

Research Paper

Magnitude and Factors Associated with Institutional Delivery Service among Women who have Antenatal Care Follow-Up at Hawassa University Referral Hospital, Ethiopia, 2016

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ABSTRACT

Background: Institutional delivery is the key intervention to reduce maternal mortality and morbidity. However, most of the mothers in developing country including Ethiopia are giving birth at home. This study, therefore, aimed at filling the gaps, by attempting to explore the factors which are affecting an institutional delivery service utilization in study area. The main objective of this study was to assess magnitude and factors affecting institutional delivery in women who have antenatal follow up at Hawassa referral hospital, Hawassa, south Ethiopia.

Methods: A descriptive hospital based cross-sectional study was conducted among randomly selected 257 pregnant women. Interviewed a structured questionnaire including socio demographic characteristics and factors affecting institutional delivery. Data entry was done by using EPI Info 3.5.1 and exported to SPSS version 20.0 software package for analysis.

Results: Among pregnant women 83.2% (n=139) at age group of 15-24 years old mothers give birth at health facilities. While 94.4% (n=17) of the mother at age group of 25-29 years old were give birth at home. Most of the pregnant mothers 76.1% (n=150) were prefer to give birth at home, because of different factors such as, privacy 102 (39.7%). Majority of the mothers 76.7% (n=197) were give their recent birth at health facilities. Most of the time institutional delivery was decided by both husband and wife 78.7 % (n=155).

Conclusion: The prevalence of institutional delivery was high. This could be achieved due to high ANC utilization and health education. Therefore efforts should be made to sustain ANC utilization in the study area.

Keywords: Delivery; Institutional delivery; Magnitude; Ethiopia

Introduction

Background

Globally every day, approximately 800 women die from causes related to pregnancy and childbirth. 99% of maternal deaths occur in the developing countries. The maternal mortality ratio in developing countries is 240 versus 16/100,000 live birth in developed countries. It is avoidable if resources and services are made available like safe delivery. 61% occur in 10 countries including Ethiopia [1]. In Ethiopia maternal mortality rate is 676 maternal deaths per 100,000 women [2]. The key to reduce maternal mortality and morbidity is the health institutions since every pregnancy faces risk [3]. Maternal mortality rate in the world continues increased unacceptably. An estimated 2.9 million women give birth every year; of these approximately over 25,000 women and girls die each year and more than 500,000 suffer from serious injuries and permanent damage to their health, such as obstetric fistulas. It is estimated that 100,000 women suffer with untreated fistulas across the country and another 9,000 women develop fistulas every year which are mainly caused by obstructed labor and a lack of maternal health care [4]. Institutional delivery is the key intervention in reducing maternal mortality and morbidity. However, the utilization of institutional delivery service is low due to different factors. The factors which affect institutional delivery service are varying widely [5]. Increasing institutional delivery

is an important intervention to reduce maternal and children mortality and morbidity. In Ethiopia most of the mother give birth at home. Only 16% of the mothers were give birth at health facility. From these mothers 15% of them were gave birth at public health institutions. Even the institutional delivery is low in Ethiopia, there an improvement with in the last fifteen years. The percentage of institutional delivery is triple higher from 5% in 2000 to 16% in 2014. First birth is much more likely at health institution when compared with six and more delivered (36 percent versus 8 percent). Delivery in a health facility is more common among mothers below age 35years. Mothers who had at least four antenatal care visits, highly educated, in the highest wealth quintile are gave birth at health institutions. Urban birth is six times more likely than rural birth to be delivered in a health facility (59 percent versus 10 percent) [6]. Women in Ethiopia gave birth at home, assisted by a traditional birth attendant or a relative as their first option. Only 10% of births in the past five years were delivered by a skilled provider. 61% of the women stated that a health facility which is institutional delivery was not necessary, and 30% stated that it was not customary [7]. Delivery assisted by skilled providers is the most important proven intervention in reducing maternal mortality and one of the Millennium Development Goal indicators to track national effort towards safe motherhood [2]. Since all pregnancies are at risk giving birth at health institutions is a mandatory [3]. This study, therefore, aimed at filling the gaps, by attempting to

explore the factors that are assumed to be barriers to institutional delivery service utilization in study area.

Methods

Study area and period

A cross sectional study was conducted from March 1 to May 30, 2016 among 257 randomly selected pregnant mothers. The study was conducted in Hawassa university referral hospital, south Ethiopia located 272 Km away from Addis Ababa. Hawassa University Referral Hospital offers services at general and specialty levels including Internal Medicine, Pediatrics and Child Health, Surgery, Gynecology and Obstetrics, ENT, Neurology, Urology, Psychiatry, Ophthalmology, Dermatology, Dentistry, Radiology, Pathology, Laboratory and Pharmacy services. Hawassa University Referral Hospital is the first Hospital in South Ethiopia in starting special services like screening for diabetic retinopathy with Retinal Photo camera. The hospital has also launched other special services including Oncology Unit (initially for Breast Cancer) and Intensive Care Unit (ICU). All services provided with in the hospital are with fee except for obstetric services, ART services, TB and DM treatment. The study period was from March to May, 2016 (Figure 1).

Study population

The study population was randomly selected pregnant mothers. The sample size was determined using single population proportion formula at 95% of confidence interval with assumption of prevalence of institutional delivery in Ethiopia 16% (6) with ($\alpha=0.05$), 5% marginal error ($d=0.05$), 10% for possible non-response and the final sample size was 257 pregnant mothers.

Sampling technique

Systematic random sampling method was used to recruit pregnant women among ANC attendants. 522 pregnant women were expected to visit the ANC during the study period based on the ANC plan of the hospital and based on registration book. This number was divided for the sample size to get the sample interval

(k value) which is 2. Of the first two subjects, one woman was randomly selected by lottery method, and then every 2nd woman was selected to participate in the study until the calculated sample size achieved within two months of data collection period.

Measurements

A face to face interview was conducted by using structured questionnaire. The English version of the questionnaire was translated in to local language (Amharic) for better understanding by the data collectors and respondents.

Data was supervised by midwives who were trained on the objective of the study, method of data collection and content to avoid any ambiguity raised during data collection. Data's completeness and accuracy was checked daily by supervisors and principal investigator. The questionnaire was pre-tested on 5% pregnant mothers, who were not included in the study. Data were coded and entered to computer using Epi Info version 3.1 and exported to SPSS program version 20.0 for further analysis. The result was presented using frequency tables and percentage. Ethical approval was obtained from Hawassa University Ethical Review Board. Letter of cooperation to Hawassa university referral hospital. Written informed consent was also obtained from each study participants (Figure 2).

Operational definitions

Institutional delivery: Is any delivery service, women who gave birth in the health facilities, including health posts attended by health extension workers.

Skilled attendant: Is professionally trained health worker usually a doctor, midwife or Nurse with the essential skills to manage normal labor and delivery, recognize complication early and perform any essential interventions.

Institutional delivery service utilization: Is expressed as the proportion of women in need of safe delivery service who actually receive the care with in a given period of time in a health facility.

Trained traditional birth attendant: Who has received a short course of training (usually of three months) through the modern

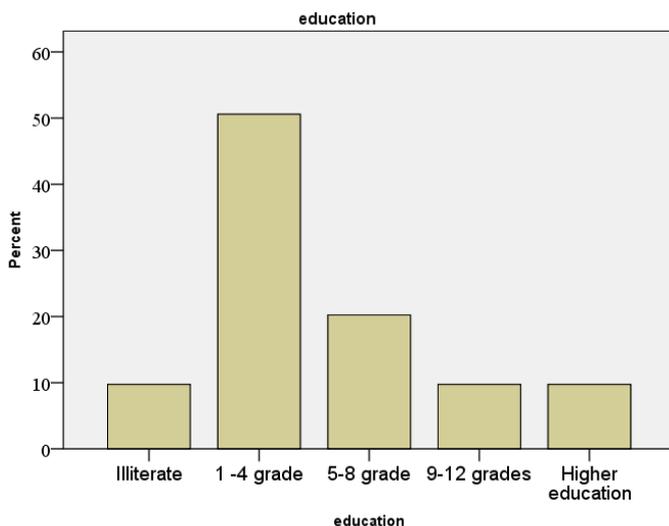


Figure 1: Educational status of mothers who have ANC follow up (N=257).

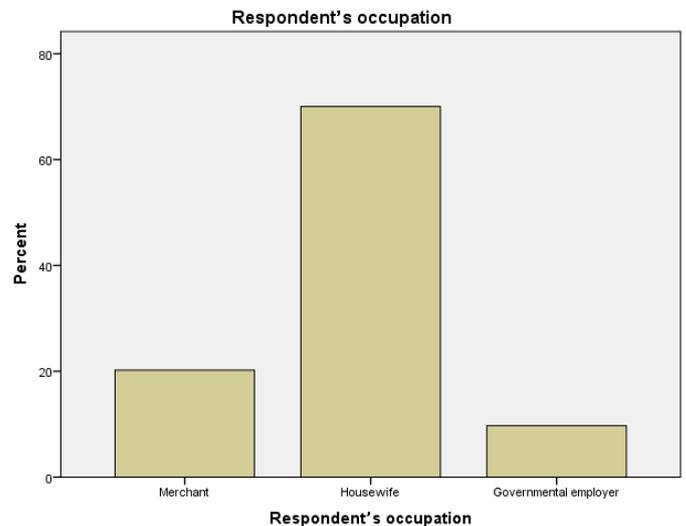


Figure 2: Occupational status of women who have ANC follow up (N=257).

health care sector to upgrade the required skills.

Traditional birth attendant: Is who initially had acquired the skill by delivering babies by herself or through apprenticeships to other TBAs (Figure 3).

PLACE OF RECENT DELIVERY

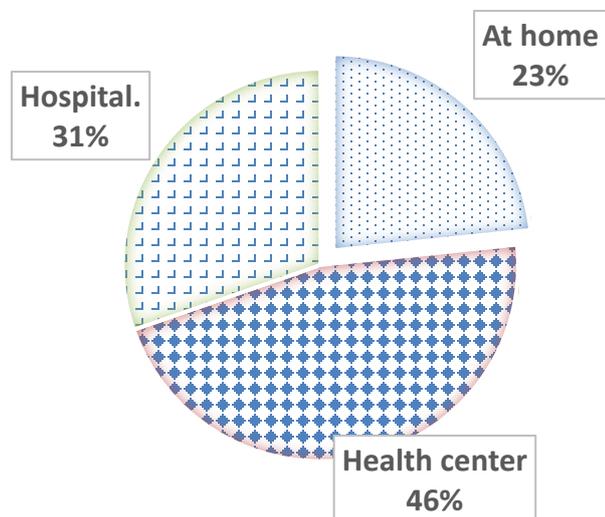


Figure 3: Place of recent delivery for women who have ANC follow up (N=257).

Results

Socio-demographic characteristics

A total 257 pregnant mothers were participated in the study. With 100% response rate. Out of the participants two third 167 (65.48%) were gave birth in the last five years at the age of 15-24 years (Tables 1-4).

Distance between participant home and health facility

Majority of the participants have a health facility near to home, which is less than 30 minutes to reach on foot. 147 (57.2%), took 1 h and more 81 (31.5%) and 2 h and more 29 (11.3%).

Decision for where to delivery

Most decisions 78.7% (n=155) to give birth at health facility was decided by both husband and wife but mothers who have the right to decide to go to health institutions were only 20.8% (n=41) the husbands were no mandate to decide where their wife gives birth except one person.

Discussion

This study tried to determine magnitude of institutional delivery among pregnant who visit Hawassa university referral hospital ANC clinic. Among 257 respondents one third 76.7% of them were

Table 1: Socio demographic characteristics of women who have ANC follow up (N=257).

Variable	Category	No.	Percentage
Age	15-19	168	65.4%
	25-29	18	7.0%
	30-34	48	18.7%
	35-39 and above	23	8.9%
Marital status	Married	257	100.0%
	Illiterate	25	9.7%
Education	1-4 grade	130	50.6%
	5-8 grade	52	20.2%
	9-12 grades	25	9.7%
	Higher education	25	9.7%
Respondent's occupation	Merchant	52	20.2%
	Housewife	180	70.0%
	Governmental employer	25	9.7%
Respondent's religion	Protestant	154	59.9%
	Orthodox	26	10.1%
	Others	77	30.0%
Occupation of husband	Farmer	129	50.2%
	Daily laborer	25	9.7%
	Merchant	52	20.2%
	Governmental employer	51	19.8%
Husband's education level	1-4 grade	51	19.8%
	5-8 grade	77	30.0%
	9-12 grades	78	30.4%
	Higher education	51	19.8%
Health facility in your village	Yes	257	100.0%
	<30 min	147	57.2%
How far	>1 h	81	31.5%
	>2 h	29	11.3%

Table 2: Socio economic factor affecting institutional delivery service (N=257).

Variable	Place of delivery		
	Home	Health facility	Total # (%)
	Number (%)	Number (%)	
Age			
15-24	28 (16.8)	139 (83.2)	167 (65.4)
25-29	17 (94.4)	1 (5.6)	18 (7)
30-34	12 (24.5)	37 (75.5)	49 (18.7)
>35	3 (13)	20 (87.0)	23 (8.9)
Total	60 (23.3)	197 (76.7)	257 (100)
marital status			
Married	60 (23.3)	197 (76.7)	257 (100)
Education			
Illiterate	24 (96)	1 (4)	25 (9.7)
1-4 grade	31 (23)	99 (76.2)	130 (50.6)
5-8 grade	5 (8)	47 (92)	52 (20.2)
9-12 grades	0	25 (100)	25 (9.7)
Higher education	0	25 (100)	25 (9.7)
Total	60 (23.3)	197 (76.7)	257 (100)
Occupation			
Merchant	0	52 (100)	52 (9.7)
Housewife	60 (33.3)	120 (66.7)	180 (50.6)
Governmental employer	0	25 (100)	25 (20.2)
Religion			
Protestant	31 (20.1)	123 (79.9)	154 (59.9)
Orthodox	0	26 (100)	26 (10.1)
Others	29 (37.7)	48 (62.3)	77 (30)
Occupation of husband			
Farmer	48 (37.2)	81 (62.8)	129 (50.2)
Daily laborer	5 (20)	20 (80.0)	25 (9.7)
Merchant	7 (13.5)	45 (86.5)	52 (20.2)
Governmental employer	0	51 (100)	51 (19.8)
Husband's education			
1 -4 grade	5 (9.8)	46 (90.2)	51 (19.8)
5-8 grade	31 (40.3)	46 (59.7)	77 (30)
9-12 grades	24 (30.8)	54 (69.2)	78 (30)
Higher education	0	51 (100)	51 (19.8)

gave their recent birth at health facility. This finding was high from the study conducted in Jhang district in Pakistan and Sahrti Samre district in Tigray which is 34.6% and 54%, respectively [8,9]. The reason may be study period and population.

The finding from this study revealed that about 61.9% were received the antenatal care. Which is almost similar to the study conducted by EDHS report 2014. But higher than the study conducted in five densely populated zone of southern region revealed that 26.1%, in Oromia, Ethiopia About 32.7%, In SNNPR, Ethiopia About 39%, of the women received ANC for their last pregnancy [10]. The possible reason for this finding may be study population difference and sample size.

In this study the magnitude of institutional delivery is 76.7%. This finding is better than the studies conducted in Oromia, Ethiopia 13.3%, in SNNPR, Ethiopia 14.9% and 41% by EDHS report of 2014 [11]. The possible reason for this finding may be study population difference and sample size.

In this study different factors were affect the choice of place of birth of the mothers during their last pregnancy. These factors are number of gravid, 76.1% of gravida I and 0.5% of gravida III and above mothers gave birth at health institutions. Dissemination of information during ANC visits on importance of institutional delivery and birth preparedness/complication (all mothers gate three sessions during ANC gave birth at health institutions). Educational statuses 75.11% of the mother who follow ANC were literate, which is different from the study conducted in Pakistan, Tigray, Ethiopia and Mizan Ethiopia?

This study showed that mothers who were visited ANC four and above gave birth at home. These finding is different from the study conducted in Indonesia and Kenya ANC4+ visits showed increased association with institutional delivery [12]. The difference may be majority of the participants were primigravida and the primigravida mothers want to give birth at their mother's home after they finished the ANC follow up, because of religion and culture.

Table 3: Obstetric history that can affecting institutional delivery service (N=257).

Variable	Place of delivery		Total # (%)
	Home Number (%)	Health facility Number (%)	
Total pregnancies			
One-four	31 (51.7)	176 (89.3)	207 (80.5)
Five-six	29 (48.3)	21 (10.7)	50 (19.5)
Number of pregnancies in the last 2 years			
One	60 (23.3)	197 (76.7)	257 (100)
Number of under five children			
One	31 (51.7)	150 (76.1)	181 (70.4)
Two	5 (8.3)	46 (23.4)	51 (19.8)
Three	24 (40)	1 (0.5)	25 (9.7)
ANC for your recent pregnancy			
Yes	7 (11.7)	122 (61.9)	129 (50.2)
No	53 (88.3)	75 (38.1)	128 (49.8)
Gestational age for Yes for ANC			
1st Trimester	7 (11.7)	78 (39.6)	78 (33.4)
2nd Trimester	0 (0)	44 (22.3)	51 (17.8)
No	53 (88.3)	75 (38.1)	128 (49.8)
How many times visit ANC clinic			
Two	7 (11.7)	44 (22.3)	51 (19.8)
Three	0 (0)	78 (39.6)	78 (30.4)
Why ANC visit			
I was sick	0 (0)	25 (12.7)	25 (9.7)
Good service	0 (0)	26 (13.2)	26 (10.1)
To know my health status	7 (11.7)	71 (36)	78 (30.4)
Did you receive any advice where to deliver			
Yes	7 (11.7)	122 (61.9)	129 (50.2)
No	53 (88.3)	75 (38.1)	128 (49.8)
If No for ANC why?			
Work load	0 (0)	52 (26.4)	52 (20.2)
feel sham	24 (40)	1 (0.5)	25 (9.7)
Don, t knows importance	29 (48.3)	22 (11.2)	51 (19.8)
Do you know any danger signs of pregnancy			
Vaginal bleeding	5 (8.3)	175 (88.8)	180 (70)
Reduced/absence of fetal movement	55 (91.7)	22 (11.2)	77 (30)

There are different reasons for women to not follow antenatal care. The common reasons were due to long waiting time to get service at health facility, husband disapprovals, being busy and perceived good health. These reasons are consistent with the finding of other studies in Ethiopia [1].

Mothers who gave birth at home have different reasons 46% of them think giving birth at health facility has no necessity, 33% of mothers said the service at health facility is not customary, 21% of the mother said that the health facility was either too far or that they did not have transportation. Urban woman were more likely than rural women to report that health facility deliveries are not necessary (64% versus 45%). But rural women were more likely to report that facility deliveries are not customary (33% versus 21%), or that health facilities were too far or they had no transportation (22% versus 15%) [11].

Most decision 78.74% about institutional delivery were decided by both husband, which higher than the study conducted in

mizan aman town, Ethiopia 22.97% [13]. From the participants 20.8% of the mothers had the right to choose their delivery to health institutions. Almost all of the participants 99.5 wish to have a baby at health facility for their next delivery. This number is greater than the study done in Mizan Aman town 88% [13].

Conclusion and Recommendation

Conclusion

This study found that the magnitudes of home delivery among mothers who has high number of gravida, no/low educational status, poor arrangement for place of birth, distance from health facility, health education during ANC visit and their plan to home delivery were high. Therefore efforts should be made to address these gaps/factors which affect institutional delivery.

Recommendation

The health care providers better to strengthen Health education

Table 4: History of the recent delivery (N=257).

Variable	Place of delivery		Total # (%)
	Health facility	Home	
	Number (%)	Number (%)	
Total pregnancies			
One	31 (51.7)	150 (76.1)	181 (70.4)
Two	29 (48.3)	47 (23.9)	76 (29.6)
If at home who assisted you			
Mother and other relatives	16 (26.7)	0 (0)	16 (6.2)
TBA	44 (73.3)	0 (0)	44 (17.1)
Why, at home			
Easily labor	50 (81)	0 (0)	50 (19.5)
God help me	11 (18.3)	0 (0)	11 (4.3)
Condition of your last baby			
Live birth	60 (23.3)	197 (76.7)	257 (100)
If you gave birth at health facility for the recent baby, why			
No fee	0 (0)	25 (12.7)	25 (9.7)
Good service	0 (0)	104 (52.8)	104 (40.5)
Family allowed	0 (0)	26 (13.2)	26 (10.1)
Who decide where you gave birth and by whom			
Myself	36 (60)	41 (20.8)	77 (30)
My husband	24 (40)	1 (0.5)	25 (9.7)
Both of us	0 (0)	155 (78.7)	155 (60.3)
Do you think there is a difference giving birth at home and health facility			
Yes	60 (23.3)	197 (76.7)	257 (100)
If you think health facility if better (question) how and why			
Save mothers life	55 (91.7)	152 (77.2)	207 (80.5)
No bleeding	5 (8.3)	20 (10.2)	25 (9.7)
save child life	0	25 (12.7)	25 (9.7)
If you think home if better (question) how and why			
There is privacy	60 (100)	42 (21.3)	102 (39.7)
Did you have any history of difficult labor (obstructed labor)?			
Yes	24 (40)	54 (27.4)	78 (30.4)
No	36 (60)	143 (72.6)	179 (69.6)
Where do you preferred to give birth for your next delivery			
Home	24 (40)	1 (0.5)	25 (9.7)
Health facility	36 (60)	196 (99.5)	232 (90.3)

Most of the participants 76.7% (n=197) were gave their recent birth at health facilities

for ANC attendants in hospital to encourage institution delivery, convince the advantages of institutional delivery. The Health bureau leaders and concerned body have to arrange transportation, i.e., proper ambulance services for mothers during labor and delivery.

ETHICAL CONSIDERATION

Ethical clearance was obtained from the Institutional Review Board of the Hawassa University. Communication with Hawassa university referral hospital administrators through formal letter obtained from Hawassa University. After informing about the purpose and objective of the study, written and verbal consent was obtained from each study participant. Participants were also being informed that participation was on voluntary basis and they can withdraw at any time from the study if

they were not comfortable about the questionnaire. In order to keep confidentiality names of the participant was excluding as identification in the questionnaire.

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AUTHORS' CONTRIBUTION

ZT wrote the proposal, participated in data collection, analyzed the data and drafted the paper. MM approved the proposal with some revisions, participated in data analysis and revised subsequent drafts of the paper. All authors read and approved the final manuscript.

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