



ORIGINAL ARTICLE

Access to and use of health services as factors associated with neonatal mortality in the North, Northeast, and Vale do Jequitinhonha regions, Brazil^{☆,☆☆}

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KEYWORDS

Neonatal mortality;
Health services
accessibility;
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Abstract

Objective: To analyze the factors associated with neonatal mortality related to health services accessibility and use.

Methods: Case-control study of live births in 2008 in small- and medium-sized municipalities in the North, Northeast, and Vale do Jequitinhonha regions, Brazil. A probabilistic sample stratified by region, population size, and information adequacy was generated for the choice of municipalities. Of these, all municipalities with 20,000 inhabitants or less were included in the study (36 municipalities), whereas the remainder were selected according to the probability method proportional to population size, totaling 20 cities with 20,001–50,000 inhabitants and 19 municipalities with 50,001–200,000 inhabitants. All deaths of live births in these cities were included. Controls were randomly sampled, considered as four times the number of cases. The sample size comprised 412 cases and 1772 controls. Hierarchical multiple logistic regression was used for data analysis.

Results: The risk factors for neonatal death were socioeconomic class D and E (OR = 1.28), history of child death (OR = 1.74), high-risk pregnancy (OR = 4.03), peregrination in antepartum (OR = 1.46), lack of prenatal care (OR = 2.81), absence of professional for the monitoring of labor (OR = 3.34), excessive time waiting for delivery (OR = 1.97), borderline preterm birth (OR = 4.09) and malformation (OR = 13.66).

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PALAVRAS-CHAVE

Mortalidade
Neonatal;
Acesso aos serviços
de saúde;
Estudos de casos e
controles

Conclusion: These results suggest multiple causes of neonatal mortality, as well as the need to improve access to good quality maternal-child health care services in the assessed places of study.

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Acesso e utilização de serviços de saúde como fatores associados à mortalidade neonatal no Norte, Nordeste e Vale do Jequitinhonha, Brasil

Resumo

Objetivo: Analisar fatores associados à mortalidade neonatal referentes ao acesso e à utilização dos serviços de saúde.

Métodos: Estudo caso-controle de nascidos vivos em 2008 nos municípios de pequeno e médio porte nas regiões Norte, Nordeste e Vale do Jequitinhonha do Brasil. Uma amostra probabilística e estratificada por região, tamanho da população e adequação da informação foi gerada para escolha das cidades. Foram selecionados municípios com até 200.000 habitantes. Desses, todos os municípios com até 20.000 habitantes foram incluídos no estudo (36 municípios), os demais foram selecionados de acordo com o método de probabilidade proporcional ao tamanho populacional, totalizando 20 cidades com 20.001 a 50.000 habitantes e 19 municípios com 50.001 a 200.000 habitantes. Foram incluídos todos os óbitos de nascidos vivos nessas cidades, nesse período. Os controles foram amostrados aleatoriamente quatro vezes mais o número de casos. A amostra foi de 412 casos e 1772 controles. Foi utilizada regressão logística múltipla hierarquizada para análise dos dados.

Resultados: Os fatores de risco para o óbito neonatal foram classe socioeconômica D e E (OR = 1,28), história de óbito infantil (OR = 1,74), gestação de risco (OR = 4,03), peregrinação para o parto (OR = 1,46), não realização de pré-natal (OR = 2,81), ausência de profissional para o acompanhamento do trabalho de parto (OR = 3,34), tempo de espera para o atendimento ao parto (OR = 1,97), malformação (OR = 13,66) e prematuridade moderada/limitrofe (OR = 4,09).

Conclusão: Tais resultados sugerem a multicausalidade da mortalidade neonatal e apontam para necessidade de melhoria ao acesso de serviços voltados à atenção materno-infantil, de qualidade, nos locais do estudo.

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Introduction

The infant mortality coefficient, which is most impacted by the neonatal component, is considered a sensitive indicator to quality of life, development level, and access to health services of a given population.¹

Despite the decrease in neonatal mortality, in the last decade Brazil has shown a disparity of this indicator in the different regions of the country. In 2014, both neonatal mortality rates (NMR) in the North and Northeast regions were 10.3/1000 live births (LB), whereas in the South region it was 7.6/1000 LB, in the Southeast 8.1/1000 LB, and in Brazil 8.9/1000 LB, showing the socioeconomic disparities between the different regions of the country, in which only the North and Northeast regions persist with two digits to the left of the decimal point, according to the most recent available data.² Only in 2014, the North and Northeast regions had NMR compatible with that of the Southeast region in 2005 (10.2/1000 NV), but still higher than the coefficient of the South, which in 2005 was 9.4/1000 LB.²

In addition to showing the highest neonatal mortality rates in the country, the North, Northeast, and Vale do

Jequitinhonha regions have an excess of underreporting in national health systems. It was identified that 30% of municipalities had less than 80% coverage from the Mortality Information System (Sistema de Informação da Mortalidade [SIM]), most of them located in the Northeast and North regions of the country. The smaller municipalities, those with up to 200,000 inhabitants, showed worse-quality information on vital data.³ The small and medium-sized municipalities of the North, Northeast, and Vale do Jequitinhonha regions have different characteristics when compared to the larger cities located in these same regions.

In most cases, the smaller municipalities show worse socioeconomic conditions and, mainly, difficulty in access to health care services, which contributes to infant mortality. Thus, the present study aimed to analyze the association of neonatal mortality with variables of health service access and use in the North, Northeast, and Vale do Jequitinhonha regions, in 2008.

It has as a differential feature the analysis of data obtained from populations of smaller Brazilian municipalities, which are hard to study with high statistical power, due to their reduced population sizes. It has an assured

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