

Survival status and predictors of time to death among neonates admitted to Neonatal Intensive Care Units in West Shewa Zone, Oromia Region, Ethiopia: A prospective cohort study

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Background: Neonatal mortality is the death of neonates that happens within the first 28th day of life. The first 28 days of life is the most vulnerable time for a child's survival. Hence the aim is to estimate the survival time and to investigate predictors of neonatal mortality among neonates admitted NICU at public hospitals west shewa zone, Ethiopia.

Methods: Hospital -based prospective cohort study was conducted among 495 newborns admitted in public hospital neonatal intensive care unit from August 01 to December 2019. Data was entered into EPI info version 7.1 and exported to STATA version 14 statistical software for analysis. Kaplan and Meier's method was used to estimate neonatal survival functions and Cox-proportional hazard regression analysis was carried out in order to identify the independent predictors of time to death.

Results: A total of 495 neonates were followed for 28 days at NICU and 78 were died and making the Neonatal Mortality Rate (NMR) was 157 per 1000 live births. During the follow-up, 20 (25.6%) neonates died in the first day, 39 (50%) neonates died within three days and 70 (89.7%) neonates died within a week. The independent maternal predictors of time to death were; hypertension during pregnancy (AHR:1.78(95%CI:1.04-3.03), anaemia during pregnancy (AHR:2.00;95%CI:1.13-3.54), short birth interval (AHR:1.55;95%CI:1.03-2.34), induced labor (AHR: 3.25;95%CI: 1.87-5.65), no ANC follow up (AHR: 2.06 ;95% (CI: 1.26-3.38) and Neonatal predictors were: sever APGAR at five minutes (AHR:2.59;95%CI: 1.53- 4.38), not initiating breastfeeding within one hours (AHR:1.8;95%(CI: 1.13-2.99).

Conclusion and Recommendations: The risk of mortality among neonates admitted to the NICU was high. Both maternal and neonatal predictors were found to determine survival status and timing of death among neonates admitted to the NICU. In order to reduce the incidence of death, efforts should be initiated before conception by adequate birth spacing and during pregnancy by encouraging women to start ANC follow-up and get treatment for medical disorders during pregnancy. Providing all initial new-born care and early identification of new-borns that need critical care will improve survival of neonates at low-resourced NICU.

Recent Publications

1. Seifu, B., Belema, D., Mamo, K., Bulto, G.A., 2021. Determinants of Neonatal Hypothermia among Babies Born in Public Hospitals of West Shewa Zone of Oromia Regional State, Ethiopia: Unmatched Case–Control Study. *Res. Reports Neonatol.* Volume 11, 13–21. <https://doi.org/10.2147/rrn.s293123>.
2. Seifu, B., Yilma, D., 2021. Prevalence and Associated Factors of Anemia among Lactating Women in Prevalence and Associated Factors of Anemia among Lactating Women in Ethiopia from 2010 to 2020 : A Systematic Review and Meta-Analysis. *BioMed Res J* 5, 327–342.
3. Bulto, G.A., Fekene, D.B., Seifu, B., Debelo, B.T., 2021. Determinants of Neonatal Sepsis among Neonates Admitted to Public Hospitals in Central Ethiopia: Unmatched Case-control Study. *Glob. Pediatr. Heal.* 8. <https://doi.org/10.1177/2333794X211026186>.
4. Seifu, B., Yilma, D., Daba, W., 2020. Knowledge, Utilization and Associated Factors of Postpartum Family Planning Among Women Who Had Delivered a Baby in the Past Year in Oromia Regional State, Ethiopia. *Open Access J. Contracept.* Volume 11, 167–176. <https://doi.org/10.2147/oajc.s268561>.
5. Fekene, D., Daba, G., & Seifu, B. (2020). Determinants of Adverse Birth Outcome in West Shewa Zone, Oromia Regional State, Ethiopia Hospital Based Unmatched Case-control Study.

Biography

Benyam Seifu Woldeyes was born in Addis Ababa, Ethiopia, in 1991. He received the BSc degree in Midwifery from Addis Ababa University, Ethiopia, in 2013, MSc Master Degree in Maternity and Reproductive Health from Addis Ababa University, Ethiopia, in 2017 and MPH Master Degree in General Public Health from Jimma University, Ethiopia, in 2019. In 2014 he joined Ambo University Department of Midwifery and engaged in teaching, community service and research from lecturer to his current position of Assistant Professor. He was able to published 11 manuscripts on the area of maternal & child health and reproductive health and 5 manuscripts under review process.

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