Assessment of Neonatal Mortality in Women Who Gave Birth Recently: A Community Based Cross Sectional Study in Lume District of Oromia Region, Eastern Ethiopia

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Abstract

Introduction: Childhood mortality often used as a specific health indicator where child health programs were given low attention; especially neonatal health lacks adequate information in the study setup. This study aimed to assess neonatal mortality and factors affecting health care utilization.

Methods: A cross sectional study design was employed in Lume District using Multistage sampling technique. Five rural kebele (sub unit of administration) were selected using simple random sampling and systematic random sampling technique to select study population. Structured questionnaire used to collect data and analyzed by SPSS version 20.

Result: Nineteen neonatal death per one thousand live birth happened. Mothers who live in urban were two times sought health institution for delivery than rural mothers [AOR=1.9, 95% CI: (1.1, 4.0)]. Merchant mothers were three times more likely to seek professional help than daily laborer [AOR=3.0, 95% CI: (1.1, 14.5). Mothers who road was accessible were 2.8 times more likely to seek health institution for their neonate than non-road accessible mother [AOR=2.8, 95% CI: (1.2, 6.4). Neonatal sickness and neonatal death were negatively associated with mothers seeking health institution [AOR=0.02, 95% CI: (0.1, .02) and [AOR=0.07, 95% CI: (.01, .8) respectively.

Conclusion and recommendation: In this study it is learnt that neonatal mortality is low and institutional delivery was high. Road accessibility, residence, occupation of the mother, neonatal sickness, neonatal death and postnatal care were significantly associated with utilization of mother's modern health institution for last delivery.

Keywords: Antenatal care; Neonatal mortality; Institutional delivery; Prenatal care; Ethiopia

Abbreviation

ANC: Ante Natal Care; AOR: Adjusted Odds Ratio; COR: Crude Odds Ratio; CSA: Central Statistical Agency; EDHS: Ethiopian Demographic Health Survey; PNC: Prenatal care. MCH: Maternal and Child Health; WHO: World Health Organization

Introduction

Neonatal mortality is the death of live-born baby within 28 completed days of birth. The neonatal period carries a great risk of mortality [1]. Childhood mortality is often used as broad indicator of the social development or a specific indicator of health conditions of a country. However, child health programs were given low attention; especially neonatal health [1-3]. High-income countries have low neonatal mortality because they have high priority on neonatal health

Ethiopian demographic health survey 2011 shows that the neonatal mortality rate is 37 deaths per 1,000 live births. The achievement of Millennium Development Goals (MDGs) 4 and 5, which are Concerned with reduction of child and maternal mortality respectively have stagnated despite many efforts to achieve the goals [2].

In Oromia regional state neonatal mortality is 40% which was almost similar to national mortality rate; this figure indicates there was high Mortality in the region. And also there was no any scientific documentation of the magnitude of neonatal mortality and associated factor in the study area. Considering this, the study intended to determine magnitude of neonatal mortality and associated factors, and level of service utilization to deal with the problem of neonatal morbidity in the study area.

Methods and Materials

Study area

The study was conducted in Lume District of East Shewa Zone in randomly selected Kebeles (sub-administrative unit) of the District found in the Great Rift Valley of Ethiopia. The total population profile of the district estimated about 107,080 from the projection of Ethiopian population and Housing Census 2007 [12]. From this women in child bearing age estimated to be 21,724 and expected deliveries estimated to 3,406 mothers in the study year.

Study design

A community based cross sectional study design was carried out from February to April, 2016 in randomly selected Kebeles of the study area.

Population and inclusion criteria

Source of population was mothers within childbearing age (15-49) living in the randomly selected kebeles of Lume District, East Shoa Zone out of which randomly selected Mothers, who gave birth within the last 12 months living in the sampled kebeles of Lume District, East Shoa Zone included in the study population.

Exclusion criteria

To maintain the homogeneity of the population in study mothers who did not gave birth in the District in the past one year prior to the survey were excluded. Mothers critically ill, mentally and physically not capable of being interviewed and those newborn died and under 15 days at the time of interview also excluded from the study.

Sample size determination

Sample size was calculated using the formula for a single population proportion by considering a prevalence of 37 neonatal deaths per 1000 from Ethiopian Demographic Health Survey Nationally done in Ethiopia (7), at 3 percent margin of error, 95 percent confidence interval (=05). The calculated sample size was 304. With the addition of 10% for possible non-response rate the final number became 334. Then multistage sampling technique was used to select respondents. First five rural kebeles were selected using simple random sampling and households in the selected kebeles were included by systematic sampling method and then all eligible women were included for the study.

Study variables

Variable of the interest was neonatal mortality while information was gathered on variables including socioeconomic factors, maternal and paternal factors, neonatal factor (sex, birth order, birth weight, and multiple gestations), prenatal (ANC service), delivery and essential newborn care, PNC service, sick neonate treatment.

The study used quantitative methods of extracting pertinent information to attain its objectives by structured questioners. Data collection done by eight grade 10 or 12 completed females, two from each selected kebeles, and two male nurse supervisors from were recruited and trained for two days by the principal investigator about the purpose of the study and on the skill of interviewing the subjects. Lists of mothers, who gave birth within the last 12 months were taken from the selected Kebele health posts and by doing systematic random sampling illegible mothers were identified for the study.

To assure the quality, the research questionnaire were prepared in English version and translated in to loc

Result

Socio-demographic characteristics of study population

From the total of 334 planned sample size, 312 (93.4%) women were interviewed for the survey; age at last birth of women show that, 68 (22%) were less than the age of 20 years, 188 (60%) between the age of 20 and 34and the remaining 56 (18%) were between the age of 35 and 49 with mean age of 25.95.

Variables		**Frequency**	**Percent**
Age at last birth	<20 y	68	22%
	20-34	188	60%
	>35	56	18%
Marital status	Married		

	20-34	188	60%
	≥35	56	18%
Blood pressure measured (n-309)	Yes	303	98%
	No	6	2%
Weight measured	Yes	306	99%
	No	3	1%
TT vaccination	Yes	308	98.8
	No	4	1.2
Folic folate provided	Yes	182	58.3
	No	130	41.7
PNC 1	Yes	265	84.9

Merchant	6	4	4.9 (1.2, 19.7)		3.0 (1.1-14.5)*
Housewife	142	29	1.5 (0.7, 3.0)		1.5 (0.7, 3.2)
Daily laborer					

In case of PNC utilization, in this research 124 (39.4%) had PNC as comparing this result with a research done in Dembecha District, Northwest Ethiopia; Post Natal Care service utilizations was 276

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