DETERMINANTS OF NEONATAL MORTALITY IN VILLAGES OF BALLABGARH BLOCK, HARYANA: A RETROSPECTIVE POPULATION BASED STUDY USING HIERARCHICAL MODEL

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Aim: To identify the determinants of neonatal mortality to support strategy development to reduce neonatal mortality rate in the study area as well as on a national level.

Methods: A nested case-control study involving villages under the Field Practice Area of Comprehensive Rural Health Services Project (CRHSP), Ballabgarh, Haryana serving a population of 85522. The study period was from 2005 to 2009. The data were obtained from Health Management Information System (HMIS) and analysed using multivariate logistic regression analysis. A hierarchical approach was used to analyze the factors associated with neonatal deaths, using community level factors, socio-economic status and biological determinants.

Results: The total live births during the study period were 10392 and neonatal deaths were 248. Socio-economic determinants (Low educational status of parents [OR 2.1; 95% CI, 1.4-3.3]; father's occupation [OR 1.8; 95% CI, 1.0-3.0]; Rajput caste [OR 2.0; 95% CI 1.2-3.4] were responsible for a major fraction (46%) of neonatal deaths. Community level factors (villages with no health facility [OR 1.5; 95% CI, 1.0-2.1]; villages with population > 6000 [OR 1.7; 95% CI, 1.2-2.5]) explained a total of 28% of all neonatal deaths. Proximate determinants (early childbearing age of mother (< 20 years) [OR 2.0, 95% CI 1.2-3.2]) were least important. All the three level of variables seemed to act independently with little mediation among them.

Conclusion: A comprehensive strategy addressing community level, socio-economic and biological determinants is required to reduce neonatal mortality.