

Predictors of early neonatal mortality in public regional referral hospitals in Dar Es Salaam, Tanzania: A hospital-based prospective observational study

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ABSTRACT

Background: Neonatal mortality has been prevalent in many developing countries including Tanzania. There is mounting evidence that neonatal mortality has not stalled despite palpable evidence for reduced < 5 years mortality in Tanzania. The three public Regional Referral Hospitals in Dar es Salaam have high number of neonatal mortality according to the Demographic Health Survey-2 (DHS-2). There is no available retrievable information on predictors of early neonatal mortality.

Objective: To assess predictors of early neonatal mortality at the three public Regional Referral Hospitals in Dar-es-Salaam, Tanzania.

Methodology: A hospital-based prospective observational study was conducted at the neonatal units of three Regional Hospitals in Dar -es- Salaam from June to August 2023. A pre-designed Case Report Form was the main tool for data collection. Early neonatal mortality was the outcome variable. Continuous data were summarized using median (with inter-quartile range) and categorical data using frequency and proportion. Multivariable logistic regression model was fitted to account for predictors of early neonatal mortality after appropriate model validation. Unless otherwise stated, an α level of 5% was used as a limit for type 1 error. Written informed consent was sought from mothers of each baby prior to enrollment.

Results: A total of 370 neonates were recruited in the study and they were in final data analysis. Their median age was 6 days (IQR: 4-7). Mortality prevalence rate was 28.1% with birth asphyxia, preterm delivery and respiratory distress syndrome the leading causes of deaths. Predictors of early neonatal mortality were elevated respiratory rate (A.O.R.:1.017 (95% CI.: 1.001 – 1.03, p-value=0.009) and gestational age (A.O.R.: 0.815, 95% CI.: 0.721 – 0.922, p-value=0.029).

Conclusions: In this study early neonatal mortality rate was high. Elevated respiratory rate and increased gestational age were the significant factors associated with early neonatal mortality in this study.

Recommendations: In view of high prevalence of early neonatal mortality rate, further studies should be conducted to determine the underlying causes of early neonatal mortality. Special attention should be paid on neonates admitted with birth asphyxia, preterm delivery and respiratory distress syndrome.

Keywords: Early neonatal mortality, Dar es Salaam, Tanzania.