

# Survival Status and Predictors of Neonatal Mortality among Neonates Who were Admitted in Neonatal Intensive Care Unit at Arba Minch General Hospital, Southern Ethiopia

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Neonatal mortality is the death of new-born occurring within the 28th day of life. Almost 2/3rd of infant deaths occur in the 1st month of life, among these, more than 2/3rd dies in their 1st week and among those also, 2/3rd dies in their 1st 24 hours. The objective of this study was to assess the survival status and predictors of Neonatal mortality among Neonates admitted in the Neonatal intensive care unit of Arba Minch General Hospital, Southern Ethiopia.

## Introduction

The neonatal period refers to the period in the first 28 days of life, is the most crucial time for Child's survival [1]. Neonatal mortality is the death of neonates that happens within the first 28th day of life. It is also divided into early neonatal mortality which is before the seventh day of life and late neonatal mortality which is occurring thereafter [1]. A large majority of new-borns do not develop any serious problems and need only minimal care [2]. There is a relatively rapid decline in the global mortality of fewer than 5 children [3].

In the world, from under 5 children mortality, nearly half of death occurs during this period [4,5]. Most of the neonates died in their early neonatal period. This period is highly vulnerable time for the neonate who is completing many of the physiological adjustments required for extrauterine existence and also almost two-third of infant deaths occur in the 1st month of life, among these, more than two thirds die in their 1st week and among those also, two thirds die in their 1st 24 hours [6]. The 1st 28 days of life is the most hazardous period for the child's survival.

Globally in the year 2016, about 2.6 million children were died in the 1st 28 days of life (neonatal period) and there was the highest risk of childhood mortality which occurs in this period, at a global Neonatal mortality rate of 19 deaths per 1000 live births which means about 7000 neonates died every day. Among these, most of which was occurred in the 1st week of life, with about 1 million neonatal deaths occur within the next six days [7].

The Ethiopian government and other stakeholders involve in the reduction of neonatal mortality such as USAID focus and delivered integrated health service packages of health as evidence-based interventions across a continuum of care at different levels like at the level of the family, community and facility levels by enhancing the availability and

## Materials and Methods

Study design, setting, and population Institution-based retrospective cohort study was conducted to assess the survival status and predictors of Neonatal mortality among Neonates who admitted in Neonatal Intensive care unit in Arba Minch General Hospital. Arba Minch General Hospital was selected for this study which is one of the four hospitals in GamoGofa zone situated in SNNPR, Gamo \*ojaZone, in Arba Minch town.

The study was conducted from January 01, 2015 to December 31, 2017, G.C. All Neonates age less than 28 days who were admitted to Neonatal Intensive Care Unit (NICU) in Arba Minch General Hospital where the source populations. The starting point is from admission to the Neonatal intensive care unit between January 1, 2015, to December 31, 2017, G.C and the endpoint was either death or recovery, loss to follow up, transferred to another health institution and follow up time is completed without outcome happening. In this study, any neonate who withdraws a treatment discharged alive transferred out, and did not develop the outcome up to the end of the study period is considered as censored. It was an open cohort and anyone within the study period was entered into the study and leave the study.

**Result:** About 19.4%, 58.2% and 91% of neonates died within the 1st 24 hours, 1st 3 days and within 1st 7 days respectively. The cumulative proportion of surviving at the end of the 1st, 7th, 14th and 21st day was 96.1%, 75%, 69.9%, and 66.2% respectively.

Mothers time of rupture of membrane >12 hours before delivery (AHR:2.6; 95% CI:1.28, 5.34), Mother who gave birth order 2-4 (AHR:2.5; 95% CI:1.21, 5.34), Mothers who have birth order >5 (AHR:7.1; 95% CI:3.54, 14.42) and neonates who have 5th minute APGAR score <5 (AHR:5.2; 95%

CI:3.08, 8.79) were the independent predictors of Neonatal mortality.

**Conclusions:** The number of neonatal mortality is high in the 1st 24 hrs, 1st 3 days and 1st seven of admission and minimal death after half of the neonatal period and afterward. Mothers who have rupture of membrane >12hours, Birth order and APGAR score were the independent predictors of Neonatal mortality.