



ORIGINAL ARTICLE

Determinants of neonatal death with emphasis on health care during pregnancy, childbirth and reproductive history[☆]

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Received 13 August 2012; accepted 21 November 2012

Available online 28 April 2013

KEYWORDS

Maternal-child health;
Neonatal mortality;
Risk factors;
Case-control studies

Abstract

Objective: To identify risk factors for neonatal mortality, focusing on factors related to assistance care during the prenatal period, childbirth, and maternal reproductive history.

Methods: This was a case-control study conducted in Maceió, Northeastern Brazil. The sample consisted of 136 cases and 272 controls selected from official Brazilian databases. The cases consisted of all infants who died before 28 days of life, selected from the Mortality Information System, and the controls were survivors during this period, selected from the Information System on Live Births, by random drawing among children born on the same date of the case. Household interviews were conducted with mothers.

Results: The logistic regression analysis identified the following as determining factors for death in the neonatal period: mothers with a history of previous children who died in the first year of life (OR = 3.08), hospitalization during pregnancy (OR = 2.48), inadequate prenatal care (OR = 2.49), lack of ultrasound examination during prenatal care (OR = 3.89), transfer of the newborn to another unit after birth (OR = 5.06), admittance of the newborn at the ICU (OR = 5.00), and low birth weight (OR = 2.57). Among the socioeconomic conditions, there was a greater chance for neonatal mortality in homes with fewer residents (OR = 1.73) and with no children younger than five years (OR = 10.10).

[☆] Please cite this article as: Kassar SB, Melo AM, Coutinho SB, Lima MC, Lira PI. Determinants of neonatal death with emphasis on health care during pregnancy, childbirth and reproductive history. J Pediatr (Rio J). 2013;89:269–77.

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PALAVRAS-CHAVE

Saúde materno-infantil; Mortalidade neonatal; Fatores de risco; Estudos caso-controlado

Conclusion: Several factors that were associated with neonatal mortality in this study may be due to inadequate care during the prenatal period and childbirth, and inadequate newborn care, all of which can be modified.

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Fatores de risco para mortalidade neonatal, com especial atenção aos fatores assistenciais relacionados com os cuidados durante o período pré-natal, parto e história reprodutiva materna

Resumo

Objetivo: Identificar fatores de risco para mortalidade neonatal, com especial atenção aos fatores assistenciais relacionados com os cuidados durante o período pré-natal, parto e história reprodutiva materna.

Métodos: Trata-se de um estudo caso-controlado realizado em Maceió, Nordeste do Brasil. A amostra consistiu de 136 casos e 272 controles selecionados em bancos de dados oficiais brasileiros. Os casos foram todos os recém-nascidos que morreram antes de completar 28 dias de vida, selecionados no Sistema de Informações sobre Mortalidade, e os controles foram os sobreviventes neste período, selecionados no Sistema de Informações sobre Nascidos Vivos, por sorteio aleatório entre as crianças nascidas na mesma data do caso. Entrevistas domiciliares foram realizadas com as mães.

Resultados: A análise de regressão logística identificou como fatores determinantes para a morte no período neonatal mães com história de filhos anteriores que morreram no primeiro ano de vida (OR = 3,08), o internamento durante a gestação (OR = 2,48), o pré-natal inadequado (OR = 2,49), a não realização de ecografia durante o pré-natal (OR = 3,89), a transferência de recém-nascidos para outra unidade após o nascimento (OR = 5,06), os recém-nascidos internados em UTI (OR = 5,00) e o baixo peso ao nascer (OR = 2,57). Entre as condições socioeconômicas, observou-se uma maior chance para mortalidade neonatal em residências com menor número de moradores (OR = 1,73) e com ausência de filhos menores de cinco anos (OR = 10,10).

Conclusão: Vários fatores que se mostraram associados à mortalidade neonatal neste estudo podem ser decorrentes de assistência inadequada ao pré-natal, ao parto e ao recém-nascido, sendo, portanto, passíveis de serem modificados.

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Introduction

Mortality in the neonatal period is an important indicator of maternal and child health, reflecting the socioeconomic and reproductive status, especially those related to prenatal care, childbirth, and newborn care.¹⁻⁴ In recent years, deaths in the neonatal period have constituted the main component of infant mortality in many regions of the world, due to the accelerated decrease in the post-neonatal component.¹ These deaths are almost entirely preventable,^{5,6} but they still present high rates, with a slow decline.^{1,5,7,8}

The state of Alagoas, in Northeastern Brazil, has the second worst Child Development Index (CDI), and is the state with the highest rate of infant mortality in the country; over 60% of these deaths occur in the neonatal period.⁹ When reviewing death certificates during the neonatal period in Maceió, capital of the state of Alagoas, it was observed that over 75% of these deaths could be prevented by proper care during pregnancy and childbirth.⁶ Nevertheless, more detailed studies have not been carried out on the risk factors for neonatal death in this capital, where over 90% of the state's high-technology neonatal services are located.

The identification of risk factors associated with neonatal mortality may assist planning for the restructuring and

improvement of care for pregnant women and newborns, in order to reduce infant mortality. The reduction of these deaths does not depend on new knowledge, as is the case with other health problems, but on the availability and more effective use of existing scientific and technological knowledge.⁴

A series of failures in the perinatal care structure has been identified in Brazil.^{4,10,11} In 2011, the Brazilian Ministry of Health created a care network that guarantees access and effectiveness during the prenatal, childbirth, and the neonatal periods (Rede Cegonha - Stork Network). Such an initiative would be more effective in each region if supported by recent epidemiological research on risk factors of neonatal mortality.

This study aimed to identify these factors, with special attention to assistance care during the prenatal and childbirth period, as well as to the maternal reproductive history in the city of Maceió.

Methods

The study was carried out in Maceió, capital of Alagoas, a poor urban region of Northeast Brazil. This city has an area of 511 km² and a population of 903,463 inhabitants; 17% of those older than 15 years are illiterate. There are 22,000

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