Factors Influencing Utilization of Health Facility Delivery: A Case of Abobo Woreda of Gambella Regional State, Ethiopia

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Abstract

Introduction: World Health Organization estimates that about 536,000 women of reproductive age die each year from pregnancy related complications. South Eastern Asia and Sub-Saharan African countries contribute about 87% total maternal deaths globally. Ethiopian demographic and health survey 2011 report indicated that the MMR was 676 per 100,000 live births. This study was done to establish factors influencing utilization of health facility delivery in Abobo Woreda. **Methods:** The study design was a cross sectional study. The study sample comprised of 422 women who had delivered within the last 2 years before this study. Cluster sampling was used to sample mothers seeking MCH services from all health centers in the Woreda. Data collection was done using structured questionnaire. Data was analyzed using SPSS version 20. **Findings:** Most of the study participants were from the age group 15 – 24 with the mean age 24.13. Majority of the study participants 224(53.1%) were from Agnwak ethnic group, 204 (48.3%) had primary educated. Majority of the respondents 338 (80.1%) had a monthly income of more than 1,000 Birr. Most 220(53.2 %) had travelled over 5 kilometers to reach the nearest health facility. Nearly all respondents 398(94.3%) said they received free maternal health services as per government policy. However, only 36(8.5%) had given birth at health care facility. Reasons for home delivery included; unavailability of transportation 183(43.4%), unexpected delivery 110(26.1%), lack of family support for 97(23%), fear of health professionals 23(5.5%), lack of health professionals 5(1.2%), and lack of funds 4(0.9%). The younger the women OR = 1.30 (95% CI 0.66, 2.59), the friendliness of the health professionals to women OR = 1.42 (95% CI 0.18, 11.03), a mothers perceived benefits of health facility delivery OR = 1.05(0.56, 2.00) were more likely to give birth at health facility.. **Conclusion:** Health facilities should enhance women's awareness about benefit of health facility delivery, improve access of transportation, and improve access to health centers

Keyword: *health facility delivery, home delivery, Ethiopia, Birth, Agnwak ethnic group*

Introduction

The strengthening of health systems in low and middle-income countries is central to the global effort to promote economic and social development through universal health coverage in terms of accessibility, equity, quality, affordability, adequacy of necessary drugs and materials, good management and skilled work force ((USAID, 2015) It is clear how one weak health system pillar can negatively affect all the other pillars. If a health system has well-trained human resources but constant stock outs of medicines, it cannot deliver effective care. If services are of high quality but clients cannot afford them, they will not receive them when in need. If all services are free but facilities are understaffed, or providers are not skilled, mothers will not come for delivery service.

This study focused on the health services delivery pillar, and narrowed down to maternal health services. Increasing maternal health service uptake is one of the key and proven interventions to reduce maternal mortality rate. Giving birth in a health institution under the care and supervision of trained health care providers promotes child survival and reduces the risk of maternal mortality (Demissie, 2012).

Globally 278,000 mothers die from complication of pregnancy and child birth. Developing countries continue account for 99% of total maternal death, from these estimated deaths, South Asia and Sub-Saharan Africa counting for 87% of the global death (WHO, 1990); (Kamal, 2013). In developed world the health facility delivery service utilization is very high but in most of developing countries these remains very low, even though there is a difference between regions (Mwaniki, 2014). Unfortunately, maternal mortality rate (MMR) remains unacceptably high in most of the developing world, in fact, an estimated 358,000 maternal deaths occurred worldwide in 2008 of which sub-Saharan Africa and South Asia accounting for 87% (Mekonen, 2015). The fifth in the list of the Millennium Development Goals (MDGs) most of Sub-Saharan countries were not on track for meeting this target (Kamal, 2013).

Ethiopia has one of the highest maternal mortality rates in the world. According to Ethiopian demographic and health survey 2011 report, the maternal mortality rate was 676 per 100,000 live births. Postpartum hemorrhage was the cause of 11% of all maternal deaths (Mekonene, 2015). This, in fact, was due to direct obstetric complications resulting from home delivery and a delay in arriving to the health centre. Home delivery is a common practice in many developing countries including Ethiopia (90%) while in Malawi at 42%, in Nepal 69%, in Zaire 70% and in Pakistan 74% (UNFPA 2000-2011, 2012).

Looking at Ethiopia, in Oromia region 95.9% of deliveries were at home, in Amhara region 89.3% and in Tegray region 87.7%. Health facility delivery in Ethiopia was only 9% in the public service and 1% in private settings; this means that nine out of ten women deliver at home (Tesfaye, 2014). It is only in Africa that there are 280 million women of reproductive age (15-49 years old) and in Ethiopia, this group represents 55.2% of the total population. The focused antenatal care (ANC) coverage in Ethiopia is only 19%, and overall health facility delivery at 10% among all pregnant women according to Odo (2014).

It is clear that most of home deliveries have many risks but particularly more so in areas where severe anemia is high due to malaria, neonatal tetanus, sepsis of both mother and child and maternal and neonatal death are not uncommon. Despite these well-known risks factors, health facility delivery service uptake is still very low. This study is crucial in identifying the common reasons for women not going to deliver in health facilities and to understand the gaps that are to be filled in order to increase health facility delivery service utilization. The purpose of this study was to assess how the predisposing factors, enabling factors, health facilities factors and government policy affect the service utilization for health facility delivery in Abobo Woreda.

METHODS

Research Design: This was a cross-sectional study among women who had history of delivery within the last two years in Abobo woreda of Gambella region, Ethiopia. Data collection took place from April 1, 2016 to May 1, 2016. This study was conducted in Abobo woreda in Gambela region of Ethiopia. Abobo woreda is located 825 kilometer away from the capital city of Ethiopia, Addis Ababa. According to the 2007 Ethiopian Population and Housing Census, the woreda has a total population size of 31209 [Bacha K, Melesse K, Hunde A and Regassa T., 2014].

Sampling Procedure: From a total of 3 zones found in the Gambela region in Ethiopia, Agnewa zone, which comprises of 6 woredas, was selected by simple random sampling method. Out of the six woredas found in the Agnewa zone, Abobo wereda was randomly selected. A sample of 422 women was calculated from a target population of 10,890 women in age group 15 – 49 years who had history of delivery within the last two years in the Abobo woreda. The sample of women was then allocated proportionally for all 16 kebeles (the smallest administration unit in Ethiopia) in the Woreda. For purpose of proportionate sampling, the total number of deliveries recorded in all the 16 kebeles during the last two years before the data collection period was considered. Finally, systematic random sampling technique was used to draw respondents from each cluster/Kebels.

Study variables: These were *health facility delivery* **;** measured from the question did you given birth at health facility or home in your recent delivery **;** *Predisposing factors*: age, educational status, ethnic group, occupation, religion and monthly income of the women**;** *Enabling factors:* physical access/distance to health facility, transportation access, attitude of women towards maternal service in the health care facility, awareness about benefit of health facility delivery and previous exposure at health facility. *Health Workers factors:* The health facility factors approach of health professionals towards women; *Governmental policy:* Governmental policy factors free maternal health service.

Data Collection Procedures: A structured questionnaire was used as the data collection tool. Initially the questionnaire was prepared in English and translated to the local language "Agnuwakigna." To keep its consistency, the questionnaire was translated back to English. The data collectors were health care providers who speak local language "Agnuwakigna", Amharic and English language fluently. Then, the research assistants were trained on how to collect the data. A pretest was done on 5% of the sample size (22 study participants) three days before the actual data collection date in other woreda of the zone and necessary correction were done after a validity and reliability test.

Data Management: The data was entered, cleaned, and analyzed using SPSS version 20. Double entry was done to keep the integrity of the data. Descriptive statistics was used to describe the study variables. The data was described in terms of frequency, percentage and means for relevant variable. The variables were tested for association by logistic regression analysis (both bivariate and multivariate logistic regression analysis) by using 95% CI, $P < 0.05$ as a cutoff point of significance level.

Ethical consideration: Ethical clearance letter was obtained from the Scientific Research and Ethics Committee of Kenya Methodist University and from the Regional and Zonal Health Office of Gambela Region of Ethiopia. Verbal consent was obtain study participants. The purpose and goal of the study was described to all participants in the study and the right to withdraw the interview at any time. No compensation was considered for all study participants.

Results

Predisposing Factors and Health Facility Delivery

A total of 422 women participated in the study with response rate of 100%. The mean age of women who participated in the study was 24.13 ± 4.34, this comprised of almost half (49.5%) of the respondents **(Table 1).** Moreover, majority 53.1% and 96% of the respondents were from Agnuwak ethnic group and Christian religion followers respectively. Regarding their educational status, majority 48.3% of respondents had completed their primary education while about 23% of them were illiterate (unable to read and write). Furthermore, almost all of women were unemployed 97.6% and married 98.6%.

Regarding their monthly income, 80.1% of the respondents earn more than 1000 Ethiopian traditional birr monthly income

The majority 47.9% respondents lived less than 5km away from the health facility while a significant number 26.8% lived more than 5km away from the health facility. Regarding their access to means of transport almost all 98.3% of the respondents had no access to transport means to the health facility. Almost all 98.6% of the respondents had history of maternal health care service utilization before the data collection. Further, more than 90% responded that maternal health service were free and health professionals approach to women was friendly. Majority of the respondents 326 (73.3%) agreed that the skills health providers have were very good. Skill and knowledge of the health professionals was vital for the mothers going to the health facility for the delivery service. The mothers were going to the health facility to get better care and service, so the health professionals have to be skillful in order to avoid complications that may affect seriously mothers and/or neonates. As it was mentioned 406 (96.3%) were happy about the service they had received and rated the attitude of the health professional as very friendly, whereas only 16 (3.8%) indicated that the staff were not friendly.

Table 1: Association of Predisposing Factors and Place f Delivery *(n= 422)*

Variable	Frequency (%)	Place of delivery (frequency)		OR[95%CI]	X^2	P-value
		Health facility	Home			
Age					0.57	0.45
15 - 24	209(49.5)	20	189	1.30[0.66, 2.59]		
25 - 34	213(50.5)	16	197	**		
Ethnic group						
Amhara	28(6.6)	4	24	1.44[0.29, 7.13]	1.30	0.70
Kembata	141(33.4)	11	130	0.73[0.19, 2.81]		
Agnuwak	224(53.1)	18	206	0.76[0.21, 2.75]		
Other	29(6.9)	3	26	**		
Religion					0.22	0.63
Christian	405(96)	15	371	0.69[0.15, 3.13]		
Muslim	17(4)	2	34	**		
Marital status				__ __	1.08	1.00
Unmarried	6(1.4)	6	36			
Married	416(98.6)	0	380			
Educational Status					3.26	0.29
Not read and write	97(23)	8	89	1.03[0.36, 2.96]		
Read and write	34(8.1)	6	28	2.45[0.76, 7.91]		
Primary school	204(48.3)	15	189	0.91[0.36, 2.31]		
Secondary school & above	87(20.6)	12	75	**		
Occupation				__ __	1.81	1.00
Unemployed	412(97.6)	36	376			
Employed	10(2.4)	0	10			
Monthly income in Birr					1.42	0.22
>1000	338(80.1)	26	312	0.62[0.29, 1.34]		
≤1000	84(19.9)	10	74	**		

Note: *Statistically significant at 95% CI, $p<0.05$

Utilization of Facility Delivery

Regarding the perception of the respondents towards the importance of health facility delivery service and its benefit; almost all 99.5% responded it is important. To illustrate more, almost three quarter (64.9%) indicated the importance being to get care for new born and mother, almost half (49.1%) being to prevent newborn and maternal complications and more than 90% responded to control bleeding that

may occur during labour and delivery respectively. A third of the respondents (32.5%) responded to get help in time of prolonged and/or complicated labor and 33.6% to get referral to the next higher level health care facilities respectively.

This study revealed majority of the women who participated in the study had given birth at home. Reasons that were given of home delivery were ; unavailability of transportation (43.4%), unexpected urgency of labour (26.1%), lack of family support (23%) and others (fear of health professional, unavailability of health professionals in the health care facility and lack of money) (7.5%).

Logistic Regression Analysis

The unadjusted logistic regression analysis showed that women aged 15 – 24 [OR = 1.30(95% CI 0.66, 2.59)], women residing from Amhara ethnic group [OR = 1.44(95% CI 0.29, 7.13)] were more likely to give birth at health facility. Likewise, women who felt health care professionals approach was friendly [OR = 1.42(95% CI 0.18, 11.03)], women who felt health facility delivery benefits the newborn and mother [OR = 1.40(95% CI 0.69, 2.79)], and women who believed that health facility delivery prevented labour and delivery related complications [OR = 1.36(95% CI 0.68, 2.73)] were more likely to give birth at health facility.

Table 2: Association of Enabling Factors and Place f Delivery *(n= 422)*

Variables	Frequency (%)	Place of delivery (frequency)		OR[95%CI]	X^2	P - value
		Health facility	Home			
Distance of women's home from health center.					0.85	0.65
Less than 5 km	202(47.9)	16	186	0.72[0.33, 1.59]		
Almost 5 km	107(25.4)	8	99	0.68[0.27, 1.74]		
Greater than 5km	113(26.8)	12	101	**		
Transportation access to health center.					1.26	1.00
Have access	7(1.7)	0	7	__ __		
Not have access	415(98.3)	36	379			
Reasons to prefer home deliver					3.16	0.14
Unavailability of transportation	183(43.4)	17	166	1.18[0.54, 2.61]		
Unexpected urgency of labour	110(26.1)	10	100	0.02[0.00, 1.04]		
Lack of family support	97(23.0)	8	89	1.04[0.40, 2.68]		
Other	32(7.5)	1	31			
Women ever took any maternal health service from health institution.					0.42	0.48
Yes	416(98.6)	35	381	0.46[0.05, 4.04]		
No	6(1.4)	1	5	**		
Approach of health professionals towards women					0.12	0.74
Friendly	406(96.2)	35	371	1.42[0.18, 11.03]		
Not friendly	16(3.8)	1	15	**		
Cost of maternal service in the health center					0.46	0.48
For free	398(94.3)	33	365	0.63[0.18, 2.23]		
Not free	24(5.7)	3	21	**		
Attitude of women towards maternal service in the health institution					0.36	1.00
Important	420(99.5)	36	384	__ __		
Not important	2(0.5)	0	2			
Benefits of delivery at health facility.						
To get care for new born and mother					0.85	0.35
Yes	274(64.9)	21	253	1.40[0.69, 2.79]		
No	145(35.1)	15	130	**		
To prevent new born and/or maternal complication					0.78	0.38
Yes	207(49.1)	18	189	1.36[0.68, 2.73]		
No	215(50.9)	21	194	**		
To control bleeding					0.56	0.50

Yes	386(91.5)	36	364	0.50[0.07, 3.79]		
No	22(8.5)	1	21	**		
To get help in prolonged and/or complicated labour					1.47	0.22
Yes	137(32.5)	15	122	0.48[0.32, 1.30]		
No	285(67.5)	21	264	**		
To get referral to the next higher level					0.28	0.95
Yes	142(33.6)	13	129	__ __		
No	279(66.4)	23	256			

Note: *Statistically significant at 95% CI, p<0.05, Reference **, Reason for attending home delivery, other includes: fear of health professionals, lack of health professional and lack of money.

More than 90% of the respondents had given birth at home in their recent birth. However, about 74.2% of the women were satisfied with maternal health care services provided to them in their previous visit before the study, **Figure 1.**

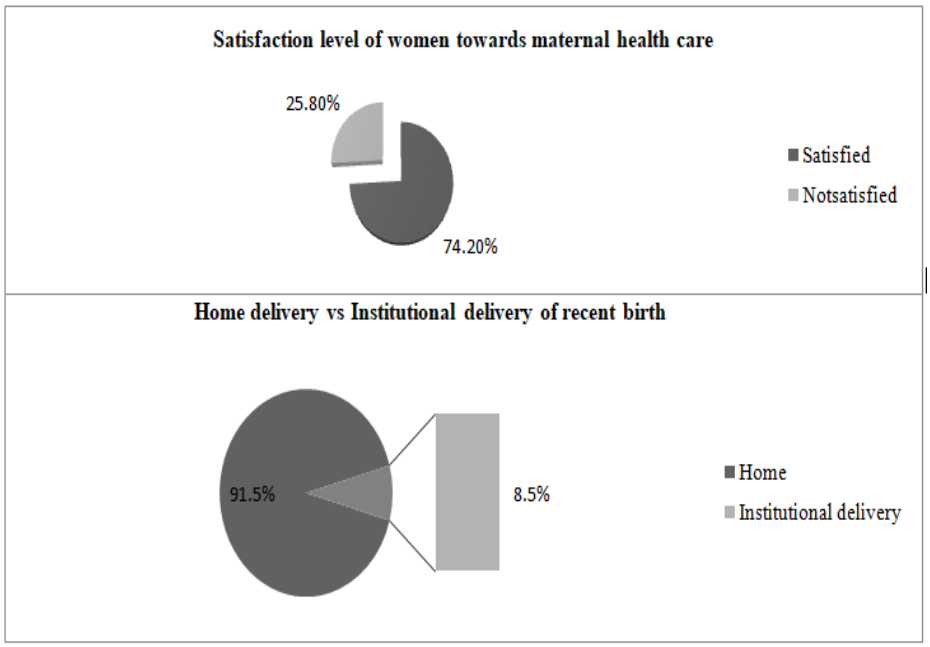

Figure 2: Percentage of health facility delivery and Satisfaction of women towards maternal health care service, N= 422

Women who felt health facility delivery benefits a mother in the time of complicated and/or prolonged labour [AOR = 1.05(0.56, 2.00)] were more likely to give birth at health facility while those who felt there was unavailable transport to access health facility [AOR = 0.68 (0.54, 2.61)] were less likely to give birth at health facility, **Table 3.**

Table 3: Multivariate Logistic Regression Analysis: Factors Associated With Place of Delivery (n=422)

Variable	β	SE	Wald χ^2	OR(95%CI)	P-Value

Benefit of health facility delivery will be in time of complicated and/or prolonged labour	-0.05	0.33	0.26	1.05[0.56, 2.00]	0.87
Reason to prefer home delivery; unavailability of transportation to health facility	1.17	0.41	0.17	0.68[0.54, 2.61]	0.68

*****Statistically significant at 95% CI, p<0.05, Reference = **

Discussion

It is clear that health facility delivery can reduce labour and delivery related complications that may lead to maternal and/or newborn complications/death (Ethiopian Federal Ministry of Health., 2011, Ethiopian Federal Ministry of Health., 2016). Nevertheless, according to the report of Ethiopian Demographic and Health Survey (EDHS) 2011 and 2016, the extent of health facility based delivery is too stumpy in Ethiopia (Ethiopian Federal Ministry of Health., 2011, Ethiopian Federal Ministry of Health., 2016).

In this study, only 8.5% of the women who participated in the study indicated to have given birth at health a facility and this is comparable with the prevalence of health facility based delivery practice of 10% reported in EDHS 2011. However, this was lower than the prevalence of health facility delivery practice of 28% reported in Ethiopia by DHS 2016 (Ethiopian Federal Ministry of Health., 2011, Ethiopian Federal Ministry of Health., 2016), Biharamulo District, Tanzania 56% and Debremarkos town, Northwest Ethiopia 19.6% [Bayu H, Adefris M, Amano A, and Abuhay M., 2015, Mageda K and Mmbaga EJ., 2015). Moreover, the prevalence of health facility delivery practice identified by this study is slightly higher than the study conducted in northern Nigeria (Adewemimo AW, Msuya SE, Olaniyan CT and Adetoro A. Adegoke AA., 2014). This difference of extent of health facility delivery from different studies may be due to inconvenient infrastructure, lack of family support, unexpected urgency of labour, lack of awareness about its benefit, customary, inaccessibility of transportation and being far distance from health care facility. These factors are partly cited by EDHS 2011, 2016 and other similar study (Ethiopian Federal Ministry of Health., 2011, Ethiopian Federal Ministry of Health., 2016, Fikre AA and Demissie M., 2012). This suggests that there should be a need of health intervention program that reverse this high rate of home delivery. Moreover, this study revealed that younger women were more likely to give birth at health facility; this finding is in line with the study finding from Bangladesh (Sanni Yaya S, Bishwajit G, Ekholuenetale M., 20170. Further, the current study found that women who have higher monthly income were more likely to give birth at health facility, this finding is in line with one study from Dodota Woreda in Ethiopia (Fikre AA and Demissie M., 2012). Women who have enough income give more value to their health, they have no financial constraints for any indirect costs to be paid in the health facility.

This study revealed that women felt health care professionals were friendly in their approach and were more likely to give birth at health care facility. Likewise, this study revealed more than three fourth of the women who participated in the study believed that health facility delivery benefits women to get appropriate care for new born and mother. This is in agreement with Hagose (2014), who indicated that the type of assistance a woman receives during childbirth had important health consequences for both mother and child. Some also believed that delivery at health facility had good benefit and were more likely to give birth at health facility in the future. These finding are in line with WHO who indicated that health facility delivery may reverse and prevent labor and delivery related complications [Ethiopian Federal Ministry of Health., 2011, Ethiopian Federal Ministry of Health., 2016]. The findings of this study are not in agreement with a the report of EDHS 2011 about factors hindering health facility delivery; where about 61% of the study participants stated health facility delivery is not necessary, 30% not customary, and 14% not near[Ethiopian Federal Ministry of Health., 2011]. This study revealed

the main reasons why women do not attend health facility delivery were unavailability of transportation 43.4%, unexpected urgency of labour 26.1%, and lack of family support 23%. This indicate that several factors are still hindering women not to attend health facility delivery.

Conclusion

This study indicate high rate of home delivery which is a major concern. Based on the finding of this study, there should be health intervention program suggested to reverse this high rate of home delivery. The findings of this study indicate that health delivery uptake in was affected by socio demographic characteristics, culture, and accessibility of the service , education, household income and access to health institution as factors that were associated with health facility delivery. The most common reason reported for choosing health facility for delivery was being close to home. Distance to health facility was a common reason for not delivering in health facilities.

The type of assistance a woman receives during childbirth had important health consequences for uptake of health facility delivery. Since most maternal deaths and obstetric complications happen around the time of delivery and cannot be predicted a priori, skilled attendance at birth remains the most important intervention in reducing maternal mortality and complications .Attitude of the health workers was important in attracting the mothers coming for any maternal service to motivate them to come again for further services. Health professionals were expected to show good attitude and create smooth relationship with mothers coming for any maternal health service. Government initiative to offer free maternal health services was important for the uptake of health delivery. It is important to note that some mothers were not aware of these initiative. Client satisfaction among pregnant women attending health delivery institutions was an important measure to assess quality of health care. Providing quality service means meeting client expectations, which was a function of their experiences during a given service encounter.

Recommendations

i. Health extension workers and health professionals should create awareness to pregnant women about benefits of health facility delivery during prenatal care period in the health care facility or home.
ii. Government and/or stakeholders should facilitate accessibility to the health facility by increasing availability of transportation/improving infrastructure
iii. Government and/or stakeholders should consistently motivate health care providers to be friendlier to the women in need of their care; which have an ultimate effect in increasing health facility delivery.
iv. Government and/or stakeholders should equip the health care providers with recent knowledge through on job training to deliver quality cares to women in need of their care which ultimately attracts women to the health care facility for delivery. Making maternal health care service absolutely free of charge and improving family financial support will improve health facility delivery.

Competing Interest

Authors declare they have no competing interest.

Author's contribution

Gebrewold Ayelech Tilaye developed the research idea. All authors contributed to design of the study, data analysis and manuscript writing. All the authors reviewed and approved the final version of the manuscript.

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