

Magnitude of Home Delivery and Associated Factors Among Child Bearing Age Mothers in Sherkole District, Benishangul Gumuz Regional State-Western-Ethiopia

Resom Berhe Gebremariam (✉ resom.berhe86@gmail.com)

University of Gondar College of Medicine and Health Sciences

Adane Nigusie

University of Gondar

Research article

Keywords: Home delivery, Women's in the child bearing age, Sherkole

Posted Date: January 14th, 2020

DOI: <https://doi.org/10.21203/rs.2.20837/v1>

License: © ⓘ This work is licensed under a Creative Commons Attribution 4.0 International License.

[Read Full License](#)

Abstract

Background

Globally, more than 536,000 maternal and 8 million perinatal deaths occur every year. Ethiopian Demographic and Health Survey stated that maternal death was 412 per 100,000 in 2016. This still indicate that maternal health remains a major public health problem in Ethiopia irrespective of the government's measure to institutional delivery.

Methods

Community based cross sectional study was conducted among women aged 15-49 years in Sherkole district, Benishangul Gumuz region from January to Jun 2018. A total of 451 randomly selected women were included in the study. Stratified sampling followed by simple random sampling technique was used to select the study participants. Data were collected using pretested and structured questionnaire. Bivariate and multivariate logistic regression model was fitted to identify factors associated with home delivery among women's in the child bearing age. An adjusted odds ratio with 95% confidence interval was computed to determine the level of significance.

Results

The magnitude of home delivery was 353 (80%) and were assisted by non-skilled birth attendants. Mothers whose husband choose the place of delivery [AOR: 5.6, 95% CI (2.1-15.2), Mothers' occupation ([AOR: 0.21 95% C I (0.08-0.57), ANC visit [AOR: 95 CI: 5.1(1.6-15.8), decision making [AOR: 95 CI: 0.3(0.01-0.7)] and traditional remedies [AOR: 95%CI: 0.03(0.01-0.09)] were significantly associated with home delivery.

Conclusions

Based on the findings of the survey, it was concluded that the overall magnitude of home delivery was found to be high. ANC visit, mother's occupation, traditional remedies and decision making were significantly associated with home delivery.

Introduction

Home delivery is a place where women deliver outside the health facilities, give birth at home, where risks of mortality and sepsis are the cause of many complications, which may lead to maternal death [1]. In most cases, home delivery is practiced without the presence of qualified personnel [1]. According to the World Health Organization (WHO), qualified personnel imply a midwife, a nurse or a doctor who have completed training and are authorized to practice. In fact, in developing countries a significantly high proportion of deliveries are performed by unskilled personnel [2].

Maternal deaths have been shown to subsidize to opposing perinatal outcomes such as stillbirths and interventions to lessen stillbirths are likely to reduce maternal mortality too [3]. Similarly, traditional birth attendants who largely assist deliveries in developing countries mostly at home have been shown to be unable to subsidize to the reduction of maternal mortality [4].

On the global scale, home deliveries in the developed western countries constitute a very bordering share of total deliveries being mainly below 2% with the exception of the Malawi where home deliveries are above 30% [5]. The burden of maternal deaths occurring worldwide has been estimated at 358,000 decline from the previous high of 529,000 in the recent past [3]. However, the bulk of these deaths (99%) still come from developing countries. The sub-Saharan African region still accounts for the majority of deaths (640 per 100,000 live births), followed by south Asia which had an estimated 280 deaths per 100,000 live births in 2015 [6].

Globally, one third of births take place at home without the assistance of skilled attendants. In Africa, less than 50% of births are attended by skilled health workers. Ethiopian Demographic and Health Survey report (EDHS) stated that maternal death was 412 per 100,000 in 2016. This still indicate that maternal health remains a major public health problem in Ethiopia. Irrespective of the government's measures to institutional delivery assisted skilled attendants, home delivery remains high, estimated at over 79% of all pregnant women [7].

In Ethiopia, antenatal care coverage is 62%, implying that women are aware of the importance of attending clinic but only few deliveries take place in the health facility. Skilled attendant at deliveries is estimated at 28% nationally and lower in rural areas. Even though, access to health facility in the country is good with over 85% of the population living within 3 kilometers of a primary health care or outreach health post and over 97% of the population within 5 kilometers but sadly, very low proportion of the women uses the health facilities for delivery [7].

The rate of home delivery is attributed to many factors. Among these are low socioeconomic status [9], women illiteracy, lack of pregnancy monitoring, inaccessibility of health facilities [16–20] and women's position in the society [22–24], which confers little decision-making power. Accurate epidemiological information is necessary to understand the magnitude home delivery among women of child bearing age, to guide interventions that helps to improve institutional delivery and improve women's wellbeing and to monitor trends over time. Thus, the aim of this study was to assess the magnitude of home delivery and associated factors among women of child bearing age in Sherkole district, Western Ethiopia.

Methods

Study design

Community based cross sectional study was carried out from February – March 2018 in Sherkole district, western Ethiopia.

Study area

Sherkole district is found 782 km away from Addis Ababa, the capital city of Ethiopia. According to the population projection for 2017, the total population size of the district was estimated to be 35,542 of which 18,616 are female. Of this 10,030 are in the age group of 15-49 years and 1,104 were pregnant women. The district is organized in to 19 Kebeles (the lowest administrative unit), of these, 14 of the kebeles are found in the rural areas. During the study, the district had 2 health centers and 13 health posts that provided health care services, among others.

Sample size determination and Sampling

Sample size was calculated using prevalence of home delivery 84% in Ethiopia [28] of single sample proportion, 95% confidence level and 5% marginal error, 10% non-response rate and design effect of 2. The estimated sample size was 451 subjects. A multistage probability sampling technique was used to select study participants.

Data Collection Tools and Procedure

Data were collected using a pre-tested structured questionnaire developed based on literatures, to collect socio demographic and other relevant reproductive health information's that included institutional service utilization and delivery related information of the women. The questionnaire was prepared in English and translated into each local language the participants spoke: Amharic and Bertha. Ten experienced diploma holder nurses who are fluent in speaking both Amharic and Bertha language were recruited and trained for 2 days about the purpose of the study and on the overall data collection procedures. To assure the quality of the data, the questionnaire was then pre-tested by trained data collectors on 5% of the households near adjacent districts and appropriate modifications was made accordingly. The experience gained in the pretesting was used in organizing the study properly. During the data collection, facilitators were supervised at each site.

Statistical analysis

The collected data were computerized using Epi-Info 7 and analyzed using SPSS version 20. Both descriptive and analytical statistical procedures were utilized. The study employed descriptive statistics (counts and percentages) for the presentation of demographic data.

Binary logistic regression was used to identify factors associated with home delivery among the mothers in a child bearing age. Variables with P-value less than or equal to 0.25 were fitted in to multiple logistic regression models for controlling the possible effect of confounders and finally the variables which had

independent association with home delivery were identified on the basis of OR, with 95%CI and p-value less than 0.05.

Results

Socio economic and demographic characteristics of the respondent

From a total of 451 mothers who were identified for the study, 441 participated in the study while 10 refused to participate, yielding the response rate of 98%. The mean age of the respondents was 26.8(SD± 4.6) years. Higher percentages of the respondents, 438 (99.3%) were from rural area and almost all of the respondents 434 (98.6%) were Muslims by religion. Regarding the ethnicity, majority of the respondents 433 (98.1%) were Bertha (Table 1).

Table 1

Socio- economic and demographic characteristics of reproductive age group mothers in Sherkole district Feb- March, Western Ethiopia 2018.

Variable	Frequency	%
Age		
15–24	97	23.9
25–34	307	67.9
35–49	37	8.2
Residence	343	77.7
Rural	98	22.2
Semi urban		
Ethnicity	433	98.1
Berta	8	1.9
Other		
Marital status		
Married	417	94.6
Unmarried	24	5.4
Religion		
Muslim	434	98.6
Others	7	1.3
Respondent occupation		
House wife	139	31.6
Farmer	302	68.4
Occupation of the spouse		
Farmer	416	94.3
Others	19	4.3
Respondents educational status		
Illiterate	190	43.7
Able to read and write	41	9.3
Primary school and above	210	47.9
Educational status of spouse		

Variable	Frequency	%
Illiterate	172	39
Able to read and write	68	15.4
Primary and above	201	45.6
Monthly income		
<320	348	78.9
320–600	93	21.1

Magnitude of home delivery

The magnitude of Home delivery was 353 (80%) and assisted by non-skilled birth attendants. From these, about 345 (79.7%) were assisted by traditional birth attendants, and the rest by other relatives. From total of 441 respondents, more than half of the respondents 235(53.6%) attended at least one antenatal visit during their last pregnancy.

Factors associated with home delivery

Variables such as, availability of drug and supply, distance to health facility, ANC visit, traditional remedies, house hold income, occupation of mother, parity, gravidity, husband choice of delivery place and information about benefit of delivery in health facility and decision making were candidate by their P-value <0.25 and entered to multi-logistic regression for their significance. From these factors, ANC visit, occupation of mothers, traditional remedies and Decision-making power were statistically significant.

Mothers' occupation was found to be predictor of home delivery, mothers who were farmers by their occupation were about 79% less likely to deliver at home compared with mothers who were house wife [AOR: 0.21 95% CI: 0.21 (0.08-0.57)]. Mothers who do not attend ANC visit were five times [AOR: 95%CI: 5.1(1.6-15.8)] more likely to give birth at home as compared with mothers who attend ANC. Mothers who decided with their spouse about the place of delivery were about 30% less likely to deliver at home compared to those who decided by their own [AOR: 95%CI: 0.7(0.2-2.1)].

Mothers who don't prefer traditional remedies were about 97% less likely to deliver at home compared to those who prefer traditional remedies [AOR: 95%CI: 0.03(0.01-0.09)] (Table 3).

Table 3

Factors associated with home delivery among women who gave birth in the last 2 years in Sherkole District, Feb-January, Western Ethiopia, 2018.

Home Delivery	Home	Institution	COR	AOR	P-value
Distance to health facility	135 (82.8)	28 (17.2)	1.93 (0.95–3.92)	0.8(0.3-2.0)	0.630
<2 Km	178 (80.2)	44 (19.8)		0.9(0.2–3.7)	0.943
2–5 Km	40 (71.4)	16 (28.6)	1.62 (0.83–3.15)	1	
>5 Km			1		
Age category	84(81)	20(19)	1.08 (1.5–1.7)	1.6 (1.50–2.03)	0.328
15–24	238(80)	60(20)			0.824
25–34	31(88.6)	8(11.4)	1.02(1.6–5.8)	1.2 (1.2–6.02)	
35 and above			1	1	
ANC Visit	185(71.1)	76 (28.9)	1	5.1(1.6–15.8)	0.005*
Yes	166 (93.3)	12 (6.7)	5.6 (2.65–10.70)	1	
No					
Mother occupation	103 (74.1)	36 (25.9)	0.53 (0.32–0.86)	0.21(0.08–0.57)	0.002*
House wife	250 (84.5)	46 (15.5)	1	1	
Farmer					
Health Provider Behavior	108(77.1)	32 (22.9)	0.77(0.46–1.26)	1.7(0.6–4.8)	0.287
Good	245 (81.4)	56 (18.6)	1	1	
Poor					
Husband choice	72(31.6)	9((4.5)	1	1	0.12
Institution	156(68.4)	190(95.5)	0.102 (4.7–20.1)	5.6(0.1–10.2)	
Home					
Traditional Remedy	81((50.9)	78(49.1)	0.04(0.02–0.08)	0.03(0.01–0.09)	0.001*
No	272(96.5)	10(3.5)	1	1	
Yes					
Maternal income	302(86.5)	46(13.5)	1	1	0.262
<320	51(54)	42(45.5)	0.19(0.11–0.31)	0.6(0.2–1.5)	
320 and above					
Parity	13(68.4)	6(31.)	1	1	0.290
1	151(75.1)	50(24.9)	1.4(0.5–3.9)	0.19(0.008-4.2)	0.993
2–5	189(85.5)	32(14.5)	2.7(0.96–7.7)	0.99(0.03–11.8)	
>5					
Gravidity	11(57.1%)	8(42.1%)	0.25(0.9–6.3)	3.4(0.2–10.2)	0.386
1	137(76.5))	42(23.5)	0.60(1.5,10.4)	10.2)	0.725
2–5	205(84.4)	38(15.6)	1	1.7(0.08–9.9)	
>5				1	

Home Delivery	Home	Institution	COR	AOR	P-value
Benefit of institution delivery Yes No	276(78) 77(85.6)	75(21.4) 13(14.4)	1 1.61 (0.85– 3.06)	1 2.8(0.7– 11.6)	0.153
Availability of drug Good poor	76(76.5%) 264(82) %	24(24.2) 58(18)	0.68(0.40– 1.18) 1	0.46(0.15– 1.42) 1	0.177
Decision making Me Husband Both wife and husband	191(88) 86(82.7) 76(62.3)	24(11.3) 18(17.3) 46(37.7)	1 0.6(0.57–0.9) 0.2(0.1–0.4)	0.3(0.28– 1.7) 0.7(0.2–2.1)	0.07 0.049*

Discussion

The present study revealed the magnitude of home delivery among women in the reproductive age group who gave birth in the preceding two years. ANC visit, occupation of mothers, traditional remedies and Decision-making power were significantly associated with home deliver.

In the current study, 80% of study participants delivered their child at home and were assisted by non-skilled birth attendants which was comparable to the study conducted in Kenya [16], where 67.7% of women gave birth at home. But the magnitude is slightly higher when compared to other findings from Oromia region [14], Amhara [9], Malawi [16], Nigeria [22], Ghana [28] and Tanzania [29] where the magnitude of home delivery was 58%, 31%, 29%, 40%, 48% and 44%, respectively. The difference could be attributed to the socioeconomic, cultural factors and geographical variation that may vary among the studies. However, nearly similar magnitude was reported in Awi's study 84% [28].[29, 30].

In this particular study; mothers' occupation was found to be a predictor of home delivery. Mothers who are farmers were two times less likely to give birth at home compared to those who were house wife [AOR: 0.21 95% CI: 0.21 (0.08–0.57)]. This finding is in line with study conducted in Zambia and Senegal [29,31]. The probable reason for this might be mothers who engage in agriculture (farming) may have their own product and income that can make them economically empowered and decisive by their own but in contrary house wives are economically reliant on their husband's income. In many African countries has also been described majority of women requests permission from their husbands and relatives to go to health facility.

As to the finding of this study, ANC visit was found significantly associated with home delivery. Mothers who do not attend ANC visit are five times [AOR: 95%CI: 5.1(1.6–15.8)] more likely to give birth at home as compared with mothers who do attend ANC visit. The finding is in line with study done in Oromia regional state [9], Tanzania [29], and Nigeria [22]. This could be explained due to nearly the same socio-economic status among sub Saharan African countries. In addition, not getting adequate information and counseling about the condition of their babies and themselves may also be an additional factor

which favors them in experiencing home delivery, but the opposite is true for those who do attend ANC. However, some studies argue that, ANC visits would have an inverse association with home delivery as women who are told their pregnancy is fine may feel encouraged to deliver at home [27].

The study also found that home delivery was significantly associated decision making. Mothers who decide with their Husband for the place of delivery were less likely to give birth at home compared to those who decide by themselves. This finding is supported by other studies done in Zambia and Senegal [29, 31]. This could be due to the fact that mothers who make decisions with their husband have highest self-confidence and transparency, and these self-confidences may give them equal opportunity and help them to exercise their right of equality. But most of the time especially in cultural society, majority of women requests permission from their husbands and relatives to go to health facility which has been described in many studies conducted in African countries.

In this study, traditional remedies were also found to be another determinant factor for home delivery. Mothers who don't prefer traditional remedies were less likely to deliver at home compared to those who prefer traditional remedies. This study was in line with study conducted in Tigray region Ethiopia [11] illustrating that many mothers perceive and belief pregnancy and child birth as a natural gift from God and most of the time ends up with short and easy deliveries, even the one who is in neighbor without hearing that the women is in labor. There is a cultural belief regarding the pregnant women that blessing her to end in good outcomes. A study among women in Nigeria also came up with the same finding [22]. This could be explained by under development of modern medical management in Africa and medicalization of western country over African led them to focus on herbal and traditional remedies and healing. Furthermore, the possible reason for mothers to choose traditional remedies is not only about perception, culture and believe but also it is related to in accessibility, affordability and inequity in health coverage and service across the country.

Limitation Of The Study

A cross sectional nature of the study does not allow establishing causality of associations and the results should be interpreted cautiously. Recall bias cannot be ruled out about events that took place further from the period of data collection. Social desirability bias may also be a problem.

Conclusion

Based on the findings of the survey, it was concluded that the overall magnitude of home delivery was found to be high. ANC visit, mother's occupation, traditional remedies and decision making were significantly associated with home delivery.

Declarations

Ethics approval and consent to participate

The protocol for this cross-sectional study was approved by the Institutional Review Board of the University of Gondar on Dec. 15, 2018 (No 1556). All participants gave oral informed consent and parental consent was obtained also in a written form for participants under 16 and this form of consent was approved from the ethics committee.

Consent to publish

Not applicable

Availability of data and materials

The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

Competing interests

The authors declare that they have no competing interests.

Funding

This study was funded by the Research and Community Service Vice President Office of the University of Gondar.

Author contributions

RB conceived and designed the idea, analyzed the data and wrote the manuscript. AN analyzed the data and critically reviewed the manuscript. All authors read and approved the final draft of the manuscript.

Acknowledgements

The authors are indebted to the Research and Community Service Vice President Office of the University of Gondar for financial support. The authors would also like to thank University of Gondar, facilitators and the study participants for their dedicated cooperation and made the study possible.

References

1. World Health Organization. WHO. Maternal and child health (2016). Geneva Switzerland: WHO, 2016.
2. UNICEF. Skilled delivery attendance (2016) . Retrieved 20 April 2018.[http:// www.unicef.org/wcaro/](http://www.unicef.org/wcaro/) .
3. World Health Organization. WHO. Maternal mortality (2016) . Retrieved 21 April 2018.
<http://www.who.int/entity/en/>.
4. Wanjira C. et al. Delivery practices and associated factors among mothers seeking child welfare services in selected health facilities in Nyandarua, South District, Kenya. BMC Public Health, 2011. **11**: p. 360.

5. Southern p.o.p.c.f.r. and G.B.E.C. Lily Kumbani . Why some women fail to give birth at health facilities: a qualitative study of women's in Malawi . BMC Reproductive Health, 2013. **10:9**.
6. UFP. Maternal mortality by Region. 2015.
7. Ethiopia Demographic and Health Survey (EDHS) . Follow along on Twitter! Ethiopia DHS, 2016.
8. Muluwas A . Utilization of Institutional Delivery Care Services and Influencing Factors among Women of Child Bearing Age in Assosa District, Benishangul Gumuz Regional State, West Ethiopia. Gynecology and Obstetrics, 2016. **Volume 16**.
9. Sadiq I.T. et al. Determinants of Home Delivery among Hausa in Kaduna, South Local Government of American. International Journal of Contemporary Research, May 2013. **Vol. 3 No. 5**.
10. Abel T, A.J. Why are there low institutional delivery rates in the gambia? women's opinion. 2007.
11. Woldetsadik, M.A. Pregnant women's preference and factors associated with institutional delivery service utilization . BMC Pregnancy and Childbirth, February 2015 .
12. Leone T et al . Reasons for Preference of Home Delivery with Traditional Birth Attendants (TBAs) in Rural Bangladesh: A Qualitative Exploration. Plos One, 2016. **11(1)**: p. e0146161.
13. Zelalem T , Mina M ,and Tiruwork G. Delivery at home and associated factors among women in child bearing age, who gave birth in the preceding two years in Zala Woreda, Southern Ethiopia. Journal of Public Health and Epidemiology, 2015.
14. Yegezu R.T. and A.S.B. Kitila. Assessment of factors affecting choice of delivery place among pregnant women in jimma zone South West, Ethiopia : A cross sectional study . J Women's Health Care, 2014. **4:1**
15. Abdella M. et al . Magnitude and Associated Factors for Home Delivery Among Women Who Gave Birth in Last 12 Months in Ayssaita, Afar, Ethiopia. A community Based Cross Sectional Study. Global Journal of Fertility and Research, 2016.
16. Moindi R.O. et al. Why mothers still deliver at home: Understanding factors associated with home deliveries and cultural practices in rural coastal Kenya : a cross-section study. BMC Public Health, 2016. **16**: p. 114.
17. K.e.a.R. Why some women fail to give birth at health facilities: a qualitative study of women's perceptions of perinatal care from rural Southern Malawi. Reproductive Health Journal , 2013. **10:9**
18. Alemayehu Y.K et al. The Role of Empowerment in the Association between a Woman's Educational Status and Infant Mortality in Ethiopia: Secondary Analysis of Demographic and Health Surveys. Ethiopian Journal of Health Sciences, 2015. **25(4)**: p. 353.
19. Øxnevad M. Perceptions and practices related to home based and facility based birth. A qualitative study from Agemssa, Ethiopia. 2011.
20. Tsegay R. et al. Determinant factors of home delivery among women in Northern Ethiopia: a case control study. BMC Public Health, 2017. **17(1)**: p. 289.
21. Mustafa M.H. and A.M. Mukhtar. Factors associated with antenatal and delivery care in Sudan: Analysis of the 2010 Sudan household survey. BMC Health Services Research, 2015. **15(1)**.

22. Amon Exavery A.M.K. , Mustafa Njozi , Kassimu Tani , Henry V Doctor , Ahmed Hingora and a.J.F. Phillips. Access to institutional delivery care and reasons for home delivery in three districts of Tanzania . International Journal for Equity in Health, 2014. **13:48**.
23. Karanja, S. et al. Factors influencing deliveries at health facilities in a rural Maasai Community in Magadi sub-County, Kenya. BMC Pregnancy and Childbirth, 2018. **18(1)**.
24. Kebede A., K. Hassen, and A. Nigussie Teklehaymanot. Factors associated with institutional delivery service utilization in Ethiopia. Int J Womens Health, 2016. **8**: p. 463-75.
25. Nigussie Teklehaymanot A., A. Kebede, and K. Hassen. Factors associated with institutional delivery service utilization in Ethiopia. International Journal of Women's Health, 2016. Volume 8: p. 463-475.
26. Junayde A , Mitike Molla . Preferences of place of delivery and birth attendants among women of Hashemene town, Oromia regional state, 2012. International journal of technology enhancements and emerging engineering research, 2012. Vol 2, issue 1.
27. Siajabu m.j. Home deliveries : factors influencing them and their impact on maternal and infant mortality in songea rural district. 2009.
28. Alemaw Wolelie , Worku Awoke. Institutional delivery service utilization and associated factors in Banja District, Awie Zone, Amhara Regional Sate, Ethiopia. Open Journal of Epidemiology , February 2014. 4, 30-35.
29. D Mwewa C.M.. Factors associated with home deliveries in a low income rural setting-observations from Nchelenge district, Zambia, 2016.
30. Shah R. et al. Factors affecting institutional delivery in rural Chitwan district of Nepal: a community based cross sectional study. BMC Pregnancy Childbirth, 2015. 15: p. 27.
31. Adama Faye , A.T. D., Daouda Faye . UNFPA annual report , 2016., 2016. www.unfpa.org/annual-report.