



ORIGINAL ARTICLE

Breastfeeding during the first hour of life and neonatal mortality[☆]

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KEYWORDS

Maternal and child health;
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Abstract

Objective: To analyze the correlation between breastfeeding in the first hour of life with neonatal mortality rates.

Methods: The present study used secondary data from 67 countries, obtained from the Demographic and Health Surveys. Initially, for data analysis, Spearman Correlation (95% CI) and Kernel graphical analysis were employed, followed by a Negative Binomial Poisson regression model, adjusted for potential confounders.

Results: Breastfeeding within the first hour of life was negatively correlated with neonatal mortality (Spearman's $Rho = -0.245$, $p = 0.046$), and this correlation was stronger among countries with more than 29 neonatal deaths per 1000 newborns (Spearman's $Rho = -0.327$, $p = 0.048$). According to the statistical model, countries with the lowest breastfeeding tertiles had 24% higher neonatal mortality rates (Rate ratio = 1.24, 95% CI = 1.07-1.44, $p < 0.05$), even when adjusted for potential confounders.

Conclusion: The protective effect of breastfeeding during the first hour of life on neonatal mortality in this ecological study is consistent with findings from previous observational studies, indicating the importance of adopting breastfeeding within the first hour as a routine neonatal care practice.

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PALAVRAS-CHAVE

Saúde materno-infantil;
Aleitamento materno;
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Medidas em epidemiologia;
Lactente

A amamentação na primeira hora de vida e mortalidade neonatal**Resumo**

Objetivo: Analisar a correlação entre o percentual de amamentação na primeira hora de vida e as taxas de mortalidade neonatal.

Métodos: Foram utilizados dados secundários de 67 países obtidos das pesquisas realizadas com a metodologia do *Demographic and Health Surveys*. Inicialmente, para a análise dos dados, foram empregadas a Correlação de Spearman (IC 95%) e a análise gráfica com modificação de Kernel, seguidas de regressão de Poisson Binomial Negativa, ajustando para possíveis fatores de confundimento.

Resultados: O percentual de aleitamento materno na primeira hora de vida esteve negativamente associado com as taxas de mortalidade neonatal ($Rho = -0,245$, $p = 0,046$), e esta correlação foi mais forte entre os países com mortalidade neonatal superior a 29 mortes/1.000 nascidos vivos ($Rho = -0,327$, $p = 0,048$). Os países com os menores tercis de aleitamento materno na primeira hora de vida tiveram uma taxa 24% maior de mortalidade neonatal (razão de taxa = 1,24, IC 95% = 1,07-1,44), mesmo ajustando para fatores de confundimento.

Conclusão: O efeito protetor da amamentação na primeira hora de vida sobre a mortalidade neonatal encontrado nesse estudo ecológico é consistente com o de estudos observacionais, e aponta para a importância de se adotar a amamentação na primeira hora de vida como prática de atenção neonatal.

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Introduction

The World Health Organization (WHO) recommends placing babies in skin-to-skin contact with their mothers immediately after birth for at least 1 hour and helping mothers to recognize when their babies are ready to breastfeed. To help mothers initiate breastfeeding during this sensitive period in which mothers and newborns are alert, corresponds to step 4 of the Baby-Friendly Hospital Initiative (BFHI).¹ This is a practice that can reduce neonatal mortality by 22%,² and the more the initiation of breastfeeding is delayed, the greater the odds of neonatal mortality caused by infections.³

The protective effect of breastfeeding in the first hour of life may be related to the following mechanisms: intestinal colonization by saprophytic bacteria found in maternal milk,⁴ the property of breast milk of reducing intestinal colonization by gram-negative bacteria⁵ and maternal adaptive ability to produce bioactive immune factors suitable for the newborn, which are present in colostrum according to gestational age.⁶ One of these factors is Immunoglobulin-A, which is found in higher concentrations in colostrum when compared to mature milk.⁷

Each year, more than 4 million babies die in the first 27 days of life (neonatal period), and almost all of these deaths occur in poorer countries.⁸ In this context, the promotion of breastfeeding is one of the strategies of greater cost-effectiveness for improving child health,⁹ which highlights the importance of the adoption of breastfeeding within the first hour of life as a hospital routine. The present study aimed to assess the correlation between breastfeeding in

the first hour of life and the rates of neonatal mortality in countries whose data are available in the Demographic and Health Surveys (DHS).

Methods

To perform this ecological study, secondary data on the proportion of children breastfed in the first hour of life and neonatal mortality rates were used (number of deaths of children under 28 days of life per 1,000 live births) in 67 countries that performed at least 1 national survey according to the DHS guidelines. Secondary data are publicly available and were obtained through the MEASURE DHS STAT compiler website,¹⁰ using data from the last research available. Besides these data, we obtained information about the percentage of deliveries in health facilities and the percentage of people with secondary education or higher.

The DHS is a project funded by the US Agency for International Development (USAID) and by the participating countries. Since 1984 more than 260 surveys have been conducted in 90 countries. The samples from each country are nationally representative, and data are collected *in loco* about maternal and child health and many other issues, such as HIV, nutrition and fertility, in a standardized way recognized by the international community. In Brazil, the Brazilian Health Ministry runs the DHS, which is called National Demographic and Health Survey for Children and Women [Pesquisa Nacional de Demografia e Saúde da Criança e da Mulher (PNDS)], with editions held in 1986, 1996 and 2006.¹¹

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