

Institutional Delivery Service Utilization and Its Association in Gambella Region, Ethiopia

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Abstract

Home delivery is common in sub Saharan states including Ethiopia leading to cause morbidity and mortality of maternal and child health. This study aims to determine factors affecting utilization of institutional delivery among mothers of under two-year-old children in Gambella regional state, Ethiopia. Methods: A cross sectional study which approach 404 mothers of under two years old children by using multistage and purposive sampling technique. Data was collected by self-administer questionnaire to examine the prevalence of institutional delivery and factors affecting. Descriptive statistic and Pearson's Chi-square were performed to describe and determine the associations. Results: The study shows that 69.3% of respondent's delivery in the health facility, whereas, 26.7% delivery at home and those deliveries on the road and ambulance was 4%. This study disclosed that most of respondents had low level of knowledge on pregnancy complications (65.6%). Education of the mother, ethnicity, attitude, transport accessibility, availability of maternal source of health information, availability of female skilled birth personnel, Antenatal Care visit, and accessibility to 24 hours' service were significantly associated to institutional delivery. Conclusion: Institutional delivery is affected by many factors. The government and health professionals should promote education regarding the danger signs of pregnancy, pregnancy complications, and benefits of institutional delivery.

Keywords: Institutional delivery, Prevalence, Gambella Region, Ethiopia

Introduction

Maternal mortality remains a universal significant health problem. Low- or middle-income countries encountered the complication with pregnancy or related consequences for the maternal death during the reproductive-aged women^{1,2}. Institutional delivery service utilization is one of the key interventions to reduce maternal mortality ration in the world. It ensures safe birth, reduces both actual and possibly potential pregnancy complications, and increases the survival of most mothers and newborns^{3,4}. The World Health Organization (WHO) approximate that nearly 580,000 mothers had lost their life due to complications related

to pregnancy. Still, maternal mortality ratio (686 per 100,000 live childbirths) is the highest in Ethiopia throughout the world⁵.

In developed countries, almost 97 % of mothers attained antenatal care services whereas only 52 % of mothers attained routine antenatal check-up in developing countries and 68% of deliveries were attended by skilled health personel through 53 % of skilled birth personel in Sub- Saharan Africa⁵⁻⁷. The maternal death percentage in 2000 was 816 per 100,000 livebirths, and the newborn death percentage was 113 per 1,000^{3,5}. Single clarification for poor health results amongst mother and youngsters is connected to the non-use of present health care facilities by a large percentage of Ethiopian mother. Earlier educations have obviously established that mother usage to health facilities low in the state. Some trainings in 1990s have shown that about 25% of Ethiopian mothers expected ANC, and less than 10% received professionally-assisted delivery care^{4,5,6,8}. Home delivery is common in sub Saharan states including Ethiopia, 42% of mothers in Malawi,

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69% in Nepal, 70% in Zaria (Nigeria), 74% in Pakistan⁸⁻¹⁰ and 87.65% in eastern Burma give birth at home, 81.8% of women in Dodota district, 95% in Tigray, and 87.7% of mothers in Arsi reported those who get delivery at home¹¹. There were 45% of institutional delivery in Gambella region which lower than Addis Ababa (96.5%), Tigray (56.9%), Direedawa (56.2%) and Harari (50.2%)¹². However, despite the removal of financial barriers, home delivery was still found to be very high. Thus, we need to understand the factors that influence women's decision on institutional delivery service utilization.

Methods

This study is a cross-sectional study which conducted in Gambella Region, Western Ethiopia. The total sample size needed was 404 respondents including 5% refusal rate calculated using Cochran formula: $n = Z^2 P (1-P) / (d)^2$. This study used a multi-stage sampling technique. First, 5 out of 14 districts in Gambella Region was selected by purposive sampling technique with the lowest rate of institutional delivery; the eligible districts selected were Abobo, Gog, Itang, Gambella Zuria, and Jekaw. The 2nd stage, among 5 districts, 2 villages were selected by simple random sampling from each district. Finally, the participants were selected by convenience sampling technique with proportionate to size. The study population was mothers age between 15- 49 years with under two years old children.

The questionnaire consists of 6 parts: 1) Socio-demographic characteristics 2) Knowledge on pregnancy complications, Antenatal Care (ANC), Postnatal Care (PNC) and good place of service care for delivery 3) Attitude towards institutional delivery and maternal health delivery 4) Enabling factors 5) Need factors and 6) Utilization of institutional delivery. The content validity was checked by three experts by using the Item Objective Congruence Index. A pilot study was also conducted, the Cronbach's alpha results were 0.82.

Data collection procedure

Researchers had been explained the study and its associated procedures, risks, and benefits to each participant. All women had been asked for their

signed consent before continuing with data collection. The ethical approval for conducting the study was received from Research Ethics Review Committee, Chulalongkorn University and the permission to conduct the study was obtained from Ethiopia Federal Ministry of Health (EFMOH) and Gambella Regional Health Bureau.

Data Entry and Analysis

Data analysis were processed by using SPSS software version 22. The results had been presented using descriptive statistics including frequency, percentages, mean, and standard deviation. The chi-square test was run to find the association between the institutional delivery and the independent variables.

Results

In this study among 404 participants; over little half (50.7%) age 15-24 years. Most of respondents were married (94.3%). Thirty-three percent of respondents had finished secondary education, the rest had completed primary school, high school, higher education, and no education, respectively. About 77% of participants were housewives and/or no occupation, while 23% had an occupation. Ethnicity of the respondent were Nuer (61%), whereas, Anywaa were 39%. For Autonomy in the decision making found that those who responded to both mother and husband were 45.3%, only husband was 29.2%, and mother in law/relatives were 17.1%.

Level of Knowledge and attitude

Table 1 shows that the level of knowledge of respondents of pregnancy complications, ANC, and PNC, and good place of service care for deliver. The study found that most of respondents had low knowledge level (65.6%), follow by moderate knowledge level (26.0%), and the high knowledge level (8.4%). For the attitude of the participant toward institutional delivery found that most of participants had neutral attitude (62.9%), the rest had negative attitude (20.5%), and positive attitude (16.6%), respectively.

Table 1 Level of Knowledge and attitude toward institutional delivery and maternal health (n=404)

Variables	Frequency	Percentage (%)
Level of knowledge		
Low knowledge (<60%) (0-17)	265	65.6
Moderate knowledge (60-80%) (18-23)	105	26.0
High knowledge (>80%) (24-28)	34	8.4
Level of attitude		
Negative attitude	83	20.5
Neutral attitude	254	62.9
Positive attitude	67	16.6

Enabling and need factors

Table 2 shows enabling and need factors. The respondents who had access to information on maternal health care were 94%. According to source of information, the respondents who got the information from the health provider were 57.9%, family and friends were 13.1%, and those with no information about health were 4.2%. The study also found that respondents who had a poor access to transportation 21.8%. Regarding the ANC attendance found that those who attended the ANC were 95.3%.

Table 2 Enabling and need factors (n=404)

Variables	Frequency	Percentage (%)
Maternal health information		
No	24	5.9
Yes	380	94.1
Information of maternal health		
TV/Radio	1	2.0
Health provider	234	57.9
Family and friends	53	13.1
Health Facility	99	24.5
None	17	4.2
Access to transportation		
No	88	21.8
Yes	316	78.2
The person Accompanied		
Husband	163	25.0
Mother in Low	15	40.3
Friend	123	30.7
Relatives	123	30.4
Ante Natal Care visit		
No	19	4.7

Cont... Table 2 Enabling and need factors (n=404)

Yes	385	95.3
The frequency of Ante-natal care visit		
Never attained ANC	13	3.2
Frist ANC Visit	11	27.0
Second ANC Visit	43	10.6
Third ANC visit	147	36.4
Four ANC visit	148	36.1

Institutional delivery utilization

The study revealed that 69.3% of respondent's delivered at the health institution whereas mothers who delivered at home were 26.7%. The respondents assisted by the health provider or skilled birth attendant were 70.5% and those assisted by the traditional birth attendants were 28.5% (see detail Table 3).

Table 3 Institutional delivery utilization (n=404)

Variables	Frequency	Percentage (%)
Place of delivery		
Health facility	280	(69.3)
Home	108	(26.7)
On the road	12	(3.0)
In Ambulance	4	(1.0.)
The person that assisted the delivery		
Skilled birth attendants	285	(70.5)
Traditional birth attendants	115	(28.5)
Others	4	(1.0)

Association of socio-demographic, knowledge, attitude, enabling and need factors and institutional delivery

The study found that the educational background, ethnicity, attitude of respondent on maternal health service, availability of maternal source of health

information, Access to transportation, availability of female skilled birth personnel, attending the ANC visit, and access to 24 hours' service care were significantly associated with institutional delivery at P- Value = 0.015, 0.006, 0.003, <0.001, 0.019, 0.016, <0.001, <0.001, respectively. (see detail in Table 4)

Table 4 Pearson Chi-Square test for the association of socio-demographic, knowledge, attitude, enabling and need factors and institutional delivery (n=404)

Variable	Institutional Delivery n (%)		P-Value
	No	Yes	
Age group			0.62
15-25 years	60 (29.2)	145(70.7)	
25-35 years	54 (31.2)	119(68.8)	
35-45 years	10 (3.8)	16(61.5)	
Educational background of women			0.015*
Primary School	46 (38.3)	74 (61.7)	
Secondary School	14 (19.4)	91(66.4)	
High School	38 (34.9)	58(80.6)	
Above high School level	10 (18.5)	44(81.5)	
Illiterate	8 (38.1)	13(61.9)	
Ethnicity			0.006*
Anywaa	61 (38.6)	61 (61.4)	
Nuer	63 (25.6)	183 (74.4)	
Autonomy			0.191
Husband	42 (35.6)	76 (64.4)	
Respondent	14 (41.2)	20 (58.8)	
My husband and I	50 (27.3)	133 (72.7)	
Mother in law/Relatives	18 (26.1)	51 (73.9)	
Level of Knowledge			0.205
Low Knowledge	88(33.2)	177(66.8)	
Moderate Knowledge	25(80.0)	80(76.2)	
High Knowledge	11(32.4)	23(67.6)	
Level of Attitude			0.003*
Positive Attitude	36(43.4)	47(56.6)	
Neutral Attitude	76(178.0)	178(70.1)	
Negative Attitude	12(17.9)	55(82.1)	
Availability of maternal health information			0.001*
No	17 (70.8)	7 (29.2)	
Yes	107 (28.2)	273 (71.8)	
Access to transportation			0.019*
No	36 (40.9)	52 (59.1)	

Cont... Table 4 Pearson Chi-Square test for the association of socio-demographic, knowledge, attitude, enabling and need factors and institutional delivery (n=404)

yes	88 (27.8)	228 (72.2)	
Female skilled personnel			0.016*
No	17 (48.6)	18 (51.4)	
yes	107 (29.0)	262 (71.0)	
Attending the Ante Natal Care visit			0.001*
No	13 (68.4)	6 (31.6)	
Yes	111 (28.8)	274 (71.2)	
Access to 24 hours service care			0.001*
No	99 (87.6)	14 (12.4)	
Yes	25 (8.6)	266 (91.4)	

Pearson chi-Squer, *P-value<0.05

Discussion

The current study shows that the institutional delivery was 69.3%, home delivery was 26.7%, on the way to health facility, on the road delivery was 3% which is institutional delivery seems to be higher than home delivery which could be due to better accessibility to health service. The study also shows high percentage of ANC service utilization (95.3%) which contradict with other studies reported that participants who had attended ANC visit were very low¹¹⁻¹⁴. The previous findings showed that institutional delivery service utilization was 12.1% in the district and the majority of mothers (87.9%) gave birth at home and also revealed that overall delivery assisted by skilled birth attendants was 12.7%.¹¹. Our study finding was higher than National and Amhara region EDHS result of 2005 which was 6% and 3.5% respectively, this might be due to the time gap, i.e., since 2005 there could be improvement in accessing and utilizing the service. This study showed that institutional delivery service utilization in the study area was high 69.3%, however when compared to other findings this finding is not constant with the other finding in Ethiopia; EDHS 2011¹² in the urban Arsi Zone and in Metkel and in Metekel¹⁵⁻¹⁶.

Additionally, current study shows the women who attended institutional delivery, who had attended 24 hours' service care were 72% and those that attended the post natal care was 28% which consistent with studies done in northwest Ethiopia, delivering at health

facility led women to seek for PNC services¹³. The previous study showed that individual attitude towards health care providers and perceptions on the quality services provided in health facilities were mentioned as influencing factors for maternal health service seeking behaviors of women consistent with previous studies¹³. This was also consistent with study done in Dembecha district, Northwest Ethiopia. This could be explained in three reasons; (i) low institutional delivery in the study setting, (ii) low antenatal health coverage, and (iii) lack of knowledge on the importance of the service^{13,17,18}.

This study found that the women's educational status to their antenatal health care service seeking behavior in maternal health care service. Women who were able to read and write were more likely to seek antenatal health care, and institutional delivery. It is understood that education is likely to enhance women autonomy and it make them near to information and obtain good knowledge^{13,19,20}. Women autonomy of this study the respondents who responded to decision made by both respondent and her husband were 45.3% and the respondents who responded to the decision only made by the husband for seeking health seeking were 29.2%, whereas, respondents to the decision made by mother in law were 17.1% respondents who responded to the autonomous 8.4% which means that it is less likely for the respondent to seek for health service behavior. This finding is inconsistent with systematic review conducted in sub Saharan Africa (SSA), which stated that women with highest levels of autonomy most likely seek facility-based delivery. This might be due to the fact that the

SSA review assesses power of the women in relation to other activities such as household purchase and freedom of movement in addition to decision on place of delivery¹⁵.

The magnitude of risk of home delivery, pregnancy complications, and benefit of institutional delivery, free service care for delivery and child care should be displayed to the public as it is necessary to help people in the society consider about these issues. The campaigns for women empowerment regarding knowledge and awareness of institutional delivery, settlement, and trainings for mother of under two years' children should be created. Furthermore, the health sectors should have a plan to give training about the risk of home delivery, and pregnancy complications to guarantee the safety for mothers of under two-year-old children. Legal regulation and punishment should be strictly enforced to the family who doesn't allow mothers to seek for a health care in order to reduce maternal mortality, child death occurrence and protect to women's right.

Acknowledgement: Authors would like to acknowledge the college of public health sciences, Chulalongkorn University, Thailand International Cooperation Agency (TICA) and the participants in this study.

Ethical Clearance: Ethical permission for this study was obtained from the Ethics Review Committee for Research Involving Human Research Subjects, Health Science Group, Chulalongkorn University, Thailand

Source of Funding: International Cooperation Agency (TICA).

Conflict of Interest: The authors declare that they have no conflict of interest.

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