

Abortion in Brazil: what do the official data say?

Aborto no Brasil: o que dizem os dados oficiais?

Aborto en Brasil: ¿qué dicen los datos oficiales?

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Abstract

According to the World Health Organization, from 2010 to 2014, there were around 55 million abortions worldwide, 45% of which were unsafe. In Brazil, data on abortion and its complications are incomplete. Health care data are only available for the public sector and mortality data depend on investigations of deaths. This study sought to describe the situation of abortion in the country using public data available in the different Information Systems – SIM (mortality), SINASC (live births) and SIH (hospitalization). From 2008 to 2015, there were around 200,000 hospitalizations/year for procedures related to abortion, 1,600 of which for medical and legal reasons. From 2006 to 2015, we found 770 maternal deaths in SIM whose underlying cause was abortion. There was a discreet reduction in the number of deaths from abortion in the period, with regional variation. This number could be increased by around 29% per year if deaths with mentions of abortion and declared with a different underlying cause were considered. Among the deaths reported as resulting from abortion, 1% were abortions due to medical and legal reasons and 56.5% were non-specified abortions. The proportion of deaths from abortion identified in SIH, in relation to the total number of deaths from abortion identified in SIM, varied between 47.4% in 2008 and 72.2% in 2015. Although official health data do not allow us to estimate the number of abortions in Brazil, we were able to establish the profile of women at higher risk for death from abortion: black and indigenous women, with low educational levels, under 14 and over 40 years of age, living in the North Northeast and Central regions, without a partner.

Health Systems; Abortion; Maternal Death; Women's Health;
Reproductive Rights

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Introduction

According to a study based on World Health Organization (WHO) estimates, from 2010 to 2014, there were approximately 55 million abortions worldwide, 45% of which were considered unsafe ¹. Africa, Asia and Latin American concentrate 97% of unsafe abortions. The study further showed that restrictive laws increase the occurrence of these abortions. The illegal status of abortion, however, does not deter the practice, which is related to social inequality and remains a global problem ².

The WHO defines unsafe abortion as a procedure for terminating a pregnancy carried out by persons lacking the necessary skills or in an environment lacking the requirements for performing medical procedures, or both ¹. Despite scientific advances capable of enabling safe abortions, unsafe abortions continue to take place, leading to an increase in health system costs, maternal complications and deaths ³.

In Brazil, abortion is a public health problem, both because of its magnitude and because of its persistence ⁴. Over the years, several studies, in different regions and with different methodologies sought to estimate the number of annual abortions, both induced and miscarriages. These studies were based on interviews, data collection through the ballot box method, research based on procedure and hospitalization records, and estimated very different percentages of abortion prevalence in the country ^{4,5,6,7,8}.

Even with many studies in this field, methodological differences, non-standardized data in health information systems, lack of data from the private health system, among other factors, contribute to the continuing existence of a controversy regarding the number of abortions in Brazil.

Abortion is still an important cause of maternal death, though one with a downward trend, with an 83.3% reduction in the risk of death from 1990 to 2012 ^{9,10}. The causes of maternal mortality are obtained from the Brazilian Mortality Information System (SIM, in Portuguese), in which data from Death Certificates (DC) are processed. The assessment of the magnitude of maternal mortality through data available in SIM faces under-diagnosis problems. A large part of these deaths are not declared as such ¹¹, given the difficulty of their identification. For the classification as a maternal death, the patient must be a woman of reproductive age, that is, women aged between 10 and 49 years, the death must be reported as having taken place in the pregnancy-puerperal cycle in field 37 of the Brazilian DC and, further, the underlying cause must be classified as a maternal cause ¹². The difficulty in correctly identifying and classifying maternal deaths, with subsequent under-reporting, gave rise to the need for correction factors to better estimate deaths ¹². In 2017, the Ministry of Health presented an updated standardized correction factor for maternal deaths ¹³.

Among maternal deaths from abortion, the classification difficulty is even greater. Since SIM was implemented, studies have shown the under-reporting of maternal deaths from abortion ^{10,14}. In the case of induced abortions, their illegality further contributes to under-reporting ^{2,15,16}. Even with the considerable difficulty in identifying maternal deaths from abortion, no specific standardized correction factors were proposed for this cause of death.

In order to identify maternal deaths not declared in the DC, the *Ordinance n. 653*, issued on 28 May 2003 ¹⁴, established the mandatory investigation of all deaths of women of reproductive age. The investigation further makes it possible to qualify information on causes of maternal deaths that are incorporated into SIM, in addition to revealing intervention opportunities for improving health care. The information originating from these investigations is recorded in a specific SIM module. However, this does not remove the need for corrections of the System's database, as defined by the *Guia de Vigilância Epidemiológica do Óbito Materno* ¹¹.

Another source of data on the occurrence of abortions in Brazil are hospitalization records available on the Brazilian Hospital Information System (SIH, in Portuguese). The system records hospitalizations in the public system, collecting them for the administrative purpose of counting procedures carried out during hospitalizations and to control the costs for transfers to health units by municipal health secretariats (Departamento de Informática do SUS. Sistema de Informações Hospitalares do SUS. <http://datasus.saude.gov.br/sistemas-e-aplicativos/hospitalares/sihsus>, accessed on 12/Dec/2018). SIH also contains data that allow for tabulation of hospitalizations for procedures or diagnoses connected to abortion. On the other hand, abortion care not requiring hospitalization, consistent data on abortion care at an outpatient level and data on procedures performed in the private

health sector are not available for analysis (Procedimentos hospitalares do SUS. http://tabnet.datasus.gov.br/cgi/sih/Proced_hosp_loc_int_1992_2007.pdf, accessed on 01/Feb/2018).

This article seeks to describe the situation of abortion in Brazil and regions, in the periods from 2006 to 2015, based on official data from the health information systems.

Methods

This is a descriptive, time-series, population-based study that sought to describe the scenario of abortion in Brazil using public data available for download in the country's different Health Information Systems. For death information, we used SIM data from 2006 to 2015. For births, we used data from the Brazilian Information System on Live Birth (SINASC, in Portuguese), also from 2006 to 2015. We obtained the SIM and SINASC databases by downloading them from the SUS Brazilian Health Informatics Department (DATASUS) website, available at <http://datasus.saude.gov.br/informacoes-de-saude/servicos2/transferencia-de-arquivos>.

We also obtained hospitalization data from SIH using the Tabnet tool, also from the DATASUS website, available at <http://www2.datasus.gov.br/DATASUS/index.php?area=0202&id=11633> and <http://www2.datasus.gov.br/DATASUS/index.php?area=0203&id=6926>. We included data from 2008 to 2015, since tabulation by hospitalization year is only available through Tabnet from 2008 onward. For previous years, tabulation is only available for processing year, which may introduce distortions due to the possibility of processing hospitalizations from previous years.

In order to identify and analyze deaths from abortion, we considered the Underlying Cause of Death, as established in the International Classification of Diseases (ICD – 10th review)¹⁷. We used the classification suggested by *Guia de Vigilância Epidemiológica do Óbito Materno*¹¹ to calculate the abortion-specific Maternal Mortality Ratio (MMR), using the following ICD-10 categories: O03 (miscarriage), O04 (abortion due to medical and legal reasons), O05 (other types of abortion), O06 (non-specified abortion) and O07 (failed abortion attempt). The calculation of the abortion-specific MRR was based on the woman's place of residence. We did not use correction factors because there is no specific standardized factor proposed for deaths from abortion. The ratio denominator was the number of live births obtained from SINASC.

We analyzed the SIH data on hospitalizations from abortion according to admission diagnosis and according to the procedure carried out. The analysis according to diagnosis included the groups "miscarriage", "abortion due to medical reasons" and "other pregnancies that resulted in abortion". The following procedures from the SUS Table of Procedures, Medications and OPM were included in the analysis: "post-abortion/puerperal curettage" (0411020013) and "post-abortion uterine evacuation via manual vacuum aspiration (MVA)" (0409060070). For the comparative analysis of the number of hospitalizations due to abortion among the different states, we used the relationship between the number of hospitalizations from abortion in SIH and the number of hospitalizations for deliveries in SIH, with the goal of reducing the influence of fertility variations in the population and the use of supplementary health services. For the analysis of hospitalizations for procedures related to delivery, we considered all procedures classified in Subgroup 10 (delivery and birth) from Group 3 (clinical procedures), except "newborn care at the time of birth" (031001002-0). We further considered the procedures classified in Subgroup 11 (obstetric surgery) from Group 4 (surgical procedures), organization Form 01 (delivery).

We assessed data on mortality from abortion and on hospitalizations for diagnoses or procedures related to abortion according to the following variables (when available): woman's place of residence, sociodemographic characteristics (age, educational level, marital status, race/color), abortion classification (legal/miscarriage/other types/non-specified), year of occurrence and costs of hospitalizations from abortion. We analyzed the variable marital status for the period from 2011 to 2015 because of changes in the DC and Live Birth Certificate forms, with the inclusion of the field stable union.

This study was not submitted to an Ethics Review Board because it used public Ministry of Health data. Results are shown in aggregate, with no possibility of identification, in accordance with *Resolução 466/2012* of the Brazilian National Health Council.

Results

The SIM analysis showed that, between 2006 and 2015, 770 deaths with abortion as the underlying cause were recorded in Brazil. Despite the variation over the years due to the low magnitude of the absolute numbers, we observed a trend of reduction among the deaths from abortion in Brazil, with regional differences. The regions North, Southeast and Central had, at different times, the highest abortion-specific MMR over the period and the South Region had the lowest abortion-specific MMR in the whole period. The Central Region is the only Brazilian region that shows a clear rising trend in mortality from abortion based on data recorded in SIM. Abortion-specific MMRs for Brazil and each macro-region are presented in Figure 1.

There was a reduction in the proportion of deaths from abortion among maternal deaths recorded in SIM from 2006 to 2015. Deaths from abortion were 5.7% of maternal deaths in Brazil in 2006 and 4.1% in 2015, and were only 3.2% in 2014. The Southeast region had the highest reduction in the proportion and the Central Region saw an important increase, going from 3.9% in 2006 to 6.1% in 2015.

Non-specified abortion (category O06 of ICD-10) was the most frequent underlying cause among deaths from abortion in the period we analyzed, with an average of 56.5% of cases. Among the 770 deaths whose declared underlying cause was abortion, only 7 (0.9%) were from abortions performed for medical and legal reasons (O04), 115 (14.9%) were declared as miscarriages (O03), 117 (15.2%) as other types of abortion (O05) and 96 (12.5%) as failed abortion attempts (O07).

Between 2006 and 2015, deaths from abortion were most frequent in the 20-29 years aged group. Only in the year 2007 did the age group 30-39 years register a higher number of deaths. All regions also had a greater volume of deaths in the 20-29 year group in the set of analyzed data. The abortion-specific MMR was higher among women over 40 years of age and, in 2010 and 2014, among adolescents aged 10-14 years. In the Northeast and Southeast regions, which concentrate the highest number of deaths from abortion in SIM, we observed the highest abortion-specific MMR at both extremes of the age groups. In the other regions, despite the small proportion of deaths with no information (0.004% of births and no deaths), the small number of deaths from abortion leads to great variation to the indicator, which makes the analysis difficult.

The distribution of the total number of deaths from abortion between 2006 and 2015 according to skin color maintained a relatively stable distribution, with approximately half of deaths among brown women. The abortion-specific MMR according to skin color shows that, in Brazil, according to data recorded in SIM and SINASC, black women had the highest values from 2006 to 2012. In 2013 and 2014, indigenous women had the highest MMR. In 2015, with only one death from abortion and with 0.36% of the country's births, Asian women had the highest MMR in Brazil. In the 10-year average, black women maintained the highest MMR, however, there was an important reduction in this group's MMR in the past five years (Figure 2). Only in the Southeast region do black women still have the highest MMR. This variable also has a low proportion of missing data (around 5%) regarding deaths from abortion and births in the period.

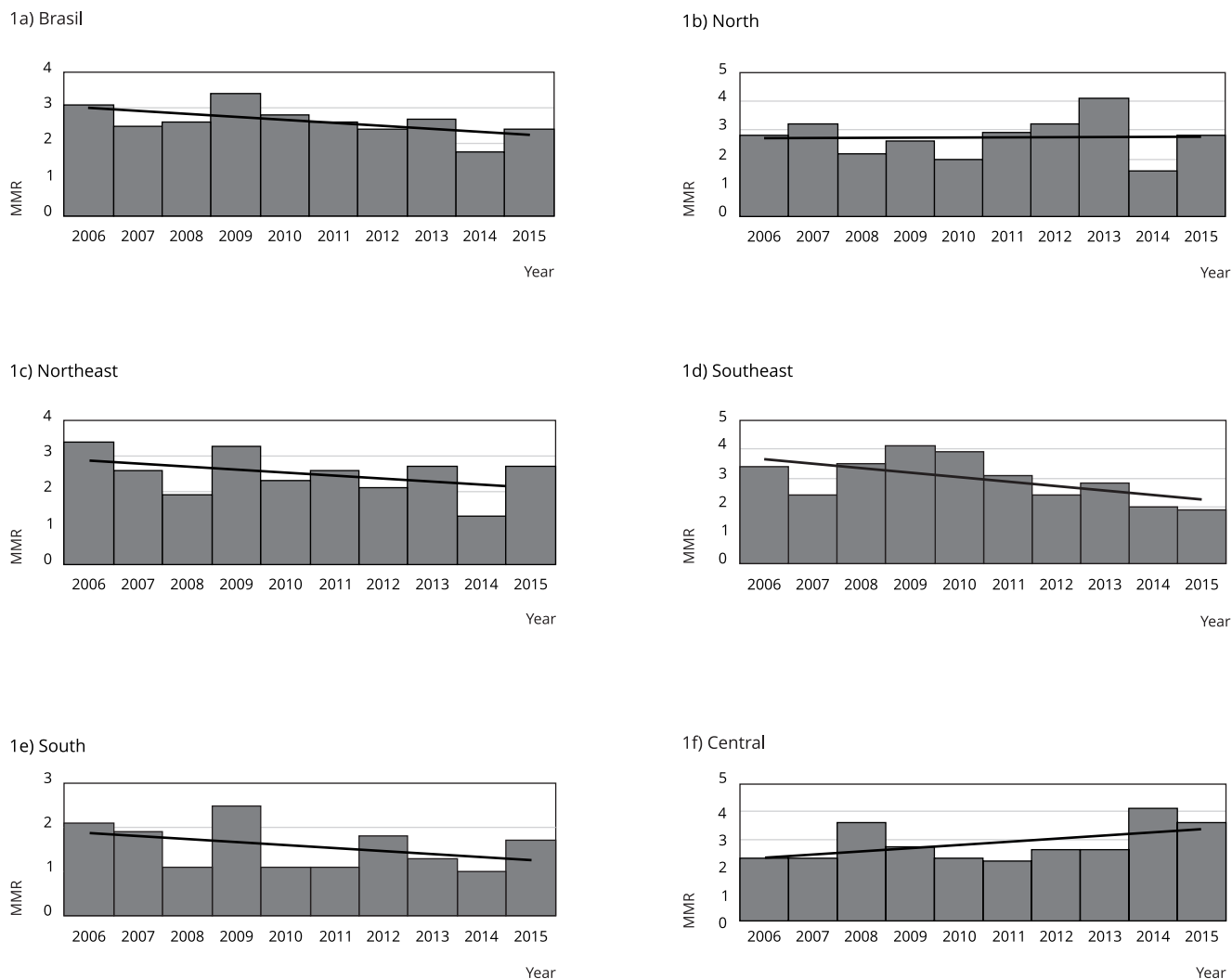
The proportions of deaths from abortion according to marital status remained stable from 2011 to 2015. The analysis of the average of the years, considering the categories "living in a union" (married and stable union) and "not living in a union" (single, separated, widow) shows that proportions, excluding records with no information (average of 8.2%), have remained at approximately 30% and 70%, respectively. The higher proportion of deaths from abortion among women not in a conjugal relationship is present in all Brazilian regions, varying in magnitude. This proportion is of 60.6% in the North, 63.5% in the Northeast, 73.8% in the Southeast, 90.5% in the South and 66.8% in the Central.

With regard to educational levels, we found a relative improvement in the quality of the data on deaths from abortion, with a 49% reduction, approximately, in the percentage of missing data, however, 16.7% were still missing this information in 2015. The lower educational categories ("no schooling" and "1 to 3 years of schooling") had a percentage and absolute increase in the number of abortions. The remaining categories had a reduction in the number of deaths. The comparative analysis of abortion-specific MMR according to educational groups is hindered by the small number of deaths in each category and the percentage of missing information for this variable.

The analysis of the percentage of deaths of woman of reproductive age that were investigated reveals differences between the Brazilian regions. In 2015, this percentage varied between 92.5% in

Figure 1

Abortion-specific maternal mortality ratio (MMR). Brazil and macroregions, 2006 to 2015.



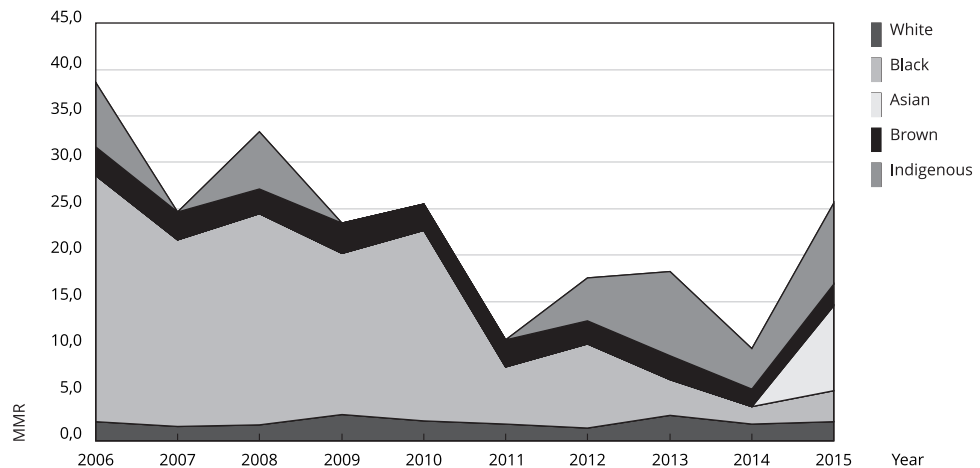
Source: Brazilian Health Informatics Departments (<http://datasus.saude.gov.br/informacoes-de-saude/servicos2/transferencia-de-arquivos>, accessed on 12/Dec/2018).

the Central and 86.7% in the North. Despite the large number of investigated deaths, the percentage of deaths of woman of reproductive age, excluding maternal deaths, with no information on the moment of death with regard to the pregnancy-puerperal cycle, varied from 15.4% in the South to around 36% in the North in 2015. In Brazil, this percentage varied from 54% to 29.2% between 2006 and 2015.

The cause of death considered in mortality analyses is the underlying cause of death. There are, however, other diagnoses listed in death certificates, not selected as underlying causes, but that are associated with the cause of death. The multiple causes analysis shows that, between 2006 and 2015, in addition to the already-mentioned 770 deaths, there were 220 deaths that mentioned abortion, however, with a different underlying cause. Of these, 58.2% had an underlying cause classified in Chapter XV of ICD-10, that is, they were maternal deaths declared for other causes, but with mentions of abortion. The most frequent underlying causes from Chapter XV among the 220 deaths with mention of

Figure 2

Abortion-specific maternal mortality ratio (MMR) according to race/color. Brazil, 2006 to 2015.



Source: Brazilian Health Informatics Department (<http://datasus.saude.gov.br/informacoes-de-saude/servicos/transferencia-de-arquivos>, accessed on 12/Dec/2018).

abortion are those classified in category O99 of ICD-10 (Other maternal diseases, classified in another part, but that complicate pregnancy, delivery and puerperium), followed by O85 (Puerperal infection), O23 (Genitourinary tract infection in pregnancy) and O96 (“death, by any obstetric cause, occurring more than 42 days, but less than one year, after delivery”).

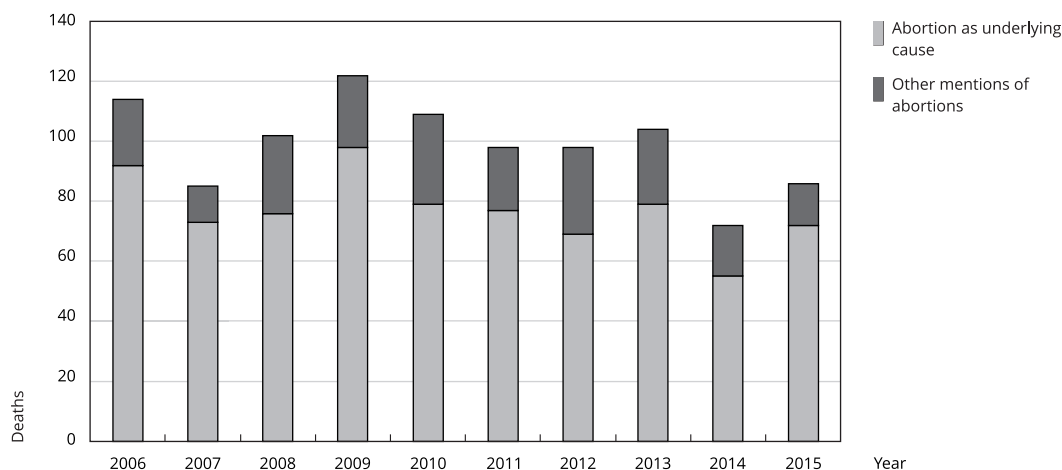
Further, among the 220 deaths that mention abortion, there are deaths whose underlying cause was classified in 13 other chapters of ICD-10. On average, in the years we have analyzed, in addition to those classified with an underlying cause from the abortion-specific ICD-10 categories, there were a further 28.8% of deaths with mentions of abortion. The proportion of the mention of abortion was different in each region, with considerable variation over the years. The average annual percentage was of 41.5% in the North, 34% in the Northeast, 26.9% in the Southeast, 51.6% in the South and 25.7% in the Central. Figure 3 shows the total of deaths with abortion as the underlying cause and the total of deaths from other underlying causes with mentions of abortion.

SIH recorded an average of approximately 200,000 hospitalizations/year for procedures related to abortion from 2008 to 2015. These hospitalizations represented a total value of BRL 40,000,000.00 per year, divided between professional services (35% on average) and hospital services (65% on average). These percentages varied little over time. The procedure informed for approximately 95% of cases was “Post-abortion/puerperal curettage”. “Post-abortion uterine evacuation via manual vacuum aspiration (MVA)” corresponded to only 5% of procedures, on average, in the period we analyzed. There was a progressive reduction in the number of hospitalizations in the period, which was present in all regions, albeit unequally. The highest percentage reduction occurred in the Northeast (12.1%), followed by the Central (11.4%), Southeast (10.7%), North (4.5%) and South (0.9%). At the national scale, this reduction was of 9.5%.

In the period we analyzed, SIH also recorded a reduction of hospitalizations for procedures related to deliveries. This reduction, which was of 5.9% for Brazil as a whole, is also present in all regions, but unequally. The Northeastern region also had the greatest reduction (12.2%), followed by the North (7.6%), Central (4.9%), Southeast (0.8%) and South (0.2%). The ratio of the number hospitalizations from abortion and the number of hospitalizations for deliveries experienced a discreet reduction in the country (3.8%), going from 105 hospitalizations for abortions for each 1,000 hospitalizations for delivery in 2008 to 102 hospitalizations for abortion for every 1,000 hospitalizations for delivery in

Figure 3

Deaths with abortion as an underlying cause or associated cause. Brazil, 2006 to 2015.



Source: Brazilian Health Informatics Department (<http://datasus.saude.gov.br/informacoes-de-saude/servicos2/transferencia-de-arquivos>, accessed on 12/Dec/2018).

2015. The Northeast, despite having the greatest reduction in hospitalizations from abortion, both in absolute number and in terms of percentages, still had the highest ratio of hospitalizations from abortion and delivery (104.4/1,000). In 2015, this ratio was of 104.2/1,000 in the Southeast, 103.1/1,000 in the North, 96.5/1,000 in the South and 93.6/1,000 in the Central (Table 1).

The analysis according to hospitalization diagnosis, including the groups “miscarriage”, “abortion due to medical reasons” and “other pregnancies that end in abortion”, from 2008 to 2015, shows that an average of approximately 212,000 hospitalizations/year were recorded in SIH. The total average value was of around BRL 47,000,000.00 per year, divided between professional services (34% on average) and hospital services (66% on average), with no important variations in the period.

As in the analysis of hospitalizations according to procedure, there was also an 8% reduction in the number of hospitalizations between 2008 and 2015, however, with no equivalent reduction in the total value informed. There was a reduction in the number of hospitalizations in all Brazilian regions except the South, where there was a very discreet increase.

The age group 20 to 29 years was the most frequent among women hospitalized with an abortion diagnosis in Brazil for the entire period of analysis, however, it had a reduction from 49.8% in 2008 to 44.5% in 2015. There was an increase in the proportion of the 30 to 39 year group, going from 25.9% in 2008 to 31.8% in 2015. This pattern is common to all regions. There are no hospitalizations recorded with no age information.

The high percentage of records with missing information (average of 38.2%) makes it impossible to analyze hospitalizations with an abortion diagnosis according to the race/color variable. The data on hospitalization according to SIH diagnosis available in the Tabnet tool do not include the variables educational level and marital status.

It is impossible to identify, based on the procedure, if the abortion was induced or if it was a miscarriage and there is no specific ICD-10 category for induced or illegal abortion. These should be classified in the category O05 (other types of abortion) or O07 (failed abortion attempt). Abortion due to medical and legal reasons, in turn, have a specific ICD-10 code. The analysis of SUS hospitalizations with diagnoses in the group “abortion due to medical reasons” is one of the possible ways of assessing access to legal abortion in Brazil. The total of these hospitalizations in the country had an initial reduction between 2008 and 2009 and was stable from 2009 to 2015. The average number of

Table 1

Número absoluto de internações e razão entre internações por aborto e parto. Brasil, 2006 a 2015.

	North	Northeast	Southeast	South	Central	Brazil
2008						
n	23,771	73,582	78,050	23,026	14,795	213,224
RA/D	99.7	104.2	115.7	97.1	100.5	106.4
2009						
n	23,636	72,838	77,844	22,815	14,539	211,67
RA/D	102.2	104.0	115.2	97.1	102.4	106.7
2010						
n	23,822	71,669	76,650	22,756	14,078	208,975
RA/D	103.7	104.4	114.8	97.5	99.2	106.7
2011						
n	23,793	67,774	73,410	22,373	13,607	200,957
RA/D	103.4	100.6	109.7	95.5	95.5	103.1
2012						
n	23,735	66,728	72,294	23,063	12,961	198,781
RA/D	107.1	103.9	109.7	98.6	93.5	104.9
2013						
n	23,529	64,511	71,383	22,532	13,268	195,223
RA/D	103.5	103.1	109.0	95.8	93.3	103.5
2014						
n	22,556	65,854	71,841	23,230	13,149	196,630
RA/D	96.7	103.6	105.6	96.3	88.3	101.4
2015						
n	22,712	64,687	69,695	22,818	13,108	193,02
RA/D	103.1	104.4	104.2	96.5	93.6	102.4

N: internações por aborto; RA/P: razão entre internações por aborto e parto.

Fonte: Departamento de Informática do SUS (Sistema de Informações Hospitalares do SUS. <http://datasus.saude.gov.br/sistemas-e-aplicativos/hospitalares/sihsus>, acessado em 12/Dez/2018).

hospitalizations in this period was of approximately 1,600/year. The same stability in the total hospitalizations was verified in the Southeast. In the Northeast, there was an important increase and, in the remaining regions, there was a reduction in the number of hospitalizations in the period, especially in the South. The average number of hospitalizations according to diagnosis in the other groups was of 109,000 hospitalizations/year in the group “miscarriage” and of 100,000 hospitalizations/year in the group “other pregnancies that end in abortion”. There was an inversion in the proportion of hospitalizations between the groups “Miscarriages” and “other pregnancies ending in abortion”. “Miscarriages” stopped being the most frequent category, corresponding to 47% of hospitalizations in 2015.

The SIH records of hospitalizations related to abortion was considerably inconsistent. In 2008, 2009 and 2010, in the State of Pernambuco, in 2014 and 2015 in the State of Goiás and in 2014 in the Federal District, the number of recorded deaths is flagrantly differ from the other states, from other years for the same states, and further from the number of reported hospitalizations. Data relating to these locations in these periods were not considered. From 2008 to 2015, SIH recorded an average of 45 deaths per year resulting from hospitalizations with abortion diagnoses. The data are relatively stable over the period and it is not possible to state if there is a trend of increase or reduction in the regions. Since the SIM analysis shows that there was a decrease in the number of deaths in the period, the ratio of the number of deaths from abortion recorded in SIH and the number of deaths from abortion in SIM increased from 47.4% in 2008 to 72.2% in 2015 (Figure 4).

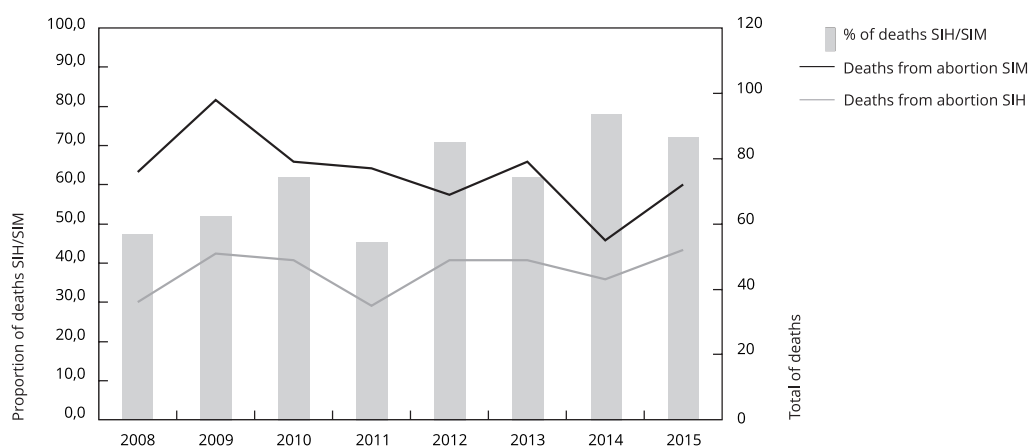
Discussion

In 2015, Brazil investigated 91.5% of deaths of woman of reproductive age. Despite the high percentage of investigations, there are clear problems. The investigation proportion is different when calculated based on the SIM investigation module or using the specific variable in the database, which suggests that the investigation information may not be fully incorporated into the database. The percentage of missing information regarding the moment of death, in terms of the pregnancy-puerperal cycle (29.2% for Brazil in 2015) reinforces this idea. It is possible that the lack of correction, by the investigation, of the underlying cause compromises the identification of maternal deaths, contributing to under-reporting. The same determinants that condition the under-reporting of maternal deaths in general apply to deaths from abortion recorded in SIM, especially those related to induced abortion. Other factors may play a role, such as legal, religious, ethical and family factors, among others. These factors may interfere with the determination and identification of the cause of death from abortion.

We identified 770 maternal deaths with abortion as the underlying cause in SIM from 2006 to 2015 which, if added to the 220 deaths that have abortion listed as a cause, would represent an increase of approximately 29% in the total of deaths associated with abortion in the period. Among the 220 deaths with causes associated with abortion, there are some with underlying causes that are frequently associated with abortion, such as puerperal infection. In some of these cases, the incorporation of the investigation results could identify abortion as the cause. There are others in which the ICD-10 rules determine that they should receive a specific code, such as late maternal deaths (more than 42 days of puerperium), which must always appear as the underlying cause in the category O96 of ICD-10 (“death, by any obstetric cause, occurring more than 42 days, but less than one year, after delivery”), even if abortion is the underlying cause. Among deaths with mentions of abortion with underlying causes out of ICD-10 Chapter XV, some have well-specified underlying causes, such as neoplasms and external causes, in which abortion may have been a consequence of other conditions. There are, however, deaths with mention of abortion and unspecified causes, such as sepsis and peritonitis, which may be consequences of abortion. A study carried out in Minas Gerais, from 2000 to

Figure 4

Total and proportion of deaths from abortion in SIH and SIM. Brazil, 2008 to 2015.



SIH: Brazilian Hospital Information System; SIM: Brazilian Mortality Information System.

Source: Brazilian Health Informatics Department (<http://datasus.saude.gov.br/informacoes-de-saude/servicos2/transferencia-de-arquivos>, <http://datasus.saude.gov.br/sistemas-e-aplicativos/hospitales/sihsus>, accessed on 12/Dec/2018).

2011, on abortion-related maternal mortality in light of multiple causes concluded that abortion was identified as the underlying cause in around 11% of deaths and a further 4% had causes associated with abortion. In the deaths whose associated cause was related to abortion, underlying causes were classified as maternal in 56% of deaths, while 44% were classified as non-maternal causes¹⁸. This study found similar results.

SIH recorded approximately 200,000 hospitalizations/year for procedures related to abortion from 2008 to 2015. "Post-abortion/puerperal curettage" was the procedure described in 95% of cases, while "Post-abortion uterine evacuation via manual vacuum aspiration (MVA)" corresponded to only 5%. SIH records procedures that require hospitalization. Procedures carried out without hospitalization are not recorded. The difference in the need for hospitalization for both procedures may account for part of the difference in the proportion of hospitalization for both procedures.

The number of hospitalizations from abortion identified in this study is considerably inferior to the estimates of the number of abortions in Brazil. A study carried out in Brazil, Chile, Mexico, Peru, Colombia and the Dominican Republic based on records of curettages performed in public services and on interviews with health professionals estimated, in 1991, the occurrence of 1,443,350 abortions in Brazil⁷. More recent estimates pointed to the occurrence of between 687,347 and 865,160 induced abortions in Brazil in 2013¹⁹. The number of hospitalizations from abortion that can be identified is influenced by the segmentation of the information for the public sector and by the already-mentioned quality of the information regarding the abortion diagnosis. It further refers to the proportion of terminations, whether miscarriages or induced abortions, which require hospital admission. The number of hospitalizations from abortion is only one source of data for estimating the total number of abortions that take place in Brazil.

The trend of reduction in the number of hospitalizations from abortions, of 9.5% in the analysis according to procedures, is also identified by other studies. A study that used SIH data from 1995 to 2013 estimated the number of induced abortions in the country and concluded that there was a 27% decrease in the hospitalizations of woman of reproductive age due to complications from abortion and the estimate of the annual number of induced abortions was reduced by 26%¹⁹.

The increase in the proportion of deaths recorded in SIH in relation to deaths from abortion in SIM, from 47.4% in 2008 to 72.2% in 2015, could have two explanations. The first is the increase in the proportion of deaths within hospitalizations in the public system, which are recorded in SIH, in comparison with the private sector. The second is the better recording of deaths in hospitalizations in SIH, despite the already-discussed fragility of the data, which mean this analysis must be considered with caution.

The profile of women who died from abortion that we identified coincides with findings from other studies. One study carried out in Minas Gerais¹⁸ presented the characteristics of women who died in relation to abortion as: women aged 20 to 34 years, single (68%) and black (70.5%), most with less than 7 years of schooling. The authors further noted that around 40% of data referring to the variables educational level and the moment of death in terms of pregnancy or puerperium were blank. Death from abortion characterizes a situation of health inequity due to the higher number of deaths among more vulnerable groups (low educational level and black race/color)¹⁸.

One limitation of this study was that we were unable to include data on the occurrence of abortions that did not require hospitalization and those that resulted in hospitalizations in the private sector. On the other hand, it has shown that more vulnerable women are more likely to die after an abortion, even observing only those who turn to the public system, who are known to be more susceptible to an unsafe abortion¹.

Conclusion

There are no data on unsafe abortion in the Brazilian information health systems.

The official databases do not enable estimates of the number of abortions that occur in Brazil. The available data are restricted to deaths from abortion and hospitalizations due to complications from abortion in the public health system.

The attention to adequately entering information into DC is a crucial factor for gaining greater precision in the mortality information. The quality of the information regarding the cause of death, the under-reporting of maternal deaths and those related to abortion, in addition to the completeness and correction of other variables in SIM could be improved with the systematic incorporation of information from investigations of deaths into the SIM database.

These could have an indirect repercussion on the better identification of deaths from abortion. The identification of deaths with mention of abortion in the DC but with underlying causes classified in other ICD-10 categories suggests the need to include a multiple causes analysis to better determine the scale of mortality involving abortion. The improvement of SIH data quality, especially with regard to the regularity of records, diagnoses and deaths, in addition to systematic, regular access to information from the private health system are actions that would contribute to a better understanding of abortion in Brazil.

Despite the under-reporting of deaths, official data on births and deaths enable us to establish the profile of the women who are at highest risk of dying from abortion in Brazil by calculating specific MMRs. These are black and indigenous women, with low educational levels, over the age of 40 or under the age of 14, in the regions North, Northeast and Central, and not in a conjugal relationship. This profile can be used as a risk marker in post-abortion hospitalizations, so as to increase clinical surveillance of these cases, resulting in a more favorable evolution. These groups mainly need access and qualification of reproductive planning and prenatal care actions so as to reduce the risk of abortion, whether induced or miscarriages.

Contributors

B. B. Cardoso, F. M. S. B. Vieira and V. Saraceni contributed significantly to study conception, data analysis and interpretation. All authors approved the final version of the paper for publication.

Additional informations

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Resumo

Segundo a Organização Mundial da Saúde cerca de 55 milhões de abortos ocorreram no mundo, entre 2010 e 2014, e 45% destes foram inseguros. No Brasil, dados sobre aborto e suas complicações são incompletos. Dados assistenciais estão somente disponíveis para o setor público e dados de mortalidade dependem de investigação do óbito. O objetivo do estudo foi descrever o cenário do aborto no país, utilizando dados públicos disponíveis para acesso nos diversos Sistemas de Informação – SIM (mortalidade), SINASC (nascidos vivos) e SIH (internação hospitalar). No período entre 2008 e 2015, ocorreram cerca de 200.000 internações/ano por procedimentos relacionados ao aborto, sendo cerca de 1.600 por razões médicas e legais. De 2006 a 2015, foram encontrados 770 óbitos maternos com causa básica aborto no SIM. Houve discreta redução dos óbitos por aborto ao longo do período, com variações regionais. Esse número poderia ter um incremento de cerca de 29% por ano se os óbitos com menção de aborto e declarados com outra causa básica fossem considerados. Entre os óbitos declarados como aborto, 1% foi por razões médicas e legais e 56,5% como aborto não especificado. A proporção de óbitos por aborto identificados no SIH, em relação ao total de óbitos por aborto identificados no SIM, variou de 47,4% em 2008 para 72,2% em 2015. Embora os dados oficiais de saúde não permitam uma estimativa do número de abortos no país, foi possível traçar um perfil de mulheres em maior risco de óbito por aborto: as de cor preta e as indígenas, de baixa escolaridade, com menos de 14 e mais de 40 anos, vivendo nas regiões Norte, Nordeste e Centro-oeste, e sem companheiro.

Sistemas de Informação; Aborto; Morte Materna; Saúde da Mulher; Direitos Sexuais e Reprodutivos

Resumen

Entre 2010 y 2014, según la Organización Mundial de la Salud, se produjeron en el mundo cerca de 55 millones de abortos, además un 45% de los mismos fueron inseguros. En Brasil, los datos sobre el aborto y sus complicaciones son incompletos. Los datos asistenciales se encuentran solamente disponibles para el sector público y los datos de mortalidad dependen de la investigación sobre el fallecimiento. El objetivo del estudio fue describir el escenario del aborto en el país, utilizando datos públicos disponibles para su acceso en los diversos Sistemas de Información – SIM (mortalidad), SINASC (nacidos vivos) y SIH (internamiento hospitalario). Durante el período entre 2008 y 2015, se produjeron cerca de 200.000 internamientos/año por intervenciones relacionadas con el aborto, siendo cerca de 1.600 por razones médicas y legales. De 2006 a 2015, se encontraron 770 óbitos maternos con el aborto como causa básica en el SIM. Se produjo una discreta reducción de los fallecimientos por aborto a lo largo del período, con variaciones regionales. Este número podría sufrir un incremento de cerca de un 29% por año, si se consideraran los fallecimientos donde se menciona el aborto y se declaran con otra causa básica. Entre los óbitos declarados como aborto, un 1% fue por razones médicas y legales y un 56,5% como aborto no especificado. La proporción de óbitos por aborto identificados en el SIH, en relación con el total de óbitos por aborto identificados en el SIM, varió de 47,4% en 2008 a un 72,2% en 2015. A pesar de que los datos oficiales de salud no permitan una estimación del número de abortos en el país, fue posible trazar un perfil de mujeres con mayor riesgo de fallecimiento por aborto: mujeres afrodescendientes e indígenas, con baja escolaridad, con menos de 14 años y más de 40, viviendo en las regiones Norte, Nordeste y Centro-oeste, y sin pareja.

Sistemas de Información; Aborto; Muerte Materna; Salud de la Mujer; Derechos Sexuales y Reproductivos

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