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child mortality

Avoidable deaths in children under five years in Passos/MG

ABSTRACT | Objective: To describe the main causes of preventable deaths in children under five years of age in the municipality of Passos, Minas Gerais, between 2010 and 2018, according to the "Brazilian List of Causes of Avoidable Deaths". Method: Descriptive, retrospective research, with a quantitative approach, using data collected from the Mortality Information System (SIM) database, which were later entered into Excel 2010 spreadsheets and analyzed using simple descriptive statistics. Results: There was a higher occurrence of deaths in male children in the early neonatal period. The most prevalent causes were those that could be reduced by adequate care for women during pregnancy, followed by adequate care for the newborn. Conclusion: There is a need for greater involvement of health managers in terms of prenatal care, with the implementation of actions that promote health and the prevention of diseases and injuries, thus guaranteeing excellent services for the care of these vulnerable groups.
Keywords: Child Mortality; Cause of Death; Unified Health System.

RESUMEN | Objetivo: Describir las principales causas de muertes evitables en menores de cinco años en el municipio de Passos, Minas Gerais, entre 2010 y 2018, según la "Lista Brasileña de Causas de Muertes Evitables". Método: Investigación descriptiva, retrospectiva, con enfoque cuantitativo, utilizando datos recolectados de la base de datos del Sistema de Información de Mortalidad (SIM), que luego fueron ingresados en hojas de cálculo Excel 2010 y analizados mediante estadística descriptiva simple. Resultados: Hubo una mayor incidencia de muertes en niños varones en el período neonatal temprano. Las causas más prevalentes fueron las que podrían reducirse con una atención adecuada a la mujer durante el embarazo, seguida de una atención adecuada al recién nacido. Conclusión: Existe la necesidad de una mayor participación de los gestores de salud en materia de atención prenatal, con la implementación de acciones que promuevan la salud y la prevención de enfermedades y lesiones, garantizando así excelentes servicios para la atención de estos grupos vulnerables.
Palabras claves: Mortalidad del Niño; Causas de Muerte; Sistema Único de Salud.

RESUMO | Objetivo: Descrever as principais causas de óbitos evitáveis em crianças menores de cinco anos no município de Passos, Minas Gerais, entre os anos de 2010 a 2018, segundo a "Lista Brasileira de Causas de Mortes Evitáveis". Método: Pesquisa descritiva, retrospectiva, com abordagem quantitativa, por meio dos dados coletados pela base de dados do Sistema de Informação sobre Mortalidade (SIM), posteriormente digitados em planilhas do Excel 2010 e analisados por estatística descritiva simples. Resultados: Houve maior ocorrência de óbitos em crianças do sexo masculino, no período neonatal precoce. As causas mais prevalentes foram as reduzíveis por adequada atenção à mulher na gestação, seguida por adequada atenção ao recém-nascido. Conclusão: Há necessidade de maior envolvimento dos gestores em saúde quanto à assistência pré-natal, com implementação de ações que promovam a saúde e a prevenção de doenças e agravos, garantindo assim serviços de excelência para o atendimento destes grupos vulneráveis.
Palavras-chaves: Mortalidade na infância; Causas de morte; Sistema Único de Saúde.

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INTRODUCTION

Infant deaths from preventable causes are defined as those that can be reduced through effective actions by health services, are characterized as sentinel events of the quality of health care and their occurrence may indicate failures in the care provided. This classification aims at monitoring and evaluating health services, as well as analyzing temporal trends, comparing regional indicators and assisting in the planning of measures to reduce adverse events. [1]

The concept of preventable deaths was initially proposed in 1976 [2], at Harvard University, when the debate on the subject intensified. Considered pio-

neers, these authors proposed the creation of a list of approximately 90 preventable death conditions. [3] From these studies, several other lists were created in developed countries [4-6], taking into account the need for adaptations and modifications in the face of economic, social, epidemiological, regional differences and technological advances. [7] In 2007, the first "Brazilian List of Causes of Preventable Deaths" was published under the supervision of the Health Surveillance Secretariat (Secretaria de Vigilância em Saúde - SVS) of the Ministry of Health (MH) of Brazil, and two lists were drawn up, one aimed at the age group of minors five years and the other five to 74 years. In 2010, due to the need for frequent updating due to local variations, advances in knowledge and changes in the morbidity and mortality situation, the instrument was first revised. [8]

In several first world countries there is an attempt to classify preventable causes of death in order to prevent premature death, through disease prevention actions or their appropriate treatment. According to some authors [9] the mortality rate of deaths from preventable causes has been declining worldwide, but this indicator is still a challenge for developing countries and in Brazil it is still challenging since the country is very distant from the reality of developed countries. [7,10] Thus, this study is justified by the need to know the causes of preventable deaths that affect the child population and also to identify the groups with the greatest vulnerability, in order to seek subsidies for more qualified health care, with more appropriate interventions and services of best excellence. Therefore, it aims to describe the main causes of preventable deaths in children under five years of age in the municipality of Passos, Minas Gerais (MG), between the years 2010 to 2018, according to the "Brazilian List of Causes of Avoidable Deaths".

> " Data were collected through the Mortality Information System (Sistema de Informação sobre Mortalidade - SIM) database, available at the Informatics Department of the Unified Health System (DATASUS), the platform responsible for providing information systems and computer support to SUS agencies, essential to the process of planning, operating and controlling the information collected. "

METHOD

This is a descriptive, retrospective research, with a quantitative approach, conducted in the municipality of Passos-Minas Gerais. The study population consisted of children under the age of five who died due to preventable causes, according to the "Brazilian List of Causes of Avoidable Deaths", residing in the municipality between the years 2010 to 2018. The time limit is justified by the authors' interest in conducting a survey of the last 10 years, however, as data from 2019 and 2020 were not available so far, the study covered information from the last 8 years.

The research questions were: What are the main causes of preventable deaths in children under five? What is the role of the Nursing team in preventing preventable deaths in children under five years of age?

Deaths from ill-defined causes and other causes (not clearly avoidable) present in the "Brazilian List of Causes For Avoidable Deaths" were excluded.

Data were collected through the Mortality Information System (Sistema de Informação sobre Mortalidade - SIM) database, available at the Informatics Department of the Unified Health System (DATASUS), the platform responsible for providing information systems and computer support to SUS agencies, essential to the process of planning, operating and controlling the information collected. [11] Data analysis was based on simple descriptive statistics of the variables sex, ethnicity, age group, place of occurrence, year of death and preventable causes, using the Excel 2010 spreadsheet, after double typing. As this is a study involving secondary SIM data available on the DATASUS platform, it was requested to waive the Informed Consent Form (ICF).

RESULTS

The results of the present study

Table 1 - Sociodemographic characteristics of children under the age of five who died from preventable causes between the years 2010 to 2018. Passos (MG), Brazil.

Variável		Ano (2010 - 2018)	
		N	(%)
Sexo	Masculino	64	62,13
	Feminino	39	37,87
	Ignorado	-	-
Etnia	Branca	46	44,66
	Preta	2	1,94
	Parda	50	48,54
	Ignorado	5	4,85
Faixa etária	0 a 6 dias	56	54,26
	7 a 27 dias	25	24,27
	28 a 364 dias	15	14,56
	1 a 4 anos	7	6,79
Local de ocorrência	Hospital	96	93,20
	Domicílio	3	2,91
	Via pública	3	2,91
	Ignorado	1	0,97

Source: DATASUS, 2020.

showed that between 2010 and 2018, 103 deaths from preventable causes in children under five were reported in SIM.

Table 1 describes the sociodemographic characteristics of children under the age of five included in the study.

Tables 2 and 3 show the distribution of the causes of these deaths by categories, according to the "Brazilian List of Causes of Avoidable Deaths". The results showed a higher occurrence of deaths that can be reduced by caring for women during pregnancy, followed by adequate care for the newborn.

DISCUSSION

The results of this study pointed out that the majority of deaths from preventable causes occurred in male children, brown in color, aged between 0 to 6 days of life, and had the hos-

Table 2 – Distribution in numbers of deaths from preventable causes due to adequate care for women during pregnancy and childbirth, between the years 2010 to 2018. Passos (MG), Brazil.

Variável	Ano									Total
	2010	2011	2012	2013	2014	2015	2016	2017	2018	
	N	N	N	N	N	N	N	N	N	N
Reduzíveis por adequada atenção à mulher na gestação										
Sífilis congênita	-	-	-	-	-	-	1	-	-	1
Feto e recém-nascido afetado por afecções maternas	-	-	-	1	-	-	1	-	1	3
Feto e recém-nascido afetado por complicações maternas da gravidez	-	-	-	-	-	-	-	-	2	2
Crescimento fetal retardado e desnutrição fetal	-	1	-	-	-	-	-	-	-	1
Transtornos relacionados com a gestação de curta duração e peso baixo ao nascer	-	1	3	1	1	-	-	2	-	8
Síndrome da angústia respiratória recém-nascido	3	3	2	-	8	7	2	3	-	28
Hemorragia pulmonar originada no período perinatal	-	-	-	-	-	1	-	-	1	2
Outras doenças hemolíticas feto e recém-nascido devido a isoimunização	-	-	-	-	1	-	-	-	-	1
Enterocolite necrotizante feto e recém-nascido	1	1	-	-	-	1	-	1	1	5
Reduzíveis por adequada atenção à mulher no parto										
Feto e recém-nascido afetado por placenta prévia ou descolamento de placenta	-	-	-	-	-	-	1	-	-	1

Variável	2010	2011	2012	2013	2014	2015	2016	2017	2018	Total
Feto e recém-nascido afeto por outras complicações no parto	-	-	-	1	-	-	-	-	-	1
Hipóxia intrauterina e asfixia ao nascer	-	1	-	1	1	-	1	-	2	7
Síndrome da aspiração neonato exceto e leite alimentos regurgitados	-	-	-	-	1	1	-	-	-	2
Total	4	7	5	4	12	10	6	6	7	61

Source: DATASUS, 2020.

Table 3 - Distribution in numbers of deaths from preventable causes due to adequate care for the newborn, diagnosis, treatment and health promotion, between the years 2010 to 2018. Passos (MG), Brazil.

Variável	Ano									Total
	2010	2011	2012	2013	2014	2015	2016	2017	2018	
	N	N	N	N	N	N	N	N	N	N
Reduzíveis por adequada atenção ao recém-nascido										
Transtorno respiratórios específico do período neonatal	-	-	-	3	1	-	2	1	1	8
Infecções específicas do período neona-tal, exceto SRC* e hepatite viral congênita	1	2	1	-	3	3	2	-	2	14
Hemorragia neonatal exceto intracrania-na não traumática	-	1	-	-	-	-	-	-	-	1
Afecções comprometendo o tegumento e a regulação térmica do feto e do recém-nascido	1	-	-	-	-	-	-	1	-	2
Outros transtornos originados no período perinatal	-	-	-	-	-	-	1	-	1	2
Reduzíveis por ações adequadas de diagnóstico e tratamento										
Pneumonia	-	-	1	-	1	-	2	-	-	4
Outras doenças bacterianas	1	-	-	-	-	-	-	1	-	2
Síndrome de Down	1	-	-	-	-	-	-	-	-	1
Reduzíveis por ações adequadas de promoção à saúde, vinculadas a ações adequadas de atenção à saúde										
Acidentes de transporte	1	-	-	-	-	-	1	-	-	2
Síndrome da morte súbita na infância	-	1	1	-	-	-	-	1	-	3
Quedas	-	-	1	-	-	-	-	-	-	1
Outros riscos acidentais à respiração	-	-	-	1	-	-	-	-	-	1
Agressões	-	-	-	-	-	-	-	-	1	1
Total	5	4	4	4	5	3	8	4	5	42

Caption: SRC*- Síndrome da Rubéola Congênita
Source: DATASUS, 2020.

pital as the place of occurrence. These data corroborate with other research found in the literature. [12] As for the predominance of males, also found in other studies [7-8,12], this variable can be justified by the better immune response of girls to infections and respiratory diseases, when compared to males. [13] Regarding the prevalence of brown color, studies show that in Brazil there are challenges in expanding the coverage of health services for different racial groups, thus evidencing the need to improve the color / race variable in death certificates for possible health interventions and creation public policies aimed at social inclusion, thus minimizing racial inequalities. [14]

Regarding the age group, the highest prevalence of deaths occurred in the early neonatal period (0-6 days), followed by the late neonatal period (7-27 days), corroborating another study found in the literature. [15] Another survey carried out in Belo Horizonte also showed that 67,3% of deaths occurred among early neonates, with the most common causes being those related to congenital problems, mater-

nal health and complications during pregnancy and childbirth. [16] These deaths in children under one year old correspond to the infant mortality rate, being an important indicator of the health conditions of a population, being a sensitive marker for socioeconomic differences. [17]

Our findings demonstrated that the main causes of mortality in children under five years of age occurred due to factors that can be reduced by adequate care for women during pregnancy, with emphasis on the newborn's respiratory distress syndrome (NRDS), followed by factors that can be reduced by adequate at-

tention to the newborn, highlighting the specific infections of the neonatal period, except for CRS and congenital viral hepatitis, which corroborates with other studies found in the literature. [9,12,18] According to some authors [18] these deaths could be avoided by making improvements in clinical resolution, increasing prenatal coverage and improving the quality of care for women and newborns in health services. As for the place of occurrence, most deaths occurred in hospitals. In-hospital infant deaths are, in general, more frequent compared to others, due to the larger population contingent living in urban areas

with easier access for the population to referral health services. [19]

CONCLUSION

There is also a significant number of deaths from preventable causes and these conditions are associated with the precariousness of health services to serve the most vulnerable populations, being, therefore, necessary to create joint strategies, with improvements in the social determinants of the community, in the provision of health services with greater excellence and thus guaranteeing excellent services for the care of these vulnerable groups. 🏺

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