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AN APPLICATION OF COX PROPORTIONAL HAZARD REGRESSION MODEL TO ASSESS THE PREDICTORS OF CHILD MORTALITY IN INDIA

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ABSTRACT

Background and Objective

The level of child mortality is more in India as compared to most of the other countries. This study examines the socio-economic and demographic characteristics associated with child mortality.

Methods

The present study utilizes data from the third round of the Demographic and Health Survey (DHS), known as the National Family Health Survey (NFHS), carried out in India during 2005–06 and were analyzed to assess the socio-economic and demographic factors associated with child mortality. The survey covers a representative sample of about 108504 ever-married women in the age group 15–49 who gave at least one live birth baby within 10 years preceding the survey. Univariate and multivariate Cox proportional hazard model along with complex sample analysis plan were used to understand the socio-economic and demographic factors associated with child mortality.

Result

Various socio-economic and demographic characteristics were found to be associated with child mortality. After controlling for other factors wealth index, caste, Birth order and birth interval were found to be significantly associated with child mortality. The hazard of child mortality was highest among ST (HR=2.157, CI=1.613-2.886, P value=0.000) as compared to other caste. Women having education high school and above were at 44.4% less risk (HR=0.556, CI=0.361-0.858) of child mortality as compared with illiterate women. The risk of facing child mortality is 2.66 times high in women with birth order 4 or more (HR=2.668, CI=1.984-3.588, P value=0.000) as compared to women with birth order one. Women with birth interval more than two years had 45.3% less risk (HR=0.547, CI=0.470-0.637, P value=0.000) of facing child mortality than those with birth interval less than two years. Male children were at 32.1% less hazard (HR=0.679, CI=0.588-0.783, P value=0.000) of child mortality as compared to female children.

Interpretation and Conclusions

Various socio-economic and demographic characteristics are found to be associated with child mortality. Findings support the need to focus on spacing between two births, age of mother at first birth, birth order and education of mother.

KEYWORDS: Socio-Economic, Demographic Factors, Child Mortality