Received 29 October 2018
Revised 17 November 2018
Accepted 26 November 2018

Factors influencing the decision to choose a birth center by pregnant women in Gombe state Nigeria

Baseline survey

Muhammad Basheer Yahya and Tepanata Pumpaibool
College of Public Health Sciences,
Chulalongkorn University, Bangkok, Thailand

Abstract

Purpose – Gombe state in northeast Nigeria records a high prevalence of home deliveries with very low facility deliveries despite the efforts of government and international non-governmental organizations in supporting maternal health services. The purpose of this paper is to assess the factors influencing the decision to choose a birth center by pregnant women in Gombe, Nigeria.

Design/methodology/approach – The design was a cross-sectional study of women from a baseline survey conducted in August 2016 in Gombe state, Nigeria. Data on women groups' utilization of maternal services with a focus on antenatal care, delivery and postnatal care were collected using a structured questionnaire used for household survey conducted in the state. Data for 157 pregnant women from the sample of 750 women (15–49 years) were selected for the purpose of this analysis. Descriptive statistics, bivariate and multivariate analyses were used to determine the factors associated with choice of birth center.

Findings – Religion (AOR = 12.117, 95% CI 1.774–82.741), paid work (AOR = 3.633, 95% CI 1.243–10.615) and identification and knowledge of pregnancy complications (AOR = 4.281, 95% CI 1.054–17.387) were the factors found to be significantly associated with choice of birth center by pregnant women. Age, education, closeness to a facility and decision by husband or woman were not found to be statistically significant.

Originality/value – The significance of disseminating knowledge about pregnancy complications, role of religious leaders and encouraging savings from women earnings need attention of the government to improve facility-based delivery.

Keywords Pregnant women, Antenatal care, Postnatal care, Nigeria

Paper type Research paper

Background

One of the most important contributors to reducing maternal deaths, especially in low resource settings, is the effective management of the stages of labor during pregnancy and the possible complications arising therefrom. Complications of pregnancy and childbirths among adolescent women are leading contributors to maternal deaths in developing countries. This underscores the necessity of giving birth in health facilities with the support of skilled health workers who have the expertise to manage complications and make referrals to the next level of care where appropriate. Increasing the percentage of births delivered in health facilities is an important strategy to reduce maternal deaths[1].

In Nigeria, only about 36 percent of births take place in a health facility while 63 percent of women deliver at home[1]. Gombe state in Northeast Nigeria has poor maternal health indicators in comparison to the Southern part of the country where 71.4 percent of births

Journal of Health Research
Vol. 33 No. 3, 2019
pp. 228-237
Emerald Publishing Limited
2586-940X
DOI 10.1108/JHR-10-2018-0129

take place at home with only 27.6 percent delivering in a health facility[1]. Recent findings from the multiple indicator cluster surveys in 2016–2017, by the National Bureau of Statistics and the United Nations International Children's Emergency Fund puts the percentage of women (15–49 years old) that delivered in the health facility in Northeast Nigeria at 25.8 percent while 74 percent delivered at home. Gombe state recorded 68.4 percent home deliveries and 29.3 percent public sector deliveries[2].

In spite of the state government's initiatives to increase access to essential maternal health services, disseminating key messages on the advantages of facility delivery and pregnancy complications, in addition to the training of health workers on interpersonal communication, home deliveries have persisted and therefore requires a policy solution[3]. Previous studies[4–6] have not established the predictors of choice of birthplace by women in the northeast region but, instead, have focused on the barriers to utilization of maternal services in other regions of the country.

A number of barriers have been found to limit pregnant women from utilizing health facilities as birth centers. Costs of services, transportation to the facility, ability to make decisions on the place of birth and religious and cultural practices are some of the factors found to be influencing the choice of place of delivery among women. Others include the region of residence and education level of the women[4, 6, 7]. In the Nigerian context, Idris *et al.*[8] found that only 24 percent of women delivered in a health facility among women surveyed in a semi-urban northern Nigerian setting citing lack of pregnancy complications and the negative attitudes of health providers as their reasons.

Sudden onset of labor late at night, the absence of transportation and limited options for birth positions were also factors found to promote the high prevalence of home births[9]. A recent qualitative study found factors that discouraged women from giving birth at facilities to include knowledge, attitudes of the women and awareness of labor outcomes, community beliefs and previous birth experience[10]. Decisions taken jointly between the husband and wife were found to significantly favor undergoing delivery in a health facility compared to women taking decisions independently[11].

This study assessed the factors associated with the decision by pregnant women to utilize either health facility, home or other places as centers for giving birth from a baseline survey conducted in Gombe state, Northeast Nigeria.

Methods

Design and sampling strategy

The design was a cross-sectional study of women from a baseline survey conducted in August 2016 in Gombe state, Nigeria. Data on women's utilization of maternal services with a focus on antenatal care (ANC), delivery and postnatal care were collected using an adapted questionnaire from the London School of Hygiene and Tropical Medicine used for their household survey conducted in the state[12].

In total, 750 of 15–49 years, participating in a women's savings group were registered for an empowerment program in two purposefully selected local government areas of the state. All the pregnant women of the savings group members, totaling 157, were selected as the sample size for this analysis.

Statistical analysis

Analysis of the descriptive statistics for the pregnant women was completed. Thereafter, bivariate and multivariate logistic regression models were used to analyze the relationship between the plans for the current pregnancy with two options: plan to give birth in the health facility and plan to give birth in a place other than the health facility, and the independent variables.

The independent variables were socio-economic and demographic characteristics of the women: age, marital status, religion, education, occupation, paid work in the last seven days, previous pregnancy and membership of the women's savings group. Availability and accessibility to the primary health care facilities and also decisions on money spending and health care utilization were included in the bivariate analysis.

All the variables that had a $p < 0.25$ from the bivariate analysis were entered into a multivariate logistic regression model. Data for this study were analyzed using an SPSS statistical package for Social Science version 22.

Ethical consideration

Ethical approval for this study was obtained from the Gombe State Ministry of Health Ethical Committee with approval letter reference: MOH/ADM/S/658/VOL.11/37 dated July 4, 2016.

Results

Table I presents the results of the characteristics of the pregnant women, 46 percent of the women were between the ages of 15 and 24 years and 36 percent between 25 and 34 years. In total, 82 percent were married with the remaining 20 percent in the category of single, widowed or divorced. Muslims constituted 73 percent of the sample while 27 percent were Christians. Only 29 percent of the sample had the ability to read and write in English but 58 percent had the ability to read and write in other languages (Hausa or Arabic). The majority of the women were unemployed (75 percent), 25 percent were recorded as employed while 42 percent reported engagement in paid work in the seven days preceding the survey.

In total, 86 percent of the women reported having been pregnant previously. The majority of them were between 1 and 12 weeks of gestation and 54 percent had received ANC already. About 23 percent had no knowledge of recognizing any signs of pregnancy complications while 23 percent could mention at least one sign. In total, 54 percent were members of the women's saving groups. A primary health care center was available close by to 85 percent of the women, and the major means of getting to the facility for the majority of them (76 percent) was by walking to the facility. Decisions to spend the money earned by the women in 44 percent of cases were taken by their husbands while 17 percent of decisions were taken jointly with their husband with "others" as decision makers totaling 6 percent. Similarly, 44 percent of decisions to utilize health care services were taken by the husbands of the respondents alone and 45 percent of decisions were taken jointly with their husbands. The respondents took only 5 percent of the decisions alone and 6 percent of decisions were taken on their behalf by others. Those that planned to give birth in the health facility constituted 67.5 percent of the sample, with 32.5 percent of them planning to give birth elsewhere.

Table II shows the results of the bivariate analysis completed between the decision to choose a birthplace and independent variables of interest. Nine variables were found to be significantly associated with the decision to choose a health facility as a birthplace. Age (OR = 2.679, 95% CI = 1.215–5.905) and marital status (OR = 3.721, 95% CI = 1.051–13.168) had a significant association with the choice of place of birth. Women between the age of 25 and 34 years were more likely to deliver in the facility compared to those within 15–24 years. Single/widowed/divorced women were three times more likely to deliver in a health facility than married ones. Membership of the women's saving group (OR = 2.177, 95% CI = 1.103–4.297) was significantly associated with the decision to deliver in the facility. Members have two times the odds of choosing a health facility as a birthplace compared to non-members. Religion (OR = 15.454, 95% CI = 3.564–67.007) was also found to have a significant association with the choice of place of birth.

Characteristics	Study sample ($n = 157$)	
	n	%
Age (years)		
15–24	72	45.9
25–34	57	36.3
35–49	28	17.8
Marital status		
Married	128	81.5
Single/widowed/divorced	23	19.5
Religion		
Islam	114	72.6
Christianity	43	27.4
Education		
Ability to read and write in English	46	29.3
Ability to read and write in other languages	91	58.0
Occupation	39	24.8
Paid work in the last seven days	66	42.0
Previous pregnancy	135	86.0
Gestational age (weeks)		
1–12	109	70.3
13–24	19	12.3
⩾25	27	17.4
Antenatal care utilization	85	54.0
Knowledge of pregnancy complications		
Could not mention any sign	36	22.9
1 sign	36	22.9
2 signs	18	11.5
3 signs	26	16.6
⩾4 signs	41	26.1
Membership of women savings group	85	54.0
Availability of primary health care facility	133	85
Time to reach a health facility (minutes)		
⩽30	121	77.1
> 30	36	22.9
Means of transport to health facility		
Walking	119	75.8
Bicycle	2	1.3
Motor vehicle	14	8.9
Motorbike	19	12.1
Donkey/horse/cart	3	1.9
Decision on money spending		
Respondent	52	33.1
Husband/partner	69	43.9
Respondent and husband/partner jointly	27	17.2
Others	9	5.8
Decision on health care		
Respondent	8	5.1
Husband/Partner	69	43.9
Respondent and husband/partner jointly	70	44.6
Others	10	6.4
Plan for birthplace this pregnancy		
Planned to use facility	106	67.5
No plan to use facility	51	32.5

Table I. Characteristics of pregnant women

Variables	Place for giving birth: Health facilities (*n*)	Place for giving birth: Non-health facilities (*n*)	OR	95% CI: Lower	95% CI: Upper
Age (years)					
15–24[ref]	42	30			
25–34	45	12	2.679**	1.215	5.905
35–49	19	9	1.508	0.600	3.788
Marital status					
Married[ref]	86	48			
Single/widowed/divorced	20	3	3.721**	1.051	13.168
Religion					
Islam[ref]	65	49			
Christianity	41	2	15.454***	3.564	67.007
Education					
Ability to read and write in English					
Unable[ref]	71	40			
Able	35	11	1.793*	0.821	3.912
Ability to read and write in Hausa or Arabic					
Unable[ref]	41	25			
Able	65	26	1.524*	0.777	2.991
Occupation					
Unemployed[ref]	77	41			
Employed	29	10	1.544	0.685	3.480
Paid work in the last seven days					
No paid work[ref]	52	39			
Had paid work	54	12	3.375**	1.593	7.150
Previous pregnancy					
No[ref]	5	17			
Yes	101	34	10.100***	3.464	29.451
Gestational age (weeks)					
1–12 [ref]	62	47			
13–24	18	1	13.645**	1.758	105.893
⩾25	24	3	6.065**	1.723	21.351
Antenatal care utilization					
Not received care[ref]	48	24			
Received care	58	27	1.074	0.550	2.099
Knowledge of pregnancy complications					
Could not mention any sign[ref]	12	24			
1 sign	23	13	3.538**	1.340	9.343
2 signs	14	4	7.000**	1.890	25.932
3 signs	21	5	8.400***	2.539	27.789
⩾4 signs	36	5	14.400***	4.496	46.125
Membership of women savings group					
Non-member[ref]	42	30			
Member	64	21	2.177**	1.103	4.297
Availability of primary health care facility nearby					
Unavailable[ref]	21	3			
Available	85	48	0.253**	0.072	0.892

Table II.
Bivariate analysis of the relationship between the decision for choosing birthplace and selected independent variables

(*continued*)

Variables	Place for giving birth		95% CI		
	Health facilities (*n*)	Non-health facilities (*n*)	OR	Lower	Upper
Time to a primary health care facility (minutes)					
$>30^{ref}$	28	8			
⩽30	78	43	0.518*	0.217	1.236
Means of getting to the health facility					
Walking[ref]	82	37			
Using vehicle	24	14	0.774	0.360	1.662
Decision on money spending					
Husband and others[ref]	54	24			
Respondents and jointly decision	52	27	0.856	0.439	1.671
Decision on health care					
Husband and others[ref]	49	30			
Respondents and husband jointly	57	21	1.662*	0.845	3.267

Notes: *$p < 0.25$; **$p < 0.05$; ***$p < 0.001$

Table II.

Other factors that had a significant association in determining the choice of birthplace in the analysis included engaging in paid work within the last seven days of the survey (OR = 3.375, 95% CI = 1.593–7.150). This means that women that had a paid job in the last seven days before the survey were more than three times more likely to deliver in the health facility in comparison with women that did not work. Gestational age of the pregnancy was another significant determinant of the decision to use a facility for birth. Women in their 13–24 weeks of pregnancy (OR = 13.645, 95% CI = 1.758–105.893) and those above 25 weeks (OR = 6.065, 95% CI = 1.723–21.351) had higher odds of using the health facility during delivery. Pregnant women with knowledge of between one and more than four signs of a complication of pregnancy had higher odds of choosing to deliver in the facility as compared to those that did not know to recognize any signs of pregnancy complications.

Availability of a primary health care center near the women's households (OR = 0.253, 95% CI = 0.0072–0.892) and those with previous pregnancies (OR = 10.100, 95% CI = 3.464–29.451) were other significant findings from the bivariate analysis.

Surprisingly, education, the decision on health care and time taken to reach the facility were all not found to be significantly associated with the plan to choose a birth center by the pregnant women involved in this study.

The result of the multivariate analysis was presented in Table III. Three variables out of those entered in the model were found to be significant determinants or predictors of choice of birthplace. These include religion, paid work in the last seven days and knowledge of at least one pregnancy complication. Pregnant women of Christian faith (AOR = 12.117, 95% CI = 1.774–82.741) had higher odds of choosing a health facility as their birth center than their Muslim counterparts. Pregnant women who engaged in paid work seven days before the survey (AOR = 3.633, 95% CI = 1.243–10.615) had four times higher odds of delivering in the health facility than pregnant women without paid work. In the same vein, the result found that the more knowledge a woman had of pregnancy complication, the higher her likelihood of delivering in the facility. Women who knew one sign of pregnancy-related complication (AOR = 4.284, 95% CI = 1.054–17.387) were four times more likely to deliver in the facility. Women with knowledge of more than four signs (AOR = 11.472, 95% CI = 2.001–65.768) had 11 times higher odds of delivery in the health facility as compared with ones without any knowledge.

Variables	*B*	Adjusted odds ratio (AOR)	95% CI Lower	Upper
Age (years)				
15–24[ref]				
25–34	−0.093	0.911	0.265	3.132
⩾35	−0.122	0.885	0.192	4.077
Marital status				
Married[ref]				
Single/widowed/divorced	−0.498	0.607	0.113	3.271
Religion				
Islam[ref]				
Christianity	2.495	12.117*	1.774	82.741
Education				
Ability to read and write in English	−0.335	0.716	0.175	2.921
Ability to read and write in Hausa/Arabic	−0.750	0.472	0.164	1.363
Paid work in the last seven days				
No paid work[ref]				
Had paid work	1.290	3.633*	1.243	10.615
History of previous pregnancy	0.723	2.061	0.394	10.771
Gestational age (weeks)				
1–12[ref]				
13–24	2.338	10.366	0.935	114.959
⩾25	1.428	4.172	0.712	24.462
Identification of pregnancy complications				
Could not identify[ref]				
1 sign	1.454	4.281*	1.054	17.387
2 signs	2.029	7.603*	1.435	40.275
3 signs	2.031	7.621*	1.333	43.643
⩾4 signs	2.440	11.472**	2.001	65.768
Membership of women savings group	1.066	2.903	0.806	10.453
Availability of primary health care facility nearby	0.990	2.691	0.439	16.501
Time to reach a health facility (minutes)				
>30[ref]				
⩽30	−0.414	0.661	0.175	2.495
Decision on health care utilization				
Husband and others[ref]				
Respondents and jointly decision	−0.605	0.546	0.161	1.856

Notes: *$p < 0.05$; **$p < 0.01$

Table III. Multiple logistic regression analysis results showing odds ratios of factors associated with the decision to choose birthplace

The multivariate analysis did not find any association between age, marital status, education, history of pregnancy, gestational age, membership of women's savings group, availability of health facility nearby, time to reach primary health care nearby and decision on health care as determinants of the choice of birthplace among the pregnant women.

Discussion

The result of the bivariate analysis found nine independent variables to be associated with the choice for birthplace by pregnant women in this study. Age, marital status, membership of the savings group, religion and gestational age were all significantly associated with the choice of health facility as a birthplace. Others included the availability of health facility nearby, paid work

in the seven days preceding the survey, having previous pregnancies and knowledge of the signs of pregnancy complications was also significantly associated with the choice of birthplace.

Women belonging to the savings groups had twice the odds of choosing a health facility as a birthplace compared to non-members. This could be explained by the access members of saving groups have for loans from their savings to pay all costs associated with delivery, which non-members did not have. Availability of a health facility within easy proximity was also found to be a significant factor in choosing to give birth in the health facility. In this study, women with an available health facility close to them were found to have lower odds of giving birth in a health facility compared to those without one near them. This finding contrasts with a similar study in Bangladesh where the proximity of a health facility near the household was found to be a predictor for its use by women experiencing uncomplicated pregnancies[13]. However, this is in agreement with the findings of Chowdhury *et al.*[14] where the difference between institutional deliveries and home deliveries was based more on wealth than closeness to health services. The age of the pregnant women was found in some other studies to be associated with facility delivery. Older women may be more at risk of pregnancy complications than younger ones and, therefore, more likely to deliver in a facility on the advice of health workers[15].

Religion was also found to be a significant determinant of the place of delivery in this analysis. Christian pregnant women were found to have much higher odds of giving birth in a facility than their Muslim counterparts. This can be explained by the difference in beliefs and attitudes toward health care from women of these faiths. Other studies found the impact of religion, ethnicity and traditional beliefs to have large differences in determining the use of facilities for delivery while others found mixed results or no differences[16]. Some studies in Sub-Saharan countries found an association between traditional and Islamic practices and facility delivery. Some adherents of these beliefs in some countries were found to be less likely to deliver in a facility[17]. Religion remains a statistically significant determinant in the choice of place of delivery[18].

Paid work in the last seven days preceding the survey was found to be statistically significant in this study (OR = 3.375, p-value = 0.001). This may have to do with the issue of having some income to save for the purpose of delivery[10]. The gestational age of the pregnancy (OR = 3.223, p-value = 0.001) was also a significant factor in choosing a birth facility over home delivery. This study indicated that women with knowledge of at least one sign of the complications of pregnancy were found to be four times more likely to deliver in a health facility. This agrees with the findings of studies in Tanzania and Zimbabwe where women with previous pregnancy complications desired to choose a health facility for birth[19].

Women with a history of more than three previous pregnancies were found to be more likely to have their births delivered by skilled personnel in a health facility. The same applies to the knowledge of delivery practices. The lower the knowledge of a mother on safe delivery, the higher her odds of her delivery attended to by unskilled personnel outside the facility[20].

The non-significance of education and decision of women in utilizing health care was surprising considering the fact many studies found their significance in choosing a birthplace[13, 15, 16, 21]. The husband's decision or preference was found to be a significant factor in deciding where pregnant women went for ANC or delivery[22].

The significant variables found to be influencing the choice of birthplace in the multivariate analysis in this study were religion, paid work and knowledge of at least one or more signs of pregnancy complications. Many studies found the association of these three factors (religion, women's paid work and previous complications of pregnancy) with the choice of facility delivery. However, the association of membership of the savings group with the place of delivery, even though significant in the bivariate analysis, was not found in the literature in the context of Nigeria, making it an important topic for further research. Other studies in Asia, however, found membership of savings groups to be an innovative and promising way to improve utilization of maternal health services[23–25].

Although the education of the women was not found to be significant in deciding their choice of birthplace in this study, the influence of other languages (Hausa, Arabic) which the majority of the women could read and write in should not be neglected. Information and materials regarding maternal health should not be limited to English alone but need translation to these local languages for effective dissemination and mass mobilization.

With the recognition and knowledge of danger signs as predictors of the choice of facility delivery, we recommend that key maternal health messages with pregnancy complications be widely disseminated during ANC sessions and radio programs in the local languages.

We recommend further research on the impact of membership of women's saving groups and other attitudinal characters of women to improve facility delivery thereby improving maternal health in the state.

This study had limitations, which need to be noted. It was difficult to confirm the pregnancy status of a woman in the first or second month of her pregnancy without a pregnancy test and so we relied on what they reported to us. Due to some cultural norms in the area, some women are shy to indicate they are pregnant to an outsider, especially if it was their first pregnancy.

Conclusion

Women in paid employment use their earnings to pay for maternal services easily. We recommend that the government enacts a policy that will support the establishment of women's savings groups across the state, with a special emphasis on rural areas where costs and distances are barriers preventing women from giving birth in the facility. This will allow women to have an easy access to loans from their savings to pay for maternal and child health care.

Religious leaders have an active and vital role to play in improving facility delivery through sermons. Intensifying the dissemination of social mobilization messages on the dangers of pregnancy complications mostly associated with home births has the potential to increase facility-based delivery. These measures, when implemented, may improve facility-based births in the state as evident from the findings of this study.

References

1. Macro IC. Nigeria demographic and health survey Abuja: National Population Commission 2013.
2. National Bureau of Statistics [NBS]. United Nations Children's Fund [UNICEF]. Multiple Indicator Cluster Survey 2016–17, survey findings report. Abuja: National Bureau of Statistics and United Nations Children's Fund; 2017.
3. Peters DH, Garg A, Bloom G, Walker DG, Brieger WR, Rahman MH. Poverty and access to health care in developing countries. Ann N Y Acad Sci. 2008; 1136(1): 161-71.
4. Adamu YM, Salihu HM. Barriers to the use of antenatal and obstetric care services in rural Kano, Nigeria. J Obstet Gynaecol. 2002 Nov; 22(6): 600-3.
5. Wanjira C, Mwangi M, Mathenge E, Mbugua G. Delivery practices and associated factors among mothers seeking child welfare services in selected health facilities in Nyandarua South District, Kenya. BMC Public Health. 2011 Dec; 11(1): 360.
6. Ononokpono DN, Odimegwu CO. Determinants of maternal health care utilization in Nigeria: a multilevel approach. The Pan Afr Med J. 2014; 17(S1).
7. Nunu WN, Ndlovu V, Maviza A, Moyo M, Dube O. Factors associated with home births in a selected ward in Mberengwa district, Zimbabwe. Midwifery. 2019 Jan; 68: 15-22. doi: 10.1016/j.midw.2018.09.013
8. Idris SH, Sambo MN, Ibrahim MS. Barriers are the utilization of maternal health services in a semi-urban community in Northern Nigeria: the clients' perspective. Niger Med J. 2013 Jan; 54(1): 27-32. doi: 10.4103/0300-1652.108890
9. Ashimi AO, Amole TG. Prevalence, reasons and predictors for home births among pregnant women attending antenatal care in Birnin Kudu, North-west Nigeria. Sex Reprod Healthc. 2015 Oct; 6(3): 119-25. doi: 10.1016/j.srhc.2015.01.004

10. Nyakang'o SB, Booth A. Women's perceived barriers to giving birth in health facilities in rural Kenya: a qualitative evidence synthesis. Midwifery. 2018 Dec 1; 67: 1.
11. Rao N, Esber A, Turner A, Chilewani J, Banda V, Norris A. The impact of joint partner decision making on obstetric choices and outcomes among Malawian women. Int J Gynaecol Obstet. 2016 Oct; 135(1): 61-4. doi: 10.1016/j.ijgo.2016.03.019
12. Marchant T. Maternal and newborn health care. Baseline findings from Gombe State, Nigeria. Interactions between families and frontline workers (their frequency, quality, and equity), and coverage of interventions for mothers and newborns. London: IDEAS Project; London School of Hygiene & Tropical Medicine; 2013.
13. Edmonds JK, Paul M, Sibley L. Determinants of place of birth decisions in uncomplicated childbirth in Bangladesh: an empirical study. Midwifery. 2012 Oct; 28(5): 554-60. doi: 10.1016/j.midw.2011.12.004
14. Chowdhury ME, Ronsmans C, Killewo J, Anwar I, Gausia K, Das-Gupta S, *et al.* Equity in use of home-based or facility-based skilled obstetric care in rural Bangladesh: an observational study. Lancet. 2006 Jan 28; 367(9507): 327-32.
15. Gabrysch S, Campbell OM. Still too far to walk: literature review of the determinants of delivery service use. BMC Pregnancy and Childbirth. 2009 Dec; 9(1): 34.
16. Moyer CA, Mustafa A. Drivers and deterrents of facility delivery in Sub-Saharan Africa: a systematic review. Reprod Health. 2013 Dec; 10(1): 40.
17. Sahoo J, Singh SV, Gupta VK, Garg S, Kishore J. Do socio-demographic factors still predict the choice of place of delivery: a cross-sectional study in rural North India. J Epidemiol Glob Health. 2015 Dec; 5(4): S27-34. doi: 10.1016/j.jegh.2015.05.002
18. Mpembeni RN, Killewo JZ, Leshabari MT, Massawe SN, Jahn A, Mushi D, *et al.* Use pattern of maternal health services and determinants of skilled care during delivery in Southern Tanzania: implications for achievement of MDG-5 targets. BMC Pregnancy and Childbirth. 2007 Dec; 7(1): 29.
19. Faye A, Niane M, Ba I. Home birth in women who have given birth at least once in a health facility: contributory factors in a developing country. Acta Obstet Gynecol Scand. 2011 Nov; 90(11): 1239-43. doi: 10.1111/j.1600-0412.2011.01163.x
20. Onah HE, Ikeako LC, Iloabachie GC. Factors associated with the use of maternity services in Enugu, Southeastern Nigeria. Soc Sci Med. 2006 Oct; 63(7): 1870-8.
21. Ewa EE, Lasisi CJ, Maduka SO, Ita AE, Ibor UW, Anjorin OA. Perceived factors influencing the choice of antenatal care and delivery centres among childbearing women in Ibadan North South-Western, Nigeria. Ethiopian J Environ Stud Manag. 2012; 5(4): 373-83.
22. Fotso JC, Ezeh AC, Essendi H. Maternal health in resource-poor urban settings: how does women's autonomy influence the utilization of obstetric care services? Reprod Health. 2009 Dec; 6(1): 9.
23. Shaikh BT, Noorani Q, Abbas S. Community based saving groups: an innovative approach to overcome the financial and social barriers in health care seeking by the women in the rural remote communities of Pakistan. Archives of Public Health. 2017 Dec; 75(1): 57.
24. Noorani QA, Azam I, Shaikh BT, Ranasinghe T, Abbas S, Wali S, *et al.* Role of community-based savings groups (CBSGs) enhancing the utilization of community midwives in Chitral district of Pakistan. BMC Pregnancy Childbirth. 2013 Dec; 13(1): 185.
25. Hytti L. Fluid cash and discordant households: exploring perceptions of and attitudes towards saving for childbirth: a qualitative study in Pallisa district, Uganda. International Maternal and Child Health, Department of Women's and Children's Health, Uppsala: Uppsala University; 2015.

Corresponding author
Muhammad Basheer Yahya can be contacted at: mybasheer@yahoo.com