

Association of fetal and maternal factors with mortality due to diseases and malformations of the circulatory system in children

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Objectives: To verify the association of characteristics recorded at the time of birth, including weight, occurrence of asphyxia, gestation duration, and maternal age and education level, with death from diseases and malformations of the circulatory system below the age of 18 years in children born.

Methods: The databases Information System on Live Births and Information System on Mortality were linked and evaluated following a strategy of longitudinal cohort analysis. We estimated the crude relative risks (RR) and the RR adjusted for the variables.

Results: We linked 6,380 deaths with 4,282,260 birth records, yielding 5.062 pairs considered true. Low birth weight (RR=2.26), asphyxia at 1 (RR=1.72) and 5 minutes (RR=1.51), prematurity (RR=1.50), maternal age \geq 40 years (RR=2.06), and low maternal education level (RR=1.45) increased the probability of death due to disease of the circulatory system. In the association with death due to malformations of the circulatory system, the predictive variables showed the same association profile, but with greater intensity.

Conclusion: Fetal and maternal factors studied were associated with increased mortality due to diseases and malformations of the circulatory system. Measures to control these factors and improve access to their diagnosis and treatment would contribute to reducing the deaths due to diseases and malformations of the circulatory system. However, the identification of environmental influences during gestation and birth on the risk of death should be carefully considered, as they are influenced by genetic factors.

Keywords: mortality, infant mortality, child mortality, heart disease, congenital heart disease, fetal factors, low weight, asphyxia, prematurity.