Original Article

Epidemiological research of the maternal deaths and compliance with the fifth millennium development goal

Pesquisa epidemiológica dos óbitos maternos e o cumprimento do quinto objetivo de desenvolvimento do milênio

Investigación epidemiológica de muertes maternas como contribución del quinto objetivo del desarrollo del milenio

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ABSTRACT

Objective: To identify and describe the epidemiological characteristics of maternal deaths that occured between 2000-2012 in a reference hospital in the state of São Paulo in order to contribute to the analysis of compliance with the fifth Millennium Development Goal.
Method: Epidemiological, retrospective and cross-sectional study with a population of 58 maternal deaths. Data were collected in the second half of 2013, through medical records and death certificates, and analyzed by SPSS version 13.0.
Results: An average age of 29.11 years was identified, 56.9% with 1-3 previous pregnancies, 56.9% cesarean deliveries, 84.5% of maternal complications occurred during pregnancy and the postpartum period, 81% of deaths occurred in postpartum, 56.9% of deaths were classified as direct causes, with 44.8% of deaths being attributed to high blood pressure.
Conclusion: There is a need for investment in obstetric care to optimize the reduction of complications during the gestation and puerperal period, thereby influencing the reduction of maternal mortality.
Keywords: Epidemiology. Women's health. Maternal mortality. Prenatal care. Delivery, obstetric. Millennium Development Goals.

RESUMO

Objetivo: Identificar e descrever as características epidemiológicas dos óbitos maternos ocorridos entre 2000 a 2012 em um Hospital de referência no interior do Estado de São Paulo no intuito de colaborar para a análise do cumprimento do quinto Objetivo do Desenvolvimento do Milênio.
Método: Estudo epidemiológico, retrospectivo e transversal com a população de 58 óbitos maternos. Os dados foram coletados no segundo semestre de 2013 em prontuários e em declarações de óbitos e analisados pelo programa SPSS versão 13.0.
Resultados: Identificou-se a idade média de 29,11 anos, 56,9% com 1 a 3 gestações anteriores, 56,9% partos cesáreos, 84,5% das complicações maternas ocorreram durante a gestação e o puerpério, 81% dos óbitos ocorreram no puerpério, 56,9% dos óbitos foram classificados como causas diretas, sendo 44,8% mortes atribuídas à hipertensão arterial.
Conclusão: Há necessidade de investimento na assistência obstétrica para otimizar a diminuição das complicações no período gravídico puerperal a fim de reduzir a mortalidade materna.
Palavras-chave: Epidemiologia. Saúde da mulher. Mortalidade materna. Cuidado pré-natal. Parto obstétrico. Objetivos de Desenvolvimento do Milênio.

RESUMEN

Objetivo: identificar y describir las características epidemiológicas de las muertes maternas entre 2000-2012 en un hospital de referencia en el Estado de São Paulo con el fin de contribuir al análisis del cumplimiento del quinto Objetivo de Desarrollo del Milenio.
Métodos: Estudio epidemiológico, retrospectivo y transversal con una población de 58 muertes maternas. Los datos fueron recogidos en el segundo semestre de 2013 en los registros médicos y certificados de muertes y analizados utilizando el programa SPSS versión 13.0.
Resultados: Identificada la edad promedio de 29,11 años, 56,9% con 1-3 embarazos anteriores, el 56,9% los partos por cesárea, el 84,5% acontecimientos de complicaciones durante el embarazo y el puerperio, el 81% de las muertes se produjo después del parto, el 56 9% las muertes por causas directas, y el 44,8% de las muertes atribuidas a la hipertensión arterial.
Conclusión: Hay necesidad de inversión en la asistencia obstétrica a fin de optimizar la reducción de las complicaciones en el embarazo puerperio influyen en consecuencia en la reducción de la mortalidad materna.
Palabras clave: Epidemiología. Salud de la mujer. Mortalidad materna. Atención prenatal. Parto obstétrico. Objetivos de Desarrollo del Milenio.

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INTRODUCTION

The World Health Organization (WHO) defines maternal death as the death of a woman during pregnancy or within a period of 42 days after its end, regardless of the duration or location of the pregnancy, from any cause related to or aggravated by the pregnancy or by measures taken in relation to it, but not from accidental or incidental causes[1]. According to studies conducted by WHO in 1990, approximately 585,000 women worldwide, died as victims of complications related to pregnancy and childbirth. Only 5% of them lived in developed countries[2]. Almost 20 years later, in the report on "World Situation of Children Maternal and Neonatal Health" the UN Children's Fund (UNICEF), the statistics regarding deaths due to complications related to pregnancy and childbirth remain discouraging. This report indicates that women in developing countries have 300 times greater chances of dying due to such complications than women from developed countries[3].

In the 1980s in Brazil, a number of national and international factors contributed to the greater attention received by maternal mortality in national policies[4]. Thus, in 2000, Brazil was one of 189 countries that signed the Millennium Declaration at the Millennium Summit organized by the UN (United Nations), which established a set of eight goals to be met by the year 2015 in order to ensure sustainable development of peoples and the eradication of poverty and hunger, the so-called "Eight Millennium Development Goals (MDGs)"[5], aiming to comply with, among other goals, the 5th, which is to improve maternal health by reducing maternal mortality and universalizing access to sexual and reproductive health.

The 8 MDGs determined were: 1) Ending hunger and misery; 2) To achieve universal primary education for all; 3) Promote gender equality and empower women; 4) Reduce child mortality; 5) Improve maternal health; 6) To combat AIDS, malaria and other diseases; 7) Quality of life and respect for the environment and 8) a global partnership for development[5-6]. The establishment of such goals reflected the growing concern about the sustainability of the planet and the serious problems affecting humanity and maternal health, considered one of the eight goals and determined as one of the priority areas[6]. Among these is the reduction of maternal mortality by three quarters when compared to the rates from 1990[7]. The 2008 MDG evaluation report notes that this was the goal that least progressed in the world, and maternal death still affects thousands of women every year[7-8]. Such evidence demonstrates that maternal mortality remains a major challenge for health systems worldwide[9].

Maternal mortality estimates developed by WHO, UNICEF and the United Nations Population Fund (UNFPA), in 2000, were 529,000 around the world and the ratio for maternal mortality (MMR) was around 400 per 100,000 live births in the world. In Brazil, there was a trend of decrease in MMR between 1990 and 2010, from 141 deaths per 100,000 live births to 68 maternal deaths per 100 thousand live births, representing a decrease of 52%, however, this fall remains insufficient for the regions of the Americas, and especially Brazil to reach the MDGs by 2015[10]. Actions such as articulations between non-governmental organizations (NGOs), medical institutions and other civil society organizations have an important social control role in Latin America and the Caribbean, in order to identify the magnitude of maternal mortality and its causes, the factors that determine it; and propose measures to prevent the occurrence of new deaths [12]. In this sense, greater clarity that appropriate indicators of maternal mortality are not only health indicators, but also relate to women's citizenship and the government's commitment to women's health [11].

Maternal mortality is therefore, a serious violation of the human right to health, occurring mainly in less developed countries, and mostly affecting women of low income and low educational power, showing the structural links between body and society and pointing to the secondary position of the female condition in most countries of Latin America and the Caribbean [12]. Knowledge about the occurrence and circumstances of maternal deaths is crucial to the planning of actions and public health strategies in order to reduce such occurrences.

In this sense, the objective of this study is to identify and describe the epidemiological characteristics of maternal deaths that occurred from 2000-2012 in a reference hospital in the state of São Paulo in order to contribute to the analysis of compliance with the fifth Millennium Development Goal. What are the epidemiological characteristics of maternal deaths occurred and registered at Hospital das Clinicas of the Ribeirão Preto Medical School of the University of Sao Paulo from 2000 to 2012? Moreover, it aimed to help fill the gap in nursing research on the investigation of epidemiological indicators related to maternal mortality, collaborating to the analysis of compliance with the fifth MDG, which aims to improve maternal health, thereby reducing maternal mortality[6].

METHODS

This is an epidemiological, retrospective and cross study, whose population consisted of maternal deaths in the Hospital das Clínicas of the School of Medicine of Ribeirão

Preto, University of São Paulo (FMRP / USP) from 2000 to 2012. The Hospital das Clínicas of FMRP / USP provides outpatient health care and hospital care, which includes preventive care, treatment and recovery, of a clinical and / or surgical nature, complementary diagnosis services and treatment in various medical specialties. Data collection was conducted in the second half of 2013, using secondary data from medical records and death certificates of women who suffered maternal deaths in the institution, surveyed between the years 2000 and 2012. After identifying the causes of death, described in the charts, the causes were classified as ICD-10, in direct obstetric causes (one that occurs due to obstetric complications during pregnancy and the puerperal period) and indirect obstetric causes (due to existing conditions before pregnancy or that developed during this period and were aggravated by the physiological changes caused by pregnancy), according to the Ministry of Health [1].

The Maternal Mortality Ratio (MMR) of the hospital studied was calculated by the ratio between the number of maternal deaths found in the institution under study and the number of live births in Ribeirão Preto – SP, multiplied by 100,000. According to WHO criteria (1991)[13], the RMM is classified as low in the event of up to 20 maternal deaths / 100,000 live births; average 20-49 maternal deaths / 100,000 live births; High 50-149 maternal deaths / 100,000 live births and very high when there are more than 150 maternal deaths / 100,000 live births. To meet the proposed objectives, sociodemographic variables (race / color, marital status and education); obstetric and health care history (number of previous pregnancies, previous deliveries, previous miscarriages and conducting pre-natal consultations); and the variables related to death (reason for hospitalization, health conditions at admission, time of death, the place where death occurred and basic causes of death, classified as indirect obstetrics and direct obstetrics) were explored. For the data analysis, a descriptive statistics by frequency distributions, measurements of central tendency and dispersion for the variables was performed, using the SPSS version 13.0.

The research project was submitted and approved by the Research Ethics Committee (CEP) of Ribeirao Preto, University of São Paulo School of Nursing (EERP / USP) under protocol number 23486513.90000.5393, and the Department of Gynecology and Obstetrics from Hospital das Clinicas, FMRP / USP under protocol number 67/2013. The research conformed to the Research Standards of the National Health Council Resolution No. 466, of December 12, 2012, which regulates the regulatory guidelines and standards for research involving human subjects. It is noteworthy that the Free and Informed Consent Form (TCLE) was presented to the EERP-USP zipcode in which a commitment was made to preserve the privacy and maintaine the confidentiality of the data collected from medical records of Hospital das Clinicas, FMRP / USP, as well as the privacy of their contents. Under this term, responsibility was also taken to ensure that all information would be used solely for implementation of this project, and dissemination of this data would only be carried out anonymously.

RESULTS

In the period from 2000-2012, there were 62 maternal deaths at Hospital das Clinicas of Ribeirão Preto Medical School of the University of São Paulo (FMRP / USP). The global RMM was 44.81 / 100,000 live births, classified as average RMM, according to WHO. Of the 62 maternal deaths occurred at HCFMRP / USP, 58 medical records were analyzed, because of the following losses: records not located in the said hospital information system, lack of information in the medical record or death certificate and / or damaged prints. After analyzing the 58 medical records / death certificates, it was observed that the youngest age found among maternal deaths in the studied institution was 14 years old, and the oldest, 44 years old, with a mean age of 29.11 years, with standard deviation of 7.74. Most maternal deaths occured among white women (70.7%), living with a partner (married and common-law marriage – 32.7%) and 10.3% of women had some type of education, although it should be reinforced that 88% of medical records and death certificates did not have this data, as shown in Table 1.

As for obstetric history, as seen in Table 2, it was found that 56.9% of women have one to three previous pregnancies; 60.4% had 1-3 previous deliveries and 56.9% had no previous abortions; 44.9% had prenatal visits, although it highlighted that 25.9% of the charts did not contain data regarding the realization of prenatal visits and types of previous deliveries.

The prevalent type of delivery was cesarean section in 58.6% of women, as seen in Figure 1.

According to data from medical records and death certificates, the reason for hospitalization that occurred in 84.5% of women was obstetric complications during pregnancy and postpartum and 15.5% for pregnancy resolution; 43.1% of women had severe health conditions or dying / dead during hospitalization, as described in the chart. About the time of death, 81% occurred during the postpartum period (early and late) and 53.4% of cases occurred in the ICU sector, as noted in Table 3.

Maternal deaths classified as direct obstetric occurred in 56.8% of cases. The main cause of maternal death in direct obstetric was high blood pressure, representing 44.8% of the deaths assessed. Indirect obstetric causes accounted for 43.1% of deaths, highlighting respiratory diseases 12.1%, as shown in Table 4.

DISCUSSION

The current scientific evidence on the reduction of maternal mortality shows that the results achieved by most countries will not be sufficient to meet the Millennium Development Goals, whose goal is to reduce by the maternal mortality ratio by 75% in 15 years, as is the case of Brazil. The analysis of the epidemiological profile of maternal mortality in Brazil shows an increase of 11.9% in the absolute number of maternal deaths and in the increase of the Maternal Mortality Rate in the country, 52.29 to 65.13 maternal deaths per 100 thousand live births in 2000 to 2009, with a different increase for each region [7].

Table 1 – Socio-demographic characteristics of maternal deaths at Hospital das Clínicas of Ribeirão Preto Medical School, University of São Paulo (FMRP / USP). Ribeirão Preto, Sao Paulo 2000-2012

Variables	n	%
Race / color		
White	41	70.7
Black	13	22.4
Yellow	1	1.7
Brown	1	1.7
Not specified	2	3.5
Marital status		
Single	18	31.1
Married	14	24.1
Partnership	5	8.6
Widower	1	1.7
Not specified	20	34.5
Education		
Elementary School	4	6.9
Incomplete Elementary School	2	3.4
Illiterate	1	1.7
Not specified	51	88
Total	**58**	**100**

Source: Hospital das Clínicas of the Ribeirão Preto Medical School, University of São Paulo (USP).

In this study, the results revealed an RMM of the hospital studied of 44.81 / 100,000 live births, representing an average rating, highlighting the need to invest in proven solutions for quality care during pregnancy, childbirth and the postpartum period. It is known that there are several factors that may contribute to the occurrence of maternal deaths, among which the sociodemographic and obstetric factors stand out[7]. Data on marital status in this study differ from another study conducted in Brazil[7], which identified the prevalence of maternal death certificates among unmarried women in 53.17% of cases, compared with 31.1% of our population. Some authors suggest that the prevalence of maternal deaths occurred among unmarried pregnant women can be attributed to the fact that, in these types of conjugal relationships, there is the breaking of ties

Table 2 – Obstetric history of maternal deaths in Hospital das Clínicas of the Ribeirão Preto Medical School, University of São Paulo (FMRP / USP). Ribeirão Preto, Sao Paulo 2000-2012

Variables	n	%
Previous pregnancies		
No previous pregnancy	5	8.6
1 pregnancy	10	17.2
2 to 3 pregnancies	23	39.7
4 or more pregnancies	14	24.1
Not specified	6	10.3
Previous births		
No previous deliveries	10	17.2
1 birth	15	25.9
2 to 3 deliveries	20	34.5
4 or more deliveries	7	12.1
Not specified	6	10.3
Previous abortions		
No previous abortion	33	56.9
1 abortion	11	19.0
2 abortions	2	3.4
3 abortions	1	1.7
Not specified	11	19.0
Prenatal consultation achievement		
Yes	26	44.9
No	17	29.3
Not specified	15	25.9
Total	**58**	**100**

Source: Hospital das Clínicas of the Ribeirão Preto Medical School, University of São Paulo (FMRP/USP).

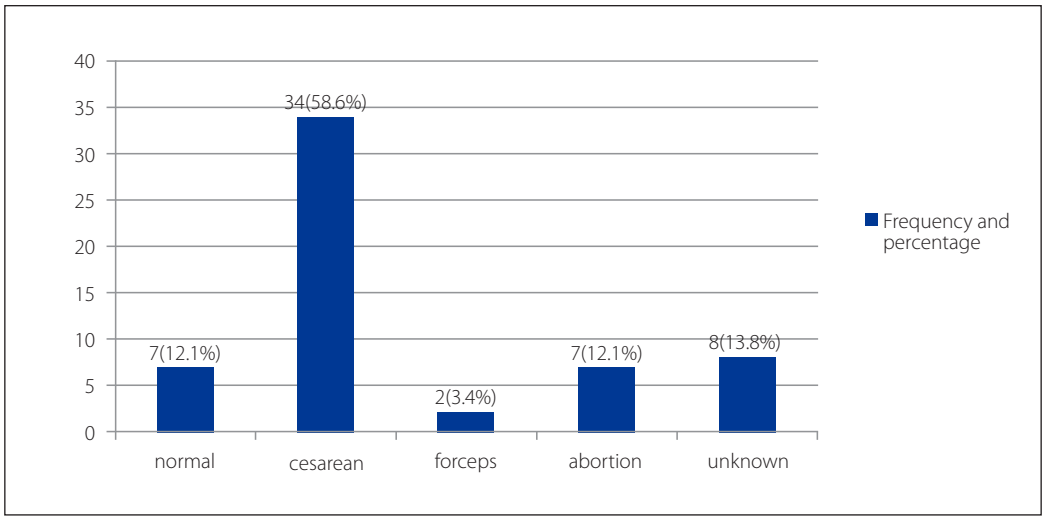

Figure 1 – Types of delivery of matern deaths in Hospital das Clínicas of the Ribeirão Preto Medical School, University of São Paulo (FMRP / USP). Ribeirão Preto, São Paulo 2000-2012

Source: Data extracted from medical records and death certificates at Hospital das Clínicas of the Ribeirão Preto Medical School, University of São Paulo (FMRP / USP).

and / or inconvenient decision making when pregnancy is discovered. Moreover, in most cases, there is a lack of emotional, social, financial, affective support, characterizing them as a vulnerable group[7]. These results reinforce the importance of training professionals about the sexual and reproductive health of women, highlighting the importance of assistance in family planning[14].

Women who are very young or of a very advanced age are at increased risk associated with pregnancy, childbirth and the postpartum period, however, such fact was not identified in this study. Although even if the women in this study who died were not at the age of obstetric risk, there is a consensus that better obstetric care, regardless of age risk factor is necessary, also paying attention to the early detection of vulnerable groups as well as mortality risk factors [7].

Regarding the race / color variable, there was a higher proportion of maternal deaths among white women, unlike a study conducted in Rio Grande do Sul [15] in which here was a predominance of maternal deaths recorded among women of the black color in the year surveyed, from 2004-2007. This study also identified that whit women were the ones who had lower MMR throughout the study period [15].

The sociodemographic aspect was considered, since research [16] revealed that the influence of the degree of vulnerability of the population, especially women. Therefore, there is need for greater attention among this population, with the guarantee of better care, especially during pregnancy and childbirth in order to contribute to the fulfillment of the fifth goal of the Millennium Development Goals, namely, contributing to the improvement of maternal health and consequently to reducing maternal mortality [6]. Considering the parity, there were more deaths in low reproductive risk women, meaning those with less than three previous pregnancies. It is known that women who have more than four pregnancies are prone to damage, since they have an increased risk of anemia, hemorrhage, congenital anomalies and low birth weight [17].

The type of delivery recorded with the highest number of deaths was the cesarean section. The high maternal mortality rates are known to be attributed to the global cesarean epidemic, since there is a high risk of maternal death related to cesarean sections compared to vaginal delivery, because cesarean delivery is associated with complications such as bleeding, infection, pulmonary embolism and anesthetic complications [18]. This way, it is pertinent to take into consideration the deaths that occurred in a hospital in Ribeirão Preto, which is a highly complex reference of the municipality and region and has specialized care in obstetrics. Thus, the prevalence of cesarean births indications arising from women at high obstetrical risk is noted. Despite having this type of care, in many cases, the intervention of health professionals was not enough to prevent death due to severe conditions and dying / dead women were hospitalized.

When the time of death is analyzed, it was shown to be predominant during the early and late postpartum period. Studies that assessed maternal deaths in Rio Grande do Sul

Table 3 – Maternal deaths according to reason and hospitalization condition, moment of death and place of the maternal deaths at Hospital das Clínicas of the Ribeirão Preto Medical School, University of São Paulo (FMRP / USP). Ribeirão Preto, Sao Paulo 2000-2012

Variables	n	%
Reason for hospitalization		
Clinical and obstetric complications during pregnancy	25	43.1
Clinical obstetric complications during postpartum	24	41.4
Labor	7	12.1
Induction of labor	1	1.7
Elective caesarean section without labor	1	1.7
Health condition when hospitalized		
Good	3	5.2
Regular	20	34.5
Severe	17	29.3
Dying / dead	8	13.8
Not specified	10	17.2
Moment of death		
Gestation	1	1.7
Labor	4	6.9
Early postpartum*	42	72.4
Late postpartum**	5	8.6
Abortion	4	6.9
Not specified	2	3.4
Place of death		
Intensive care unit (ICU)	31	53.4
Obstetrics (OBS)	10	17.2
Medical clinic (CLM)	6	10.3
Other places***	11	19.1

Source: Data extracted from medical records and death certificates at Hospital das Clínicas of the Ribeirão Preto Medical School, University of São Paulo (FMRP / USP).
Key: Early postpartum * (death occurring within 42 days of gestation) and late postpartum ** (death occurring 43 days to less than one year of termination of pregnancy). Other places *** (Hematology, Gynecologic Clinic. Coronary Care Unit (CCU), Surgery Clinic (CLC), Semi-intensive unit (EU-ECU), Coronary unit (EU-ECU), Hematology).

and in Recife pointed out that the birth period and the immediate postpartum period were critical periods of risk for maternal death, noting that this important stage of care has been neglected in the country [15, 19]. Therefore, the deaths could be prevented or avoided by effective and available actions, even in the poorest countries of the world. Regarding the direct and indirect causes analyzed in this study,

Table 4 – Maternal deaths according to basic cause of maternal deaths at Hospital das Clínicas of the Ribeirão Preto Medical School, University of São Paulo (FMRP / USP). Ribeirão Preto, Sao Paulo 2000-2012

Cause / CID 10	N	%
Directly obstetric	33	56.9
Gestational Arterial Hypertension	26	44.8
Puerperal infection	06	10.3
Embolism of obstetric origin	01	1.7
Indirectly obstetric	25	43.1
Respiratory diseases	7	12.1
Circulatory diseases	4	6.9
Brain death	2	3.4
Bacterial meningitis	2	3.4
Other indirect	10	17.2

Source: Data extracted from medical records and death certificates at Hospital das Clínicas of the Ribeirão Preto Medical School, University of São Paulo (FMRP / USP).

we observed a more significant relation between the direct causes of maternal mortality. Hypertensive disorders were the main direct obstetric cause of maternal death. Research conducted in Brazil found that the specific direct causes of death in Brazil, and in the state of Sao Paulo, were hypertension, hemorrhage, abortion and puerperal infections [20]. Because they are largely preventable, the predominance of these causes reflects the need for good prenatal care, appropriate appointments and tests, for a better understanding of pregnancy development in order to reduce maternal and fetal risks, as well as quality delivery and postpartum care [19], requiring humanized, continued and permanent training of the professionals who cater to women during pregnancy and childbirth.

In this context, in order to reduce maternal mortality, primary health care can contribute through the implementation of actions and strategies to promote reproductive and sexual health, in providing educational activities related to prenatal, postpartum and family planning and the training of health professionals with special attention to the puerperal period, since the service is not postpartum prioritized, favoring the onset of complications, thus contributing to the emergence of maternal deaths.

Therefore, the outlook of the Brazilian maternal mortality that reflects the increase in maternal mortality in recent years differs from the global reality, which showed a decrease of 34% between 1990 and 2008, approximately 546 000 to 358 000 deaths [14]. Such global analysis should serve as an incentive and model for countries whose goals

for the fulfillment of the fifth goal of Millennium Development have not yet been achieved. For this, the importance of measures such as: quality prenatal care, capable of early detection of vulnerable groups and risk factors for morbidity and mortality; implementation of appropriate measures rather than exposure to unnecessary procedures; proper planning of delivery; expanding access to health services; effective commitment of physicians and nurses involved with are for the mother during the prenatal, delivery and postpartum period; guarantee of being welcomed and receiving humanized care [7] is reinforced. Apart from these measures, the importance of promoting educational activities of public awareness and awareness of women's health is also emphasized; investing in continuing education for health professionals with services focused on the importance of proper reporting of cases of maternal deaths in order to avoid underreporting of cases and erroneous records.

FINAL CONSIDERATIONS

Maternal mortality is an indicator of the disparity, inequity between men and women and its extension reveals the place of women in society, and their access to health and social services and economic opportunities, besides reporting the reproductive health situation, reflects the living conditions of a population. It constitutes one of the most appropriate indicators to assess the coverage and quality of health services in full, as it is an extremely sensitive indicator of poverty and social inequality. It should be noted that this study has some limitations. One of them refers to the difficulty of working with secondary data obtained from medical records and death certificates, since they come from an existing database system, in which it the absence of errors and misconceptions in filling out the information on death certificates cannot be guaranteed. Such limitation could be expressed in the identification of several confusing and conflicting information, hampering the progress and achievement of the research results. Another limitation refers to the large number of unspecified information from medical records and death certificates, allowing the existence of bias in the results of this study.

The correct reporting of maternal deaths provides a real overview of epidemiological indicators related to maternal mortality in the country, contributing to the planning and implementation of health actions and strategies to help meet the 5th millenium development goal determined by WHO [9]. The under-reporting of maternal deaths, however, is a major obstacle to the analysis of maternal deaths.

After analyzing the data found, it can be seen that there is still a long way to go in relation to pregnancy and its implications. For a safe pregnancy, it is essential to ensure quality prenatal care in order to optimize the reduction of maternal mortality through early identification and appropriate management of obstetric complications by health professionals involved in the care. The main causes of maternal deaths are known, and could be prevented or avoided through effective and available actions, even in the poorest countries of the world. This tragedy is even greater when one considers that women die in pregnancy and childbirth and that many of these deaths could be prevented through basic preventive measures, such as early detection of complications, faster decision making in situations of emergency care, and the availability of qualified professional staff to care for women during pregnancy and childbirth.

This current situation of maternal mortality reinforces the need for contribution of services and managers in the implementation of health policies and the search for concrete solutions to reduce maternal deaths. Therefore, the results found regarding the characteristics of epidemiological indicators related to maternal deaths made it possible to analyze the need for greater efforts to achieve the proposed goals for the fulfillment of the fifth millennium development goal presented by the World Health Organization. Such findings presented in this study contribute to the teaching, research and assistance related to maternal health as they provide a situational overview of the epidemiological profile of the local maternal mortality, highlighting the need to implement actions and strategies to help meet the fifth MDG. Therefore, the purpose of the disclosure of this research is to disseminate the results in order to raise awareness among health professionals, especially those working directly in breast care that necessary measures are taken in order to improve maternal health, thereby reducing mortality maternal and preventing family breakdown that the death of a pregnant or postpartum woman can cause.

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