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PROFILE OF DEATHS FROM SPONTANEOUS ABORTION IN WOMEN OF CHILDBEARING AGE IN BRAZIL: A RETROSPECTIVE STUDY (2012-2022)

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Abstract: The word "abortion" originates from Latin, combining "ab" (deprivation) and "ortus" (birth), meaning the interruption of birth. The World Health Organization (WHO) and the International Federation of Gynecology and Obstetrics (FIGO) define abortion as the termination of pregnancy before the fetus is viable, i.e. by the 20th or 22nd week of gestation, or with a fetus weighing up to 500g. Miscarriage occurs without external intervention. Recurrent miscarriage is defined as the occurrence of three or more consecutive miscarriages. Factors such as advanced maternal age, over 35, and early menarche are associated with miscarriage. The causes of miscarriage can be genetic or non-genetic, and 25% of cases could be avoided with appropriate preventative measures. In Brazil, miscarriage is one of the main causes of maternal death, with a high mortality rate. This study investigates the prevalence and socio-epidemiological profile of deaths of women of childbearing age due to spontaneous abortion in Brazil between 2012 and 2022. A quantitative, retrospective and epidemiological methodological approach was used. The data was collected through the SUS Information Technology Department (DATASUS), and the variables investigated were year of death, region, color/race, age group and marital status of deaths related to spontaneous abortion in women of childbearing age. The information highlights the importance of public policies aimed at reproductive health, with a focus on reducing regional and socio-economic disparities.

Keywords: Spontaneous abortion. Women of childbearing age. Epidemiology. Observational study.

INTRODUCTION

Etymologically, the word "abortion" comes from the Latin "ab" (deprivation) and "ortus" (birth), meaning the interruption of birth. The World Health Organization (WHO) and the International Federation of Gynecology and Obstetrics (FIGO) define abortion as the spontaneous or induced termination of pregnancy before the fetus is viable, i.e. by the 20th or 22nd week of gestation, or with a fetus weighing up to 500g. Abortion is considered spontaneous when it occurs without any external intervention[1] .

The term "recurrent miscarriage" (RMS) refers to the occurrence of three or more consecutive miscarriages, a relatively common situation that can cause great emotional suffering for the woman. This term is also used when two miscarriages occur in women over the age of 35. Several factors are associated with AER[2] .

Advanced maternal age, over 35, is considered a risk factor for spontaneous abortions and fetal malformations due to the aging of the eggs, which become more susceptible to chromosomal alterations. A 5-year increase in maternal age increases the risk of miscarriage by 1.5 times. However, some studies have found different results. This divergence can be explained by the fact that studies associating maternal age above 35 with miscarriage were carried out in developed countries, where women tend to get pregnant later, while studies associating maternal age below 35 with miscarriage were carried out in developing countries, where women get pregnant earlier, increasing the likelihood of miscarriage. Early menarche is also an important factor, as it accelerates puberty and the occurrence of pregnancy at younger ages, when a woman's body is not yet fully mature[3].

Spontaneous abortion has multifactorial causes, both genetic and non-genetic, which can be interconnected. Genetic factors include chromosomal abnormalities and polymorphisms; non-genetic causes include the presence of infectious agents, socioeconomic, environmental and occupational factors, life history and endocrine and thrombophilic disorders. It is estimated that 25% of miscarriages could be avoided if the risk factors were mitigated. However, around 50% of miscarriages have unknown causes[3] .

It has always been an intriguing conundrum for medicine whether the mother accepts the development of the fetus inside her body, since this represents an immunological paradox. The immune system has the function of recognizing and rejecting organ grafts from donors who are not genetically identical to the recipient. The fetus, possessing antigens of paternal origin, is considered an allograft that should be rejected, but which represents an exception to this rule[4] .

In Brazil, abortion is one of the four main causes of maternal death, showing a high mortality rate according to international standards[5] .

The aim of this study was to investigate the prevalence and describe the socio-epidemiological profile of deaths of women of childbearing age due to spontaneous abortion in Brazil.

METHODOLOGY

This is an observational epidemiological study of a descriptive nature. Descriptive epidemiological studies play a significant role in health sciences research and are the first stage in applying the epidemiological method to understand the behavior of a health problem in a population.

The data was obtained by consulting the databases of the Brazilian Unified Health System Information Technology Department (DATASUS) for the period 2012 to 2022. Aspects such as year of death, region, color/race, age group and marital status of deaths of women of childbearing age due to spontaneous abortion in Brazil were evaluated. Information was also collected from the SCIELO and GOOGLE ACADÊMICO databases, using

the keywords "spontaneous abortion", "epidemiological profile" and "observational study".

The study population consisted of the number of women of childbearing age who suffered a miscarriage in Brazil and were registered between 2012 and 2022. To avoid incomplete information in the system, such as that for 2023 and 2024, it was decided to use only the years prior to 2023 available in the system. Based on the data obtained from the DATASUS SINAN, new tables were built in Microsoft Excel and then analyzed using descriptive and analytical statistics.

Due to the information obtained from a public domain database, according to item III of Resolution No. 510/2016, it was not necessary to submit the study to the Research Ethics Committee (CEP).

RESULTS

There were 170 deaths from spontaneous abortion among women of childbearing age in Brazil between 2012 and 2022. The highest number of cases was recorded in 2018, with 24 (14.11%) of the deaths. The year 2019 represented the lowest number of deaths with 10 (5.88%).

DEATHS OF WOMEN OF CHILDBEARING AGE ACCORDING TO YEAR OF DEATH	
YEAR OF DEATH	DEATHS
TOTAL	170
2012	13
2013	13
2014	14
2015	16
2016	11
2017	23
2018	24
2019	10
2020	14
2021	15
2022	17

Source: MS/SVS/CGIAE - Mortality Information System - SIM

The Southeast had the highest number of deaths, 61. The total number of deaths from spontaneous abortion in women of childbearing age in the Southeast of Brazil, which is made up of the states of São Paulo, Minas Gerais, Rio de Janeiro and Espírito Santo, corresponds to 35.88% of all reported deaths. However, the region with the lowest number of cases for the same period was the South, with 17 cases, representing 10% of total deaths.

DEATHS OF WOMEN OF CHILDBEARING AGE BY REGION	
REGION	DEATHS
TOTAL	170
Northern Region	19
Northeast Region	49
Southeast Region	61
Southern Region	17
Central-West Region	24

Source: MS/SVS/CGIAE - Mortality Information System - SIM

Brown people accounted for 85 deaths, representing 50% of the cases. This data shows the prevalence of deaths from spontaneous abortion among mainly brown individuals, followed by white individuals with 57 cases, making up 33.52% of deaths.

DEATHS OF WOMEN OF CHILDBEARING AGE ACCORDING TO COLOR/RACE	
COLOR/GRACE	DEATHS
TOTAL	170
White	57
Black	15
Yellow	85
Brown	6
Ignored	7

Source: MS/SVS/CGIAE - Mortality Information System - SIM

The age group with the highest number of deaths was 25 to 29 years old, with 38 deaths, making up 22.35% of deaths from spontaneous abortion in women of childbearing age.

DEATHS OF WOMEN OF CHILDBEARING AGE BY AGE GROUP	
AGE GROUP	DEATHS
TOTAL	170
10 TO 14 YEARS	3
15 TO 19 YEARS	21
20 TO 24 YEARS	32
25 TO 29 YEARS	38
30 TO 34 YEARS	36
35 TO 39 YEARS	29
40 TO 44 YEARS	8
45 TO 49 YEARS	3

Source: MS/SVS/CGIAE - Mortality Information System - SIM

The highest number of deaths occurred among single women with 80 cases (47.05%), followed by married women with 44 (25.88%) of the total deaths.

DEATHS OF WOMEN OF CHILDBEARING AGE ACCORDING TO MARITAL STATUS	
CIVIL STATUS	DEATHS
TOTAL	170
SINGLE	80
MARRIED	44
WIDOWED	2
LEGALLY SEPARATED	6
OTHER	18
IGNORED	20

Source: MS/SVS/CGIAE - Mortality Information System - SIM

DISCUSSION

It is possible to observe a series of trends and factors that influence deaths from miscarriage among women of childbearing age in Brazil between 2012 and 2022.

Firstly, the total number of deaths recorded was 170, with the highest number of cases occurring in 2018, when 24 deaths were recorded (14.11%). In contrast, 2019 had the lowest number of deaths, with only 10 cases (5.88%). This annual variation can be influenced by several factors, including changes in health policies, access to medical care and variations in socioeconomic conditions.

The geographical distribution of deaths shows that the Southeast region, made up of the states of São Paulo, Minas Gerais, Rio de Janeiro and Espírito Santo, had the highest number of deaths, totaling 61 cases, which represents 35.88% of all reported deaths. This can be attributed to the higher population density and the greater number of women of childbearing age in this region. In contrast, the South had the lowest number of cases, with 17 deaths, representing 10% of the total. This regional disparity may reflect differences in access to health services, education and socio-economic conditions.

Analysis of the demographic data shows that brown people had the highest number of deaths, with 85 cases (50%), followed by white people, with 57 cases (33.52%). These figures indicate a higher prevalence of deaths from spontaneous abortion among brown individuals, which may be related to socioeconomic factors and access to health care.

In terms of age group, the highest number of deaths occurred among women aged 25 to 29, with 38 cases (22.35%). This is significant, as this age group is generally considered to be a period of high fertility. The high incidence of deaths in this age group may indicate the need for greater attention and medical care for pregnant women in this group.

Finally, women's marital status also seems to influence deaths from miscarriage. Single women accounted for the majority of deaths, with 80 cases (47.05%), followed by married women, with 44 cases (25.88%). This may reflect differences in social support and access to health care between single and married women.

CONCLUSION

The data presented in this study reveal a worrying scenario of deaths from spontaneous abortion among women of childbearing age in Brazil between 2012 and 2022, with 170 deaths recorded**.**

The increase in the number of diagnoses, especially in 2018, is a warning sign that needs to be taken seriously. The Southeast stands out as the most affected region, concentrating almost 35.88% of deaths.

The most vulnerable age group is 25 to 29. Single women accounted for the largest number of deaths.

In conclusion, the data presented highlights the importance of public policies aimed at reproductive health, with a focus on reducing regional and socioeconomic disparities. In addition, it is crucial to promote access to quality health care for all women, regardless of their color/race, age or marital status, in order to reduce the incidence of miscarriage deaths in Brazil.

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