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Original Research Article

Institutional delivery service utilization among Pastoralists of Dubti district, Afar region, Northeast Ethiopia, 2014

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Abstract: Maternal health has emerged as global priority because of existing gap between Agrarian and pastoral communities. A women's health is critical to her own life, and to the well-being of her family and the economy of her community and her country. But 99% of maternal deaths do occur in developing countries. Place of delivery is a crucial factor that affects the health and wellbeing of the mother and newborn. Even though 34% of pregnant women received at least one antenatal care from Ethiopia by 2013, institutional delivery was only 10%. The main objective of the study was to assess the prevalence of institutional delivery especially on pastoralist community of Afar region, North Eastern Ethiopia. Community based cross-sectional study was carried out from January to February 2014. Multi stage sampling technique was used to select 788 sample participants. A structured interviewer administered questionnaire was used to gather the required data. The collected data was coded, entered, and cleaned on Epi Info version 3.5.4 and it was finally exported to SPSS version 20 for further analysis. Frequency distributions, cross-tabulations and a graph were used to describe the results of the study. In results Ante Natal Coverage (ANC) of the district was 42.4% and there was only 7.4% institutional delivery service utilization. Educated mothers had significant association with Health facility preference. Being educational status of college/university graduate was about 5 times more likely to give birth at health institutions than their counterparts. (AOR= 5.052, 95% CI: 1.184, 21554). In conclusion Institutional delivery was 7.4% in the study area which is the lowest in Ethiopia. Home delivery is still dominant in pastorals. Increasing maternal health service coverage and accessibility; transportation and improving Information Education Communication (IEC) must be intensified in order to reach all segments of the population, particularly for the rural Pastoralist mothers.
Keywords: Maternal health service utilization, institutional delivery, Pastoralists, Afar Region, Northeastern Ethiopia.

INTRODUCTION

Pastoralism is found in many variations throughout the world. Pastoralist communities are viewed as those whose livelihood depends on and typically derive at least 50% of their food and income from their livestock. On the other hand, pastoralist communities are those pastoralists with spatial mobility, and mobility is a key to the dynamics of their life and mode of adaptation to semi-arid and arid environments. In sub-Saharan Africa the size of pastoralist population is estimated to be around 50 million, out of which 20 million are found in Ethiopia, Eritrea, Djibouti, Somalia and Uganda. About 12% of Ethiopia's 74 million people covering 63% of the country's land mass are pastoralists[10]. Afar National Regional State is characterized by an arid and semi-arid climate with low and erratic rainfall. The altitude of the region ranges from 120m below sea level to 1500m above sea level. Temperatures vary from 20'C in higher elevations to 48'C in lower elevations. Rainfall is bi-modal throughout the region with a mean annual rainfall below 500 mm in the semi-arid western escarpments and decreasing to 150 mm in the arid zones to the east. Afar is increasingly drought prone. The production system of the Afar region is dominated by pastoralism (90%) from which agro-pastoralism (10%) is now emerging following some permanent and temporary rivers on which small scale irrigation is developed. Various studies indicated that the health care needs of mobile pastoralists have been less addressed as compared to agrarian and settled communities. This inequality in health care utilization has been shown to be common particularly among Ethiopian pastoralists.

To make the achievement of the fifth Millennium Development Goal (MDG) a reality, Maternal Mortality Rates (MMR) will have to decrease at a much faster rate especially in sub-Saharan Africa. The recently released 2011 Ethiopia Demographic and

Health Survey (EDHS) reported MMR of 676 deaths per 100,000 live births by 2011 compared to 673 deaths per 100,000 live births by 2005. The proportion of institutional delivery with a skilled health professional is only 10% in Ethiopia. Antenatal Care Service utilization have shown gradual improvement from 28% in 2005 to 37 % in 2011,the births attended by skilled health personnel increased from 6% in 2005 to 10% in 2011 [1]. Between July 2007 and June 2008 (Ethiopian Fiscal Year/EFY 1999-2000), 174,561 deliveries were attended by skilled health professionals in 751 health facilities delivering maternity services. From all those deliveries only 3% were attended in institutions with fully functioning of Emergency obstetrics and Neonatal care (EmONC) facilities. According to report from Federal Ministry of Health (FMOH) on Ethiopian regions institutional delivery service utilization; Harari region had the highest proportion of women giving birth in health facilities (48%), while afar region had the lowest (2%) [2].

In Sub-Saharan Africa, where 1 in 39 women risks dying from maternal causes in her lifetime, the MMR was 500 deaths per 100,000 live births in 2010 [3, 4].

Maternal health service utilization is still challenging in developing countries including Ethiopia about 78% of women attend antenatal clinic but only 16% of deliveries are assisted by skilled professionals[5].

Several studies have been done worldwide talking about factors affecting ANC and delivery service utilization in health facilities; the factors that have been studied include socio demographic factors, socio economic factors, availability of health services, accessibility, behavior and attitudes of health care providers and socio cultural issues[6,7,8]. It is argued that differential access to health care facilities between the agrarian and pastoral areas is an important factor for lower maternal health services particularly for institutions delivery assistance by health personnel9,7].

In Ethiopia about 10% of women deliver in health facilities with high variation among regions less than 10% in Southern Nations & Nationalities and Peoples Region (SNNPR), Afar, Oromiya, Somalia, and Benishangul-Gumuz regions to 82% in Addis Ababa[1].

Very little is known about delivery service utilization, which shows a gap on maternal service utilization practices. But there are no recent studies done on maternal health service utilization in the particular study area. Therefore, this study aimed at assessing prevalence of institutional delivery service utilization among women residing in dubti district of Afar region.

METHODS AND MATERIALS

A community based cross-sectional quantitative study design was carried out from January to February 2014 in Dubti district of Afar regional state. Afar region is located in North Eastern part of Ethiopia, near Djibouti. Afar is characterized by an arid and semi-arid climate with low rain fall. The altitude of the region ranges from 120m below sea level to 1500m above sea level. Temperatures vary from 20 ^{0}C in higher elevations to 48 ^{0}C in lower elevations. Dubti is found at the North Eastern part of Ethiopia located at 620 Km from Addis Ababa and 12 Km from the capital city of the Region, Samara. The estimated projected populations for 2013 in these worked were about 66,585 [10]. There were one Referral hospital backup with emergency obstetric care service, 2 health centers and 9 Health post in the District.

All women of reproductive age (15–49 years) residing in Dubti District were source populations and women of the reproductive age, who gave birth within two years prior to time of data collection were study populations. Women, who gave birth in other places but living in the study area, were excluded from the study. The sample size in the present cross-sectional study was calculated by using a single proportion formula- $n = \frac{Z^2_{(\alpha/2)}p(1-p)}{w^2}$. where n is the sample size, **z** is the standard normal deviate, set at 1.96 (for 95% confidence level), **w** is the desired degree of accuracy (taken as 0.05) and **p** is the estimate of the proportion of ANC service utilization (P assumed to be 63% [21]. Considering multistage nature of the study; a design effect of **2** was considered. Thus, **n = [1.96^2 x 0.63(0.37)/0.05^2] x 2 =716.** Adding possible 10% non-response rate yielded in a final sample size of **788.**

Multi stage sampling technique was used to select 788 study participants with inclusion criteria. The data was collected by pretested, adapted, structured and interview administered questionnaires. The questionnaire was initially prepared in English and then translated into Afaraf (local language). It was again translated back into English to check for any inconsistencies. Six female diploma Nurses, who are fluent speakers of both Amharic and local language, were hired as data collectors. One master's degree holder and one BSc degree holder supervisors were selected from Samara University and the Dubti District Health Office respectively. Data enumerators and supervisors were given one day training on procedures, techniques and ways of collecting the data. The supervisors were checking the completeness & consistency of the gathered information.

After data collection, it was coded, entered, and cleaned on Epi Info version 3.5.4. Finally the data was

exported to SPSS version 20 for further analysis. Frequencies and cross tabulation were used for the descriptive analysis. Associations between factors affecting ANC utilization and independent variables were analyzed. In the analytic statistics, both univariate and multivariate analysis were made, in the binomial analysis, explanatory variables having a p-value less than or equal to 0.02, variable having association in crude odds ratio, and variables shown association in different literatures was taken for multinomial analysis. Ethical approval was obtained from Samara University, ethical review committee. All study populations were encouraged to participate in the study while at the same time they were told their right not to participate.

RESULTS

Socio-demographic Characteristics of the respondents

A total of 788 mothers who gave birth during the late two years preceding the survey were interviewed. Of which 182[23.1 %] were from Dubti Town and 606 [76.92%] were from the Rural kebeles. Out of all those interviewed, 671 (85.2%) belonged to the Afar ethnic group. The majority of women, 670 (85%), were married and 757 (96.1%) were Muslims, The minimum and maximum age was 16 and 45 years respectively with mean age of 29.9 years and SD of 6.3 years. Majority of the respondents were illiterate 448(56.9%) and more than half 407(51.6%) of the study participants lead Pastoral way of life. The minimum and maximum monthly income of the respondent was birr 100 and 3000 respectively with mean difference of 1182.67 + SD of 772.4.

Source of information; 473 (60%) of women share Dague (cultural way of information transmission in local Afar society) as the main Source of information dissemination **(See Table1).**

Table-1: Socio-demographic characteristics of respondents in Dubti District; Afar, Feb, 2014

Characteristics	Number	Percent (%)
Residence (N=788)		
Urban	182	23.1
Rural	606	76.9
Age (N=788)		
16-19	67	8.5
20-24	83	10.5
25-29	245	31.1
30-34	177	22.5
35-39	158	20.1
40-44	52	6.6
45-49	6	0.8
Mean + SD		29.9+6.3
Ethnicity (N=788)		
Afar	671	85.2
Amhara	73	9.3
Others	44	5.6
Religion(N=788)		
Muslim	757	96.1
Christian	31	3.9
Education (N=788)		
illiterate	448	56.9
Primary and Secondary school	327	41.5
College/ university Graduate	13	1.6
Marital status (N=788)		
Married	670	85
Unmarried	118	15
Source of Information (N=788)		
Dague	473	60.0
Health extension workers	432	54.8
Radio	266	33.8
Television	182	23.1
Others	17	2.2
Monthly income (n=391)		
<=1000 birr	212	54.2
>1000birr	179	45.8
Mean +SD		+ 772

Reproductive history

Only 82 (10.4%) of the study subjects, interviewed were primigravida, while the majority 706 (89.6%) were multigravida. In addition more than 74.4% of the respondents had no history of abortion or stillbirth. **(See Figure 1).**

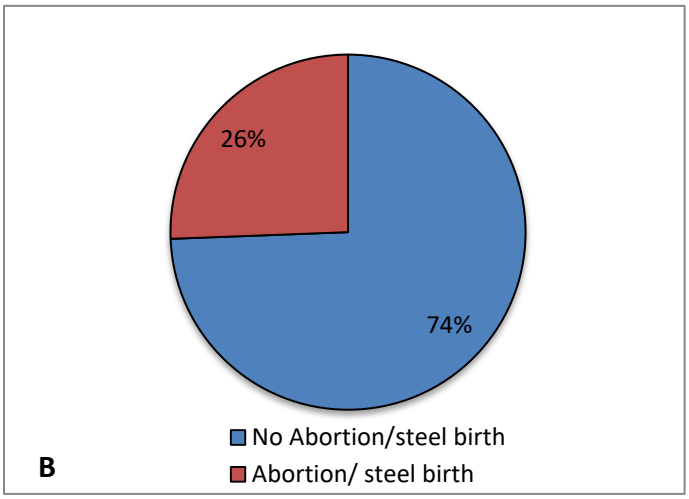

Fig-1: Reproductive history of respondents in Dubti District; Afar region, Feb, 2014

Antenatal and delivery service utilization of respondents

Of the 788 women who were asked about their ANC follow up for their last pregnancy, 334 (42.4%) had attended at least one ANC visit where Only 65(19.5%) of mothers had four and above visits. Out of those ANC attendants only 58(7.4%) had delivered at health institution with support of skilled professional. (**See figure 2**).

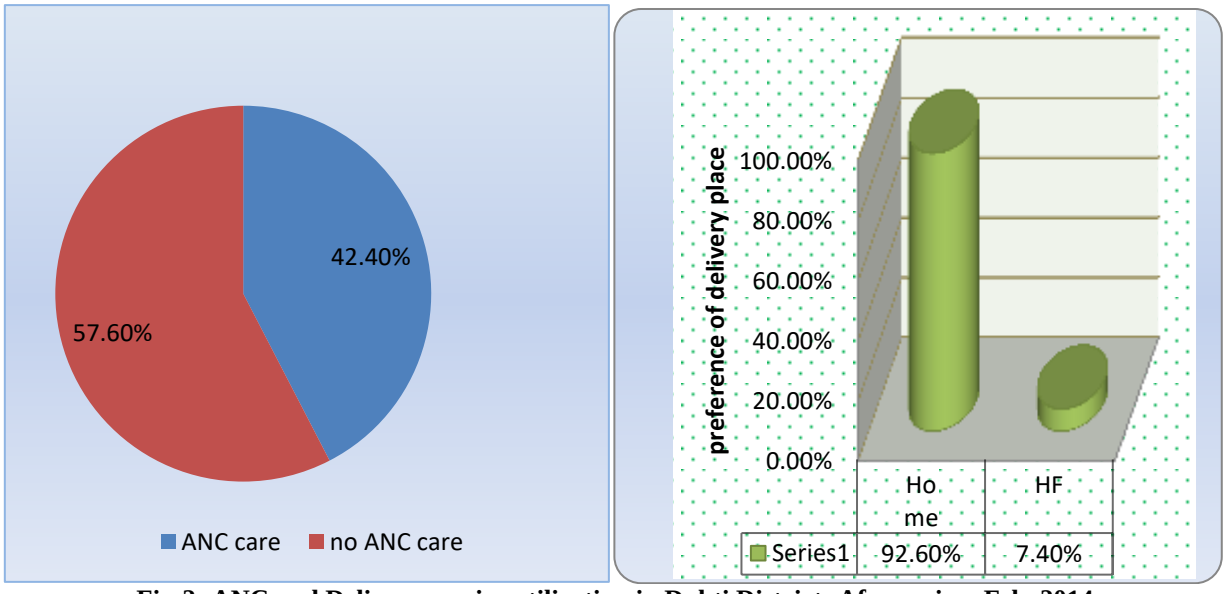

Fig-2: ANC and Delivery service utilization in Dubti District; Afar region, Feb, 2014

Determinants of Institutional delivery service use

Lack of Awareness, long distance travel and Lack of husband permission were major reasons for ANC non-attendance and home delivery. About 64.5% of total women interviewed lives at a distance of more than 5km away from health facility**.** 406 (51.5%) of Home deliveries were assisted by TTBAs. (**See Table 2**)

Table 2: Determinants of skilled Delivery service use in Dubti District; Afar, Feb, 2014

Variables	Number	Percent (%)
Number of ANC Visits (n=334)		
Less than 4 visits	269	80.5
Four and above visits	65	19.5
Reasons for no ANC (n=454)		
Lack of Awareness	226	28.7
Distance of Health institution	206	26.1
Lack of Husband permission	104	13.2
Poor service satisfaction	80	10.2
Presence of Male midwife	66	8.4
Lack of time	34	4.3
Costly service	19	2.4
Birth Assistant (n=730)		
TTBAs	406	51.5
Family/Relatives	198	25.1
neighbor	105	13.2
others	21	2.7
Reasons for Home delivery (n=730)		
Lack of Awareness	390	49.5
Lack of transportation	314	39.8
Distance of Health institution	230	29.2
Emergent labor	165	20.9
Bad behavior of health professionals	87	11.0
Presence of Male professionals	104	13.2
Disbelieve in modern treatment	33	4.2
Other	34	4.3
Proximity (N=788)		
<=5km	280	35.5
>=5km	508	64.5

DISCUSSION

Home delivery is still a norm in many developing countries; maternal mortality tends to be highest where this is the case. In this study, 92.6% of births took place at home. This study is not consistent with study done in North West Ethiopia [17] and EDHS 2014[11] survey where home delivery was 86.2 % and 85%respectively.

Institutional delivery is associated with: income, Educational status, and Service satisfaction. Institutional delivery utilization in this study is very low and it is although lower than study done in Arsi zone which is 16% [12]. although higher prevalence has been observed in other regions (12.1%, 12.3%, 16%, 18.2%) but it is higher than study done in rural areas of South East Ethiopia (4.3%) and Tigray (4.1%) [13], an explanation of these differences might reflect that, as well as institutional delivery utilization between different geographical areas: urban better-off areas versus rural areas, such as the one represented in this study, where women face more difficulties in accessing delivery services. On the other hand, although institutional delivery is low in this study, a substantial proportion of women (61.7%) are in favor of it for the future delivery. This could be for various reasons; it might be due to social-desirability bias, thinking home delivery as a norm in the community, or because women might not have the decision-making power; the husband may have executive decision.

Results of this study revealed that use of skilled birth attendants were significantly associated with the level of education; women with higher level of education (college graduate) were five times more likely to use safe delivery services than those with lower education levels with Adjusted Odds Ratio (AOR) of 5.052 and 95% CI of 1.184, 21.554. This finding is similar to most maternal and child health studies conducted in developing countries as studied by Yared using EDHS data, studies done in Bangladesh, Zambia and North Gondar Zone which showed mothers with higher educational status were more likely to utilize delivery care service[14]**.** This may be the fact that, education is likely to enhance female autonomy and greater confidence with capacity to make decisions about their own health.

Place of residence showed significant association with institutional delivery in many literatures but this issue is not working in the current research; this might be because of urban and rural residences in the study area may not have such

difference in population life style, availability of health facilities and culture.

Use of maternal health services is influenced by cultural beliefs, attitudes and practices of the pastoral community. There are several cultural barriers to women's use of health facilities. One of them is women's fear of male midwives touching their bodies, especially their reproductive organs. In this study about 16% of women do not attend delivery in health facility because of Abhorring being attended to by male professionals. As to this study Male Professionals in labor unit are 3.5 times significantly shown to decrease prevalence of institutional delivery; having AOR of 3.504 and 95% CI of (1.067, 11.505). This study is supported by a qualitative study done in Afar Region by which a woman said: "It is only God and my husband who have the right to see me naked. It is really impolite (culturally) and unacceptable in Afar to expose the reproductive health organs." [15] Bad behavior of health professionals and absence of drug and supplies were other major reasons for home delivery.

CONCLUSION AND RECOMMENDATION

Skilled delivery service utilization increases with mother's education and household wealth. This study revealed low utilization of ANC attendance and lowest skilled delivery service utilization compared to the recommendation by safe motherhood. Long distance travel; lack of service satisfaction and lack of awareness during pregnancy were the main reasons mentioned for non-attendance of ANC.

Accessible health facility; improving information, education and communication on maternal health services must be intensified in order to reach all segments of the population, particularly the rural mothers. Women empowerment through education; involvement in behavioral change Activities; Cultural influence being not treated by male birth attendants should be evidenced by qualitative study.

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