

## Maternal and Child Health: The Perinatal Paradox in a Developing Country

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### The Perinatal Paradox in a Developing Country

Several recent studies have demonstrated the exposure of social groups to bad health conditions. That puts individuals at the risk of experiencing adverse outcomes, which includes mostly transgenerational effects [1-3].

Concerning the mother's and the newborn's health, their socioeconomic conditions contribute to the occurrence Low Birth Weight (LBW) and preterm cases. According to the World Health Organization (WHO), among all the births in the world, around 20.6 million (15.5%) of babies are born with LBW.

Most of these cases are in developing countries (e.g. 27% in Asia against 6.4% in Europe), in which the rate of child mortality is similar to the maternal mortality, with a great incidence particularly in Africa and Asia [4].

Although the mothers' and newborns' access to health has improved in many countries, there are still huge inequalities between developing and developed countries and also regional differences inside them, evidencing the uneven health conditions of the population.

LBW rates in developing countries have been associated with adverse socioeconomic conditions, in which there are a great number of newborns with Intrauterine Growth Restriction (IGR), while in developed countries LBW is primarily related to preterm delivery [5].

This situation can be verified in Brazil, a medium-income developing country administratively organized in five regions with distinctive environmental, cultural and socio-economic circumstances.

Over the last decades, health social determinants have improved and access to health and technology has certainly enhanced; nonetheless, a disproportionate distribution of perinatal characteristics in the country can still be observed. Empirical results show a decrease in the child mortality rates and an increase in LBW and premature newborns in all regions, although with lower increase in less developed regions [3].

In terms of maternal characteristics and assistance in prenatal care and during delivery, data from the National Information System of Live Births [6] (SINASC), established in 1990, show an increase in the mother's education level and pregnancy in women over 35 years old, as well as a greater access to prenatal care, and an increase in the number of caesarean deliveries (over 50% in more developed regions).

These data reveal that mother's education level and prenatal care represent protective factors for LBW, mostly because the rate of mothers who have never been to school and the ones that do not take any antenatal care has decreased, therefore positively influencing a decrease in the rates of LBW in less developed regions.

However, the more developed regions of Brazil, with better antenatal care coverage and the mother's higher educational level, have shown higher LBW rates; in the less developed regions, despite their current lower rates, LBW has increased linearly [7].

These results suggest that low LBW rates in less economically developed regions are probably related to improved antenatal care access and to mother's education; while in more economically developed regions the highest LBW rates may indicate improvements in the technological area, enabling the survival of premature newborns.

These results may indicate a transition in the obstetric and neonatal care. The positive effects of the mother's high education level on the infants have already been described by several authors, and a systematic review of meta-analysis evidenced that the mother's education level of 12 years or more had a protective effect of 33% for LBW [8].

A similar research in Brazil showed that an adequate antenatal care could help minimizing the influence of socioeconomic inequalities [9], endorsing WHO's statement that many of the causes related to maternal and child mortality could be avoided [10].

The researches being carried out so far aim to understand the range of factors that could lead to the adoption of practices with unnecessary use of technology on low risk population, the undertaking of inappropriate interventions, and the importance of offering equal services to the mother and the children in all regions of the country, considering their specific needs, as there are socioeconomically differences and unequal availability and access to services in each region.

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