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Stillbirth prevalence in Brazil: an exploration of regional differences☆

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Abstract

Introduction: Brazil is a large, heterogeneous, and diverse country, marked by social, economic, and regional inequalities. Stillbirth is a global concern, especially in low- and middle-income countries. This study investigated the prevalence and possible determinants of stillbirth in different regions of Brazil.

Methods: This is a cross-sectional study including all women of reproductive age who had had a pregnancy in the last five years, enrolled in the most recent Brazilian Demographic and Health Survey (DHS/PNDS-2006/07). Logistic regression was used to assess the association between region and other maternal characteristics and stillbirth risk.

Results: The prevalence of stillbirth in Brazil was 14.82 per 1000 births, with great variation by region of the country, and a higher prevalence among the most deprived. The North and Northeast regions had the highest odds of stillbirth compared to the Center-West, which persisted after adjustment for multiple confounders – including deprivation level and ethnicity. Low maternal age and maternal obesity were also related to higher odds of stillbirth.

Conclusion: In Brazil, the region influences stillbirth risk, with much higher risk in the North and Northeast. Variation in socioeconomic level does not explain this finding. Further research on the subject should explore other possible explanations, such as antenatal care and type of delivery, as well as the role of the private and public health systems in determining stillbirth. Preventive strategies should be directed to these historically disadvantaged regions, such as guaranteeing access and quality of care during pregnancy and around the time of birth.

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Prevalência de natimortos no Brasil: investigação de diferenças regionais

Resumo

Introdução: O Brasil é um país grande, heterogêneo e diverso, marcado por desigualdades sociais, econômicas e regionais. A natimortalidade é uma preocupação global, principalmente em países de renda baixa e média. Este estudo investigou a prevalência e possíveis determinantes da natimortalidade em diferentes regiões do Brasil.

Métodos: Este é um estudo transversal incluindo todas as mulheres em idade reprodutiva que estiveram grávidas nos últimos cinco anos registradas na Pesquisa Nacional sobre Demografia e Saúde (PNDS-2006/07). A regressão logística foi utilizada para avaliar a relação entre região e outras características maternas e risco de natimortalidade.

Resultados: A prevalência de natimortos no Brasil foi de 14,82 a cada 1.000 nascimentos, com grande variação de acordo com a região do país e uma prevalência mais alta entre as mais precárias. As regiões Norte e Nordeste tiveram as taxas de natimortalidade mais altas em comparação à região Centro-Oeste, que perdurou após o ajuste das diversas variáveis de confusão – incluindo nível de pobreza e etnia. A baixa idade e a obesidade maternas também estavam relacionadas a taxas de natimortalidade mais elevadas.

Conclusão: No Brasil, a região influencia o risco de natimortalidade, com riscos muito mais altos no Norte e no Nordeste. A variação no nível de pobreza não explica esse achado. Futuras pesquisas sobre o assunto devem explorar outras possíveis explicações como cuidado pré-natal e tipo de parto, bem como o papel dos sistemas de saúde público e privado com relação à natimortalidade. As estratégias de prevenção devem ser direcionadas a essas regiões historicamente desfavorecidas, como garantir acesso e qualidade da assistência durante a gravidez e perto do momento do nascimento.

Introduction

Brazil is the largest country in South America, the fifth most populous in the world, and markedly heterogeneous in density and socioeconomic level.[1,2] The country is divided into five geographic regions – North, Northeast, Center-West, Southeast, and South. There has been great improvement in health indicators and coverage of health services in Brazil in the recent past. For instance, 98% of births were overseen by skilled attendants in 2011 compared to 70% in 1991, and antenatal care (ANC) coverage was 98% in 2012. However, structural and social inequalities continue to be a major issue within the country, and there are still great differences in health outcomes among the five regions.[3,4]

New evidence from 2016, from the ''Ending preventable stillbirths'' series in the Lancet, shows stillbirth continues to be a problem worldwide. Comparing data from 2000 to 2015, there was progress, but the reduction was slower than that seen for maternal, neonatal, and post-neonatal deaths.[5] The great majority of stillbirths occur in low-income countries, in the places with more socioeconomically disadvantaged residents. In many of these, data on stillbirths are scarce or even inexistent.[6–10] Unfortunately, the Sustainable Development Goals – the United Nations agenda for addressing extreme poverty and its dimensions – did not implement a target for stillbirth.[11] Thus, stillbirth remains an important topic for research and discussion.[5]

Although there have been studies investigating determinants of stillbirth in Brazil, most did not use data representative of the whole country or did not focus specifically in differences by region.[12–18]

Thus, this study aimed to measure the prevalence of stillbirth in different regions of Brazil and to investigate possible determinants of stillbirth in this population.

Methods

Dataset

This is a cross-sectional analysis using data from the National Survey on Demography and Health of Women and Children (Pesquisa Nacional de Demografia e Saúde da Criança e da Mulher [PNDS]) from Brazil in 2006. The PNDS represented the fifth phase of the Demographic and Health Surveys (DHS) Program. DHS surveys are nationally representative household surveys that provide data for monitoring and impact evaluation indicators.

The study population included women of reproductive age (15–49 years old) who had had a pregnancy in the past five years. The response rate was almost 90%. The sample was representative of the five regions of the country, including urban and rural areas.

The PNDS was approved for data collection in 2005 by the Research Ethics Committee of São Paulo. More details on sampling and ethical aspects regarding the data collection can be found elsewhere.[19] For the purpose of the analysis presented here, the dataset was obtained from the public domain.[20]