence the decision of whether women would deliver in a health facility (Kitui, Lewis and Davey 2013). In western Ethiopia, education, distance to the health facility, family size and place of residence are determinants of birth in a facility (Feyissa and Genemo 2014). However, in southern Ethiopia, a woman's age, her level of education, her husband's level of education, their wealth quintile, utilisation of antenatal care, distance from the nearest health facility and whether pregnancies are planned or not, are determinants of facility birth (Asseffa et al. 2016). In rural Ghana, ethnicity, the partner's education, parity, household wealth, and distance to a health facility were the determinants of place of delivery (Dickson, Adde, and Amu 2016).

It is still unclear who the main caregivers are during home childbirths, especially in medically underserved communities. The "caregiving" as used in this study refers to the

assistance that family members give to pregnant women during childbirth and postnatal care. The literature appears to suggest that Traditional Birth Attendants (TBAs) are the main caregivers in these settings (Bergström and Goodburn 2001; Sibley, Sipe, Brown, Diallo, McNatt and Habarta 2007). Indeed, TBAs are at the centre of policy focus, which suggests that they are the recognised caregivers in medically underserved settings. In addition, there are interventions (especially training programmes in obstetrics) targeting TBAs in order to increase their skills and knowledge (Goodburn, Chowdhury, Gazi, Marshall and Graham 2000). The rationale is that trained TBAs can help reduce maternal mortality by recognising warning signs during labour and referring women who have childbirth complications to skilled birth facilities in a timely manner (Sibley et al. 2007).

Even though TBAs appear to be the main caregivers during childbirth as reported in the literature (Sibley et al. 2007), this article posits that the family may, in fact, be the main caregivers during home childbirths and postnatal care in many resource-poor settings. The article further suggests that public health awareness targeting the family on vital signs and dangers of home delivery would be a more effective programme than training TBAs in the prevention of maternal deaths. One Tanzanian study shows that among women who delivered at home, half were assisted by relatives compared to 46.3 per cent assisted by TBAs (Mpembeni et al. 2007). The Nigeria Demographic and Health Survey (NDHS, 2013) shows that families assisted more births than TBAs nationally. However, in some states in Nigeria, TBAs were the main caregivers during childbirths, while in other states, relatives played this role. For example, in Borno, Yobe, Katsina and Sokoto, most births that took place at home were attended by TBAs, whereas in Taraba, Adamawa and Nasarawa, relatives were the main caregivers.

Literature is replete with studies assessing the role of the family in the care of people with special illnesses (autism, Down's syndrome, mental illness, and HIV); however, there is a paucity of data on the role of family as caregivers during childbirth. The contribution of the family during childbirth is largely side-lined. Families are not recognised as caregivers during childbirth; at best, they are seen only as providing physical and emotional support. Consequently, the family as key caregivers during childbirth in medically underserved communities is neglected in policy discourse.

The main aim of this study was to determine the proportion of births assisted by the family in resource-poor settings. This was achieved using a cross-sectional data representative of Nasarawa State. In order to be able to determine the proportion of deliveries assisted by the family in resource-poor settings, we categorised the state according to availability of medical facilities in community of residence. We also explored the demographic profile of women whose births were assisted by the family. In addition, the study examined the determinants of utilisation of skilled birth facilities in Nasarawa State.

Methods

Study setting

This descriptive cross-sectional survey was conducted among women who gave birth between 2011 and 2015 in Nasarawa State, located in the north central region of Nigeria. The 2006 census put the state's population at 1 869 377 people, with females accounting for 49 per cent. With an increasing influx of people into Karu and Keffi local government area, due to its proximity to the country's capital city, Abuja, the state's 2010 population is estimated to be over 2 million people (Nasarawa State Ministry of Health 2010). Like other parts of northern Nigeria, Nasarawa State has some peculiar health challenges, such as a paucity of skilled health workers, inadequate funding, skewed distribution of health facilities, poor facilities, poor access and low utilisation of services among the people (Nasarawa State Ministry of Health 2010). There is also a huge gender disparity in income, education and employment in Nasarawa State. For instance, the literacy level among women was 42.4 per cent compared to 73.8 per cent among men (National Population Commission [Nigeria] and ICF International 2014). The unemployment rate among women is high and consequently women face a huge burden of poor maternal health outcomes (National Population Commission [Nigeria] and ICF International 2014). In 2013, less than half of women gave birth in health facilities, and most births were unattended by skilled health workers (National Population Commission [Nigeria] and ICF International 2014). In Nasarawa State, women face a challenge of both a high fertility rate and high infant and child mortality rates.

Study design and sampling

The exploratory study adopted a descriptive cross-sectional design. This design is appropriate and suitable to achieve the aim of this study because it enables the researchers to estimate the contribution of family during childbirth in medically underserved settings. Using a positivist paradigm, which is based on careful observation and measurement of the objective reality (Creswell 2013), the study developed a numeric measure of contribution of the family during childbirth in medically underserved settings. The descriptive goal of this study is to provide detailed empirical evidence detailing the proportion of births that are attended by family members in relation to available health facilities in places of residence. The data analysed in this study formed part of a larger study—Maternal Outcomes in the Context of Free Maternal Healthcare study (MANCONFREE study)—in which the effects of free maternal health programmes in three Nigerian states were evaluated (Ajayi and Akpan 2017). That study was conducted between May and September 2016. Questionnaires were administered to women who gave birth between 2011 and 2015 in 422 households using a face-to-face interview technique. Trained research assistants fluent in the local language of the participants were engaged for the interviews. A representative sample

size of 422 was determined using the sample size calculator, at a confidence interval of ± 5 , a statistical power of 80 per cent, infinite population and 10 per cent possible attrition. Participants were selected using a two-stage cluster sampling process. The state was first clustered into Enumeration Areas (EAs), and later stratified based on rural, semi-urban and urban areas. Simple random sampling was used to select rural, semi-urban and urban EAs from the list of EAs in the 2006 census, with probability proportional to size. Overall, the study took place in 25 clusters. Every 10th household was visited to recruit participants in each EA until the sample size of 422 was reached. Households with ineligible participants were excluded. Only women who gave birth between 2011 and 2015 were eligible to participate in the study. Women whose first birth was in 2016 or whose last birth was before 2011 were excluded.

Instrument

The instrument used in this study was similar to the NDHS questionnaire used in the 2013 survey. Questions on reproductive health were extracted and modified to fit the objectives of the study. To validate the instrument, a pilot study was conducted among 25 women and a few modifications were made to the instrument after the pilot study. To determine the place of childbirth, participants were asked: “Where did you deliver your most recent baby?” Also, to determine the main caregiver during child delivery, participants were asked: “Who assisted you during the delivery of your most recent childbirth?” and a mutually exclusive response list (including TBA, nurse, doctor, friends, relatives, and no one) was provided from which participants could choose the appropriate response. To determine the demographic characteristics of participants, questions were asked about their age, parity, level of education, income, ownership of mobile phone, bank accounts, use of internet and pattern of watching television.

Operational definition of concepts

In this study, “skilled health facilities” refer to primary health centres, private clinics and government-owned hospitals.

“Skilled birth attendants” refer to accredited health professionals such as midwives, doctors or nurses who have been educated and trained to proficiency in the skills needed to manage normal (uncomplicated) pregnancies, childbirth and the immediate postnatal period, and in the identification, management and referral of complications in women and new-borns.

“Traditional birth attendants” are unskilled and untrained people who assist during child delivery. Traditional birth attendants 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. They usually work in rural, remote and other medically underserved areas.

The term “caregivers” represents varying categories of people who provide care for pregnant women during pregnancy, labour, childbirth and after childbirth. In this study, three categories of caregivers are identified, which are the family, traditional birth attendants and skilled birth attendants. It is important to note that only skilled birth attendants are qualified to treat pregnant women: however, in remote poor settings where skilled birth attendants are unavailable, the family and TBAs provide care for women.

“Caregiving” as used in this study refers to the assistance family members give to pregnant women during labour, childbirth and postnatal care.

“Resource-poor settings” are defined as rural communities lacking social amenities such as hospitals, road networks and access to pipe borne water.

“Medically underserved settings” are defined as any community or village without a health facility. Access to a health facility is critical to good maternal outcomes. In medically underserved communities, women, in most cases poor, are faced with out-of-pocket spending in seeking health care as well as cost of transportation. Even when the money is available, bad road networks and the lack of availability of transportation prevent women from access to skilled birth facilities in neighbouring communities.

Analysis

The data generated through the questionnaire were coded and captured into the Statistical Package for the Social Sciences (SPSS version 24). To ensure accuracy, the data were cleaned to remove possible outliers. Outliers constitute threats to the validity of research (Creswell 2013) and introduce bias to a study. Simple descriptive statistics were used to determine the proportion of women who were assisted by family members during delivery of the baby. Association between demographic characteristics and type of caregiver during childbirth were examined using the Pearson chi-square statistics; and *p-values* less than 0.05 were considered statistically significant.

Ethical considerations

The ethical review committee of the University of Fort Hare approved the study protocol. We also applied for ethical clearance from the Ondo State Ministry of Health by completing the application forms and attaching all supporting documents, including the study protocol. The Ondo State Ministry of Health approved the study. Every participant was informed about the aims and benefits of the study before the questionnaires were administered. Participants were also informed about their right to

withdraw from the study at any time if they felt uncomfortable. Participation in this study was voluntary and participants gave written, informed consent before taking part in the study. Participants were assured of confidentiality verbally and in the written consent forms signed by them. The confidentiality of each participant was ensured through anonymising the questionnaire using serial numbers. There was no intrusion of privacy of participants with regards to information they were asked to provide. In addition, no monetary or material enticement was given to any participants. The study adhered to all relevant ethical guidelines and regulations.

Results

Participants' average age was 28.5 (SD=±6.2), and their mean parity was 2.9 (SD±1.8). The majority of the participants were married during the time of the study and resided in communities where health facilities were available (see Table 1). About half of the participants resided in rural areas. The majority of those in rural areas (78%) did not have access to health facilities. One in five women reported that they had no formal education and only a fifth had completed higher education. Most participants (57.5%) reported that they had no income. Women who resided in places without health facilities were less educated and earned less compared to those who resided in places where health facilities were available.

Table 1: Socio-demographic characteristics of participants by availability of health facility in community of residence

Variables	All n(%)	Availability of skilled health facility in community of residence	
		Yes	No
All participants	411 (100.0)	248 (60.3)	163 (39.7)
Age			
≤20 years	41 (10.0)	13 (31.7)	28 (68.3)
21–25 years	113 (27.5)	65 (57.5)	48 (42.5)
26–30 years	124 (30.2)	77 (62.1)	47 (37.9)
31–35 years	78 (19.0)	57 (73.1)	21 (26.9)
36–40 years	44 (10.7)	30 (68.2)	14 (31.8)
>40 years	11 (2.7)	6 (54.5)	5 (45.5)
Place of residence			
Urban	77 (18.7)	77 (100.0)	0 (0.0)
Semi-urban	125 (30.4)	125 (100.0)	0 (0.0)

Rural	209 (50.9)	46 (22.0)	163 (78.0)
Level of education			
No formal education	85 (20.8)	14 (16.5)	71 (83.5)
Primary	93 (22.7)	39 (41.9)	54 (58.1)
Secondary	142 (34.7)	109 (76.8)	33 (23.2)
Higher degree	89 (21.8)	86 (96.6)	3 (3.4)
Monthly income			
No income	223 (57.5)	132 (59.2)	91 (40.8)
1–20,000 naira	138 (35.6)	84 (60.9)	54 (39.1)
>20,000 naira	27 (7.0)	27 (100.0)	0 (0.0)
Marital status			
Currently married	391 (95.1)	238 (60.9)	153 (39.1)
Formerly married	7 (1.7)	4 (57.1)	3 (42.9)
Never married	13 (3.2)	6 (46.2)	7 (53.8)
Socio-economic status			
Low	150 (38.8)	43 (28.7)	107 (71.3)
Middle	155 (40.1)	121 (78.1)	34 (21.9)
High	82 (21.2)	79 (96.3)	3 (3.7)

Analysis of place of childbirth in Nasarawa State

The analysis reveals gross inequality in access to skilled birth facilities during childbirth in Nasarawa State. Births at home were mostly common in rural areas among women of low socio-economic status and illiterates. As highlighted in Table 2, there was a significant association between level of education and childbirth in skilled birth facilities. Most women without formal education (71.8%) or with only primary education (63.4%) gave birth at home. There was an inverted U association between age and place of childbirth. The utilisation of skilled birth facilities for childbirth increased with an increase in age but declined at age 35 years. It is important to note that 85.7 per cent of births took place in skilled birth facilities in urban areas of Nasarawa State.

Table 2: Bivariate table showing the determinants of utilisation of skilled birth facilities in Nasarawa State

<i>Variables</i>	<i>Skilled Birth n (%)</i>	<i>Home n (%)</i>	<i>PValue</i>
Age groups			
20 and below	17 (41.5)	24 (58.5)	0.026
21–25	59 (52.2)	54 (47.8)	
26–30	77 (63.1)	45 (36.9)	
31–35	55 (70.5)	23 (29.5)	
36–40	24 (54.5)	20 (45.5)	
40 and above	6 (54.5)	5 (45.5)	
Place of residence			
City	66 (85.7)	11 (14.3)	0.000
Town	100 (80.6)	24 (19.4)	
Rural	73 (34.8)	137 (65.2)	
Level of education			
No formal education	24 (28.2)	61 (71.8)	0.000
Primary Education	34 (36.6)	59 (63.4)	
Secondary Education	97 (68.3)	45 (31.7)	
Higher Education	82 (92.1)	7 (7.9)	
Socio-economic status			
Low socio-economic status	41 (27.3)	109 (72.7)	0.000
Middle income	111 (71.6)	44 (28.4)	
High Socio-economic status	75 (91.5)	7 (8.5)	
Availability of health facility			
Yes	200 (80.6)	48 (19.4)	0.000
No	39 (23.9)	124 (76.1)	
Antenatal care visits			
Yes	236 (63.3)	137 (36.7)	0.000
No	2 (6.7)	28 (93.3)	

In the logistic regression, after adjusting for age, level of education, and place of residence, the non-availability of health facilities in the community, the non-use of antenatal care services and low socio-economic status were the independent predictors of home child deliveries (Table 3). Women residing in communities without health facilities were seven times more likely to deliver at home compared to women who reside in communities where there were health facilities. Women who did not visit a health facility for antenatal care services were 13 times more likely to deliver at home compared to women who visited a health facility for antenatal care services.

Table 3: Binary Logistic regression showing predictors of home childbirth

<i>Variables</i>	<i>AOR</i>	<i>CI</i>	<i>p-value</i>
Availability of health facility			
No	7.0	3.9–12.5	0.000
Yes (reference)			
Antenatal care visits			
No	13.2	2.6–67.0	0.002
Yes (reference)			
Socio-economic status			
Low socio-economic status	7.9	3.1–20.3	0.000
Middle income	2.8	1.6–5.1	0.001
High socio-economic status (reference)			

Proportion of births delivered by the family in medically underserved settings

The analysis showed that skilled health workers delivered most births (67.9%) in Nasarawa State. However, over a quarter of births (25.8%) were assisted by family members or relatives compared to only 6.3 per cent assisted by TBAs. In medically underserved settings, over half of the births were assisted by family members as compared to only 12.3 per cent assisted by TBAs (see Figure 1). In contrast, skilled birth attendants assisted with the birth of 89.1 per cent where skilled birth facilities were available. Traditional birth attendants and family members assisted in the delivery of the remaining 10.9 per cent.

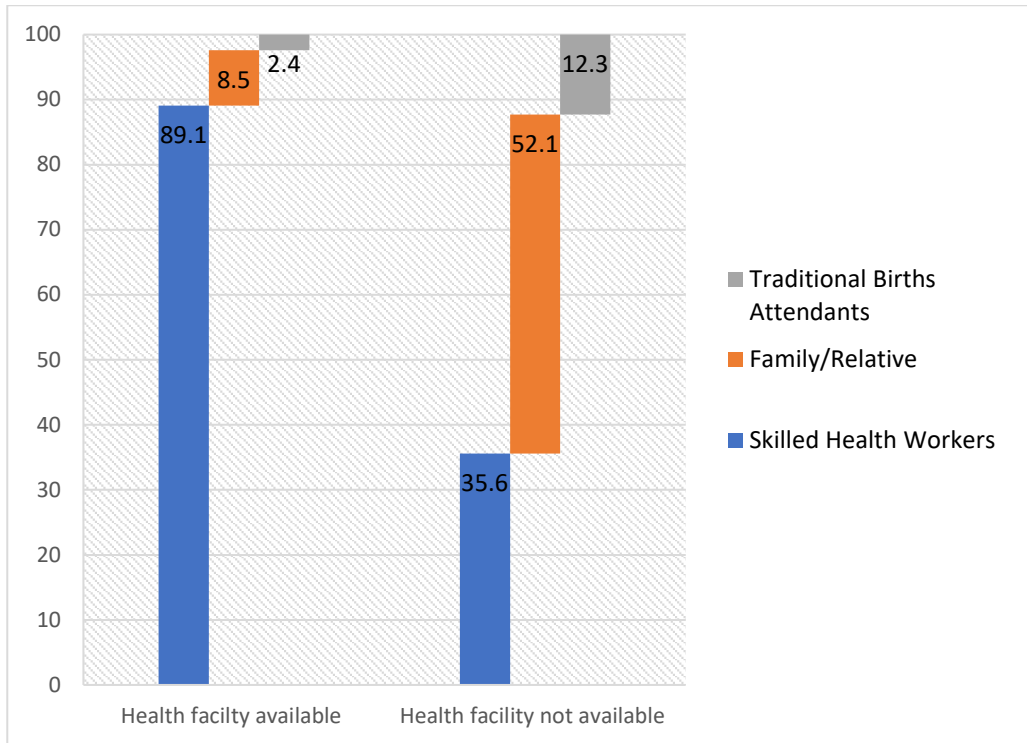


Figure 1: Proportions of births delivered by skilled health workers, TBAs and family by availability of health facility in resident community

In rural areas of Nasarawa State, family or relatives delivered 44.5 per cent of all newborns (Figure 2). Meanwhile, skilled birth attendants assisted with almost all births in urban and peri-urban areas.

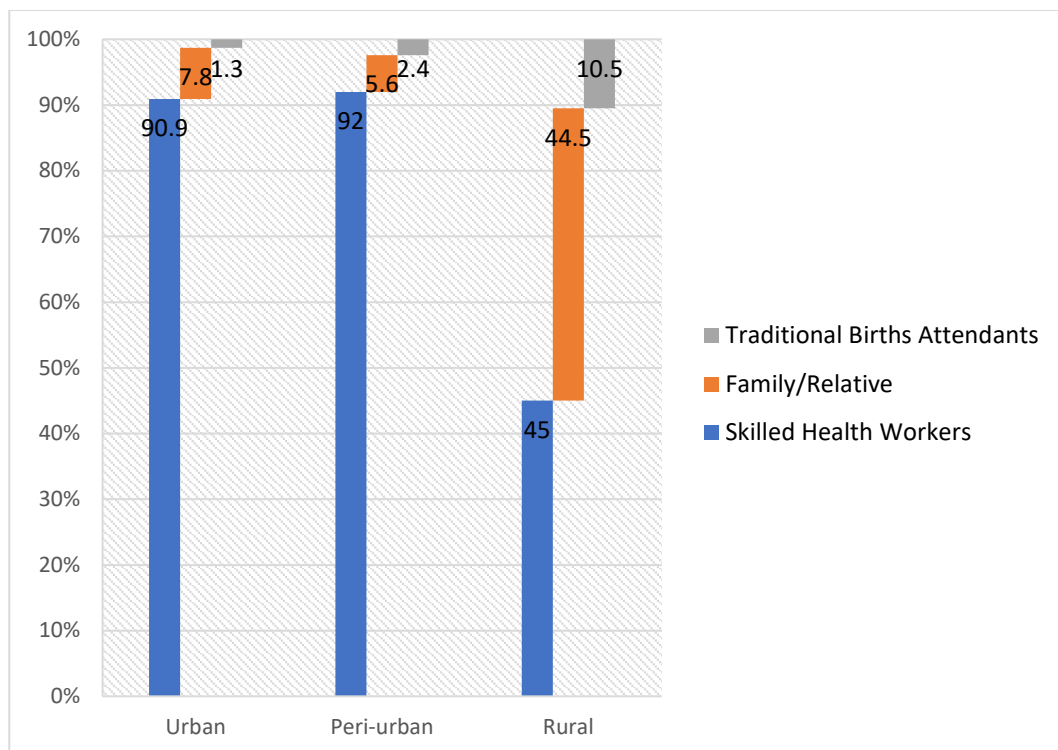


Figure 2: Proportions of births delivered by skilled health workers, TBAs and family by place of residence

Women belonging to the low socio-economic group (48.7%), those who reported no formal education (48.2%) and no income (32.3%), were the most likely to have assistance by a family member compared to women in the high socio-economic group, with formal education and income. Family members or relatives were directly responsible for assisting deliveries of the majority of babies (61.6%) born at home (see Table 4). Traditional Births Attendants (TBAs) only assisted with 15 per cent of home deliveries.

Table 4: Association between demographic characteristics and types of caregivers during childbirth

	<i>Skilled health worker</i>	<i>Family and relative</i>	<i>Traditional birth attendants</i>	<i>p-value</i>
Level of education				
No formal education	30 (35.3)	41 (48.2)	14 (16.5)	<0.001
Primary	48 (51.6)	40 (43.0)	5 (5.4)	
Secondary	113 (79.6)	23 (16.2)	6 (4.2)	
Higher degree	86 (96.6)	2 (2.2)	1 (1.1)	
Income				
No income	142 (63.7)	72 (32.3)	9 (4.0)	<0.001
1–20,000naira	98 (71.0)	27 (19.6)	13 (9.4)	
>20,000	27 (100.0)	0 (0.0)	0 (0.0)	
Socio-economic status				
Low	61 (40.7)	73 (48.7)	16 (10.7)	<0.001
Middle	125 (80.6)	25 (16.1)	5 (3.2)	
High	80 (97.6)	1 (1.2)	1 (1.2)	
Place of childbirth				
Home	40 (23.3)	106 (61.6)	26 (15.1)	<0.001
Skilled birth facilities	239 (100.0)	0 (0.0)	0 (0.0)	

Discussion

The study found that the majority of births in rural areas of Nasarawa State took place at home. Women who gave birth at home mainly resided in medically underserved communities and belong to a low socio-economic group. Also, almost all women who did not visit a health facility for antenatal care services gave birth at home. The finding is consistent with the literature (Asseffa et al. 2016; Edmonds et al. 2012; Feyissa and Genemo 2014; Idris et al. 2006; Ononokpono and Odimegwu 2014; Tsegay et al. 2013; Wagle et al. 2004). Many studies have shown that in rural sub-Saharan Africa most women give birth at home (Asseffa et al. 2016; Edmonds et al. 2012; Feyissa and Genemo 2014; Idris et al. 2006; Ononokpono and Odimegwu 2014; Tsegay et al. 2013; Wagle et al. 2004). The study findings indicate a number of factors associated with the place of childbirth. However, in the logistic regression, the lack of health facilities in rural areas and poverty are the major barriers to facility birth in medically underserved settings. A number of studies have emphasised several factors, such as age of the woman, the husband's consent, the husband's age, lack of privacy in health facilities, women's intention about place of childbirth, perception of labour process and availability of transportation at the time of labour as reasons for home delivery (Asseffa

et al. 2016; Edmonds et al. 2012; Feyissa and Genemo 2014; Idris et al. 2006; Ononokpono and Odimegwu 2014; Tsegay et al. 2013; Wagle et al. 2004). However, many of these factors are interlinked. Indeed, most rural areas in sub-Saharan Africa are mostly medically underserved and people living in rural areas are less educated and earn less compared to those residing in the city. Thus, in order to utilise a health facility, residents of rural areas would often have to travel to areas where facilities are available. Clearly, the availability of health facilities in the community of residence is the most important factor that determines facility delivery as indicated in this study. Uneducated women residing in cities where health facilities are available often utilise skilled birth facilities, thus individual characteristics are not as important as community characteristics. Increasing coverage of primary health care facilities could be more important in improving the use of maternal health services in the medically underserved settings as compared to focusing on factors related to the individual.

This study also determined the proportion of births assisted by family members in medically underserved settings of Nasarawa State. The findings illustrate the significant proportion of births that were assisted by the family in the absence of skilled health workers. The finding is consistent with the finding of Mpembeni et al. (2007) but in contrast to findings from north western Nigeria reported in the NDHS (2014). It appears that TBAs assisted a significant number of births, which take place at home in specific settings in sub-Saharan Africa. Nevertheless, the findings of this study clearly indicate that family members are the main caregivers in many resource-poor settings of Nasarawa State. The finding that the majority of births were attended to by a relative at home, and in settings without health facilities, clearly illustrates that family members are far more likely to assist births than TBAs in some medically underserved settings.

As a result, it is important for policy makers to recognise that family members are the key caregivers during childbirth in many medically underserved settings. Inclusion of family as key caregivers in relevant reproductive health policies is thus recommended as an important strategy for the prevention of maternal mortality in medically underserved settings. In light of the findings presented in this paper, educating women, especially the relatives of pregnant women, about signs of childbirth complications, could prevent needless maternal deaths. This would help relatives to discern when to refer women in need to a health facility. Public health education on childbirth complications is an inexpensive intervention that is bound to produce remarkable results. Needless to say, this should not replace the building of proper health facilities in resource-poor settings.

This study lays an important foundation for more scholarly inquiry into, and policy discourse on, the role of family as childbirth caregivers in medically underserved settings, especially against the backdrop of the relative availability of scholarly studies on the role of TBAs in such settings. The one limitation that must, however, be

highlighted is that this article is based on quantitative (survey) data. Future studies should pay some attention to the extent (and perhaps quality) of care that family provides during childbirth and how such care compares to that of TBAs. A qualitative inquiry might provide useful insights in this regard, especially because, in many medically underserved settings in Nigeria (and elsewhere in Africa), every woman is a custodian of knowledge related to childbirth.

Conclusion

In medically underserved settings, most child deliveries take place at home and are assisted mainly by a family member. The non-availability of health facilities and poverty were the main reasons for home births in these settings. This article concludes that the role of the family in caregiving is not limited to providing social capital and emotional support during childbirth: the family also acts as key caregivers, especially in resource-poor settings. Policy makers must look beyond Traditional Birth Attendants (TBAs) as the only caregivers in resource-poor settings, and must recognise that the burden of care rests on the family. Future studies could adopt a qualitative design to understand the dynamics of family care during childbirth in resource-poor settings.

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