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METROPOLITAN INSTITUTE OF EDUCATION
FAMETRO UNIVERSITY CENTER
COURSE OF NURSING

MATERNAL MORTALITY

WHEN THE BABIES LOSE THEIR MOTHERS DUE TO PREMATURE DEATH

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MATERNAL MORTALITY: WHEN THE BABIES LOSE THEIR MOTHERS DUE TO PREMATURE DEATH

Mortalidade materna: quando os bebês perdem suas mães devido à morte prematura

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ABSTRACT

Objective: Identify in the published articles the main factors that cause premature maternal mortality in pregnant women or when they give birth.

Method: This is an exploratory descriptive study in the search for scientific publications on causes of maternal death. The study took place from the beginning of August 2019 to September 2020. Platforms such as SCIELO, LILACS BVS were used and the selection criteria for the research bibliography were the eligibility and ineligibility of articles, theses and monographs. Thus, 20 studies on the subject "Maternal mortality, when the babies lose their mothers due to premature death" were selected for analysis.

Results: Maternal death in Brazil is directly linked to the living conditions of the Brazilian female population, mainly to socioeconomic factors or lack of commitment to basic social assistance and health prevention. Among the measures to reduce the critical cases of maternal mortality, we can mention the specialized and humanized care, as well as accurate diagnoses so that afterwards care is sought and the worsening of the number of deaths is avoided. Thus, it is necessary to look more carefully at this critical health scenario as hundreds of cases could and can still be avoided, as long as more attention is given to women through preventive health care.

Keywords: Pregnant women; Causes of death; Access to information; Access to Health Services.

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1.   INTRODUCTION

The World Health Organization (WHO) defines maternal mortality as the death of a woman during pregnancy or within 42 days after the end of the pregnancy, due to any cause related to the pregnancy or due to factors related to it.

Martins and Silva (2017) report that maternal mortality is one of the indicators of the health discrepancy between developed, developing and underdeveloped countries. For this reason, developing countries and underdeveloped countries have joined together to reduce the maternal mortality rate and, in Brazil in 1987 the Maternal Mortality Committee was created in the state of São Paulo and later at the national level, with the main objectives actions of a strategic, investigative, informative and promotion and prevention nature aimed at reducing high maternal death rates, as well as the causes that lead to deaths.

Costa et al (2011) points out that the WHO presented a comparison between the years 1990 and 2008 on the indicator of maternal mortality in the world, in which a decrease in the risk of maternal mortality (RMM) of 34% was identified. In 2008, the estimated occurrence was 358 thousand maternal deaths worldwide, with the RMM of 260 maternal deaths for every 100 thousand live births, which means a risk of maternal death for every 140 pregnancies.

However, the discrepancy between developed and developing countries was maintained. In developed countries, the lowest MRI rates were found, with 14 deaths for every 100,000 live births. In turn, in developing countries the RMM was 290 deaths for every 100,000 live births, with the majority of cases being concentrated on the continents of Africa and Asia. It should be noted that in Africa - Angola, one maternal death occurs for every 29 pregnancies and this rate of maternal mortality being one of the highest in the world.

Morse et al (2011) reports that in Brazil the causes of maternal deaths, regardless of the region are hypertensive diseases and hemorrhage, alternating the position in some states, without analyzing the determinants of maternal deaths. Martins and Silva (2017) add that the direct obstetric causes are related to complications in pregnancy, childbirth or the puerperium due to inadequate treatment, bad practices and omissions. The indirect ones are those that result from diseases that already existed before pregnancy or in a pathology that developed during pregnancy without a direct relationship with obstetric causes, but that are aggravated by the specific physiological conditions of a pregnancy.

The RMME Specific Maternal Mortality Ratio showed relevant indices in single, widowed and judicially separated women and, it points out that among widowed women, rates of up to 62.9 in 100 thousand live births were observed, women declared judicially separated presented indices of 51 , 8 and single women had RMME rates of 70.8 per 100,000 live births.

The study shows that the woman's marital status and marital status contributes to a situation more vulnerable to maternal death and that the lack of a partner or husband can probably lead to insecurity and lack of family support. Thus, the presence of a partner in the pregnancy-puerperal period becomes a relevant protective factor in reducing maternal morbidity and mortality. (CARRENO, BONILHA, COSTA, 2011).

Still in this context of the causes of maternal mortality, the Ministry of Health (2009) analyzed other causes of maternal death such as hypertension, hemorrhage, puerperal infections, diseases of the circulatory system complicated by pregnancy, childbirth and the puerperium and abortion, what are the top five causes of maternal death.

The maternal death data collection system in Brazil is classified in group E, that is, poor data quality or due to the lack of thorough and comprehensive research throughout the national territory. However, there are obstacles in terms of data collection, therefore, change statistics and actual causes of death. With rare exceptions, the indices are calculated from the Declared Maternal Mortality (MMD), obtained from the death certificates, not considering the masked or undeclared cases (VEGA, 2017).

To measure maternal mortality, its extent and predisposition in space and time, the Maternal Mortality Coefficient (CMM) is used as a health indicator. This indicator is evaluated by the number of maternal deaths for every 100 thousand Live Born Babies (BNV), and the limit of 20 deaths per 100 thousand live births is acceptable by WHO. (BOTELHO et.al, 2014).

Martins et al, (2017) reports that in recent years some measures have been adopted in order to minimize the effects of underreporting on the prevalence of maternal mortality, obtained through data from the Mortality Information System (SIM). Among them, the research process carried out by the maternal mortality prevention committees with a view to identifying the relationship between the basic cause of death and a possible pregnancy stands out.

Another strategy adopted is the research method called the Reproductive Age Mortality Study (RAMOS) developed to measure the number of underreported

maternal deaths and calculate an adjustment factor for the correction of official data based on the death data of women of reproductive age.

Vega et.al (2017) reports that simple but important measures such as reproductive planning, monitoring and treatment of cardiopathies in the puerperium, magnesium sulfate in pre-eclampsia and eclampsia, antibiotics in infection, safe abortion, oxytocin or misoprostol in post-hemorrhage-birth and professional training contribute to the reduction of the identified causes, thus guaranteeing the right to life for these women.

In Brazil, the main users of the Unified Health System (SUS) are women and, of these, 65% are between 12 and 49 years old (CARRENO; BONILHA; COSTA, 2011).

The avoidability of death means providing family structure and the construction of the mother-baby bond, providing the pregnant woman with exams and prenatal care throughout the pregnancy.

2. CAUSES OF MATERNAL MORTALITY

In many countries, pregnancy-related deaths are a major cause of death for women of reproductive age. Maternal mortality is an indicator of access to quality obstetric care and women's living conditions, with wide disparities between regions and countries. In 2000, the Maternal Death Ratio (RMM) was estimated at six deaths per 100 thousand live births in Canada, while in Haiti this Ratio was 680/100 thousand live births (LEITE et al, 2011).

Picoli et al (2017) explains that maternal mortality (MM) is an indicator that shows the health and life conditions of women, indicating which health care policies in prenatal, childbirth and the puerperium should be implemented.

For Costa et al (2011), the maternal mortality ratio in developing countries remains well above that recommended by the WHO (RMM below 20 deaths in 100 thousand live births). According to the WHO, mortality associated with the pregnancy-puerperal cycle and abortion does not appear among the top ten causes of death among women aged 10 to 49 years. However, the seriousness of the problem is evidenced when related to healthy women in the reproductive period, these deaths being preventable in 92% of cases if the local health conditions are similar to those of developed countries.

It is observed that the main causes are hemorrhage, hypertension, sepsis, abortion and embolism. The challenge for reducing maternal mortality due to abortion is even greater, in view of situations such as clandestinity and illegality.

The World Health Organization (WHO) estimates that in 2008 about 13% of maternal deaths worldwide, equivalent to 47,000 were due to unsafe abortions. In Brazil, abortion is among the five main causes of maternal mortality and, it is related to approximately 5% of the total maternal deaths, for this reason, in the last years there has been a great discussion in the country about the decriminalization of abortion above all, involving a complex set of political, legal, moral, religious, social and cultural aspects (MARTINS et al, 2016).

Regarding indigenous women, Alves (2019) estimates that in Brazil the cause of death is related to the pregnancy-puerperal period, these deaths are possible to avoid in 92% of cases. These cases are defined as maternal deaths and are characterized as violations of human rights and 99% of them occur in regions of greater poverty and higher levels of inequality, which is why maternal mortality indicators are important for assessing the living and health conditions of a population.

Martins and Silva (2017) emphasize that the direct obstetric causes are related to complications in pregnancy, childbirth or the puerperium due to inadequate treatment and bad practices and omissions. The indirect ones are those that result from diseases that already existed before pregnancy or from a pathology that developed during pregnancy, without a relation to the direct obstetric causes, but that were aggravated by the specific physiological conditions of a pregnancy.

In this context, Lima et al (2017) says that in 2012 in Brazil the main direct causes of maternal death were hypertension (20.2%) and hemorrhage (11.9%) and among the indirect causes, the most frequent were diseases of the circulatory system representing (7.3%) of the total deaths.

Mota et al (2012) reports that although the implications of dengue in the evolution of pregnancy have been poorly studied, some factors described by some studies have contributed to the identification of adverse outcomes that occurred in the health of pregnant women and their babies.

Since 1995, the Ministry of Health has included an option in the death certificate for women of childbearing age (10 to 49 years), so the doctor must indicate whether she was pregnant at the time of death or whether she was pregnant in the twelve months that before death. (PEREIRA, 2015).

According with Martins and Silva (2017), the literature describes that 95% of maternal deaths in the world could be prevented if public and private services expanded women's sexual and reproductive rights, in addition to ensuring safe and respectful obstetric care.

Even when the worst is avoided, some abominable sequelae remain and, therefore, it is estimated that for each maternal death, another 16 women suffer the consequences of poor care,

becoming sterile or acquiring thrombosis that can lead to amputation of the legs. (PEREIRA, 2015).

## 2.2. Data about maternal mortality in Brazil

The Ministry of Health (2012) emphasizes that the maternal mortality ratio (RMM) estimates the risk of death of women during pregnancy, abortion, childbirth or up to 42 days after childbirth attributed to causes related to or aggravated by pregnancy, abortion, puerperium or measures taken in relation to them. Thus, taking into account the most diverse factors that correlate this sad end, the estimate of the Maternal Mortality Ratio for the set of capitals of the Brazilian states and the Federal District, in the first half of 2002 was 54.3% per 100,000 live births (LAURENTI, JORGE, GOTLIEB 2004).

Maternal Mortality Committees are considered the most appropriate instances to determine the circumstances of each maternal death, the implementation of each of the municipal and state committees in Brazil was established by the Ministry of Health with the support of the Pan American Health Organization and the United Nations Fund. (NASR et al, 2017)

According to the Ministry of Health (2020), in the period from 1996 to 2018 the Mortality Information System (SIM) recorded approximately 39 thousand maternal deaths, however not all maternal deaths that occur in Brazil are correctly registered in the SIM as maternal deaths , the declared causes often register the terminal cause of the affections or injuries that last survived in the succession of events that culminated in death, which masks the basic cause and makes it difficult to identify maternal death. For this reason, the Maternal Mortality Ratio (RMM) is calculated by the Ministry of Health using correction factors for the underreporting of maternal deaths in the SIM. In 2018, the RMM was 59.1 deaths for every 100 thousand live births, a number well above the goals signed with the United Nations (UN).

The Graph 1 shows the real data on the types of maternal mortality through the study carried out by Medeiros et.al (2018), in the period from 2001 to 2010 where 6,932 deaths were recorded in the State of Amazonas. Of these, 241 were of obstetric causes, 172 (71.36%) direct and 69 (28.64%) indirect:

Graph 1. Cause and types of maternal mortality
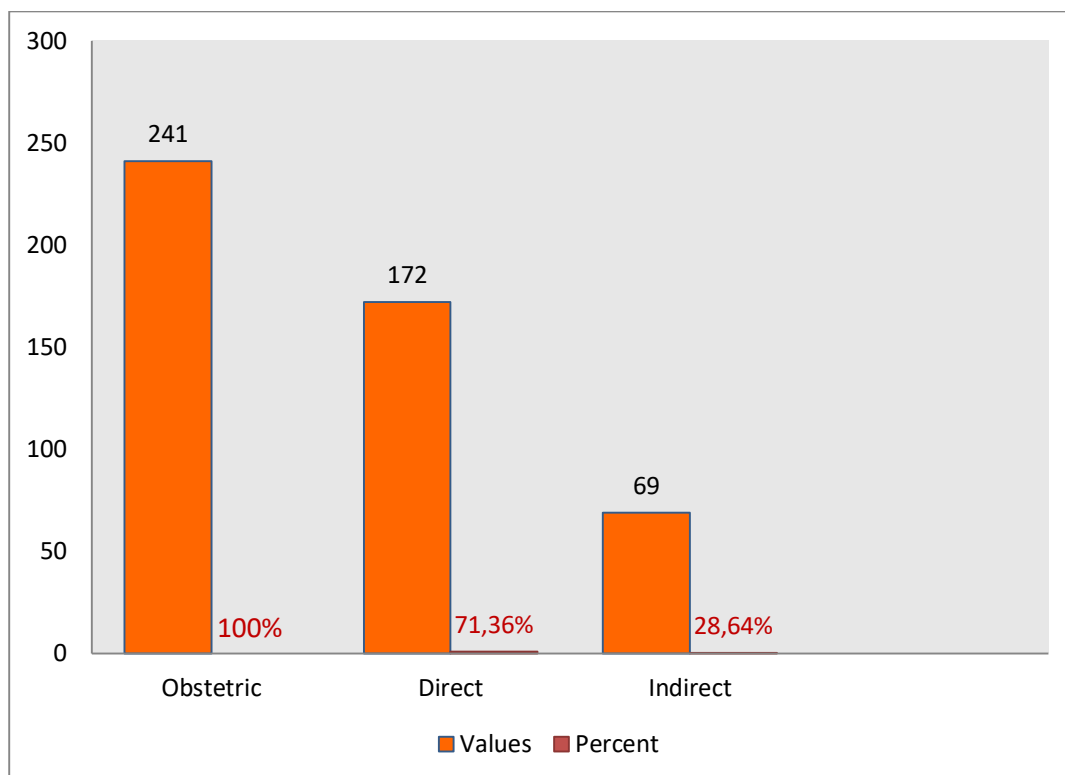
Source: Medeiros et.al (2018).

Graph 1 shows that obstetric causes occupy the first place in the causes of maternal mortality, followed by direct causes and finally, indirect causes. These data refer to the period from 2001 to 2010.

Pereira (2015) informs that the reduction of maternal mortality is one of the eight millennium goals signed by several countries and, among them, Brazil. In our country, the expectation is to reduce the rate to 35 deaths per 100,000 births.

Gianini (2010) points out that the reference hospitals, for fulfilling a defined role in the care network for the care of more complex and serious cases, end up being sentinel sites for the occurrence of events of this nature, and can offer crucial data that contribute to solving the problem maternal mortality.

The WHO stresses that, in order to contribute to the reduction of maternal mortality, it is necessary to increase research that provides evidence-based clinical and programmatic guidance, establishing global standards and providing technical support to States. Knowing the urgency of this theme in Brazil, the possibility of using these correction factors to obtain more accurate estimates of how maternal mortality rates behave over the past few years is essential to know the regional differences and the main causes, as well as being extremely important for public health policies in the country and for planning the health service (SILVA et.al 2016).

Since 1997, the registration of maternal death has become a duty of the states and municipalities of Brazil, due to the determination of a normative act that declares maternal death a compulsory notification event. The measurement of maternal mortality can result in the adequate definition of public policies. In the international context, the provision of qualified services and the improvement of obstetric care in health services to reduce maternal mortality is emphasized. (MARTINS, SOUZA, ARZUAGA-SALAZAR, 2013).

3. METHODOLOGY

This is an exploratory descriptive study in which we chose methods of Integrative Literature Review (RIL), as it is a method that provides the synthesis of knowledge and the incorporation of applicability of results and significant studies in practice (Souza, Silva, Carvalho, 2010). In order to investigate the Maternal Mortality enabling an understanding of the factors that lead to this reality.

The search for scientific publications was carried out from April to August 2020, using virtual libraries: online electronic scientific library (SCIELO), Lilacs and Virtual Health Library, using the following descriptors "Pregnant Women", "Prenatal", "Incarcerated", "Prison". Regarding the eligibility criteria: articles published in the last 20 years 2002-2020 in Portuguese and Spanish complete and available for free. Ineligibility criteria: articles in summary form, monographs, master's dissertation.
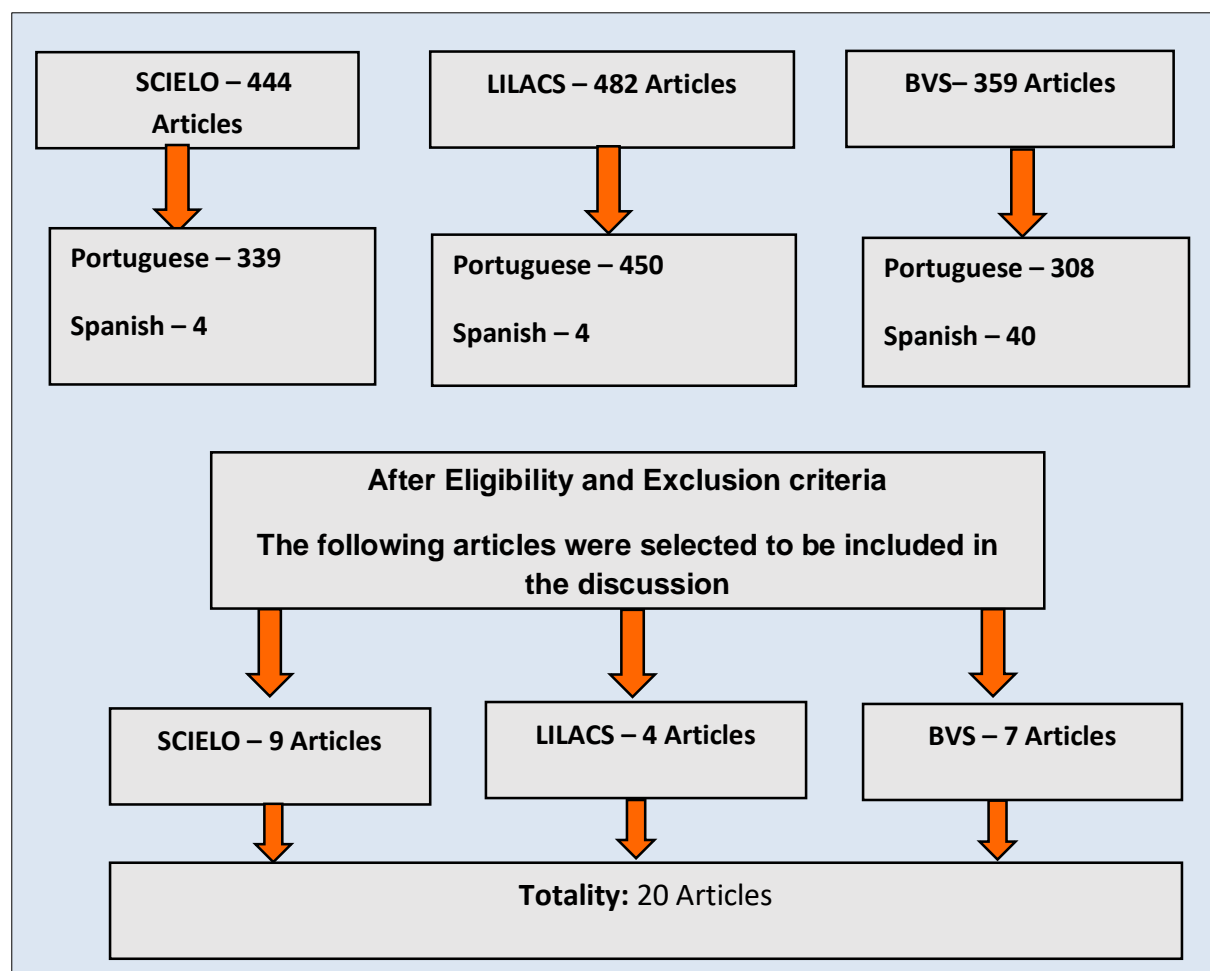
To achieve the objective, the following guiding question for the study was defined:

What are the main factors that lead to Maternal Mortality?

From the answer to this question, we made the discussions, as established in the next paragraph of this work "results and discussion".

4. RESULTS AND DISCUSSION

4.1. Flowchart of the results obtained on the research platforms

SCIELO – 444 Articles	LILACS – 482 Articles	BVS– 359 Articles
Portuguese – 339 Spanish – 4	Portuguese – 450 Spanish – 4	Portuguese – 308 Spanish – 40

After Eligibility and Exclusion criteria

The following articles were selected to be included in the discussion

SCIELO – 9 Articles	LILACS – 4 Articles	BVS – 7 Articles

Totality: 20 Articles

After searching for articles through the scientific databases at the Virtual Health Library (VHL), *Scielo*, Lilacs and BVS, 20 studies were identified and after filtering and analysis, 15 were selected because they met the study inclusion criteria.

After detailed reading of each selected article, the data were crossed according to the objectives of the work.

In an analysis of maternal death estimates by Szwarcwald et.al (2014) in Brazil from 2009 to 2011, it was alarming in some states, especially in the State of São Paulo (Southeast Region) with more than 41 thousand maternal deaths of childbearing age. The North Region had a result of more than 15 thousand deaths, being led by Pará State with 7,107 deaths followed by Amazonas with 3,219 deaths.

In another study by Martins (2017) in the State of Minas Gerais, the characteristics of women who died due to abortion consequences were single, in a total of 117, (68%) aged between 24-34 years and 133, (72.7%) with schooling from 4th to 7th grade, total 36, (34.6%). Black women in a total of 105, (70.5%) and the most frequent place was in a hospital environment, 179, representing (97.8%).

In the study carried out by Gomes et.al (2018) in Bahia in the years 2004 to 2015 it was pointed out that the deaths occurred mostly with brown women (59.25%), aged between 20 and 29 years (39.12%). Regarding the level of education and marital status, the prevalence of single women (50.87%) and with schooling between 4th to 7th grade of elementary school (20.14%) was maintained.

Penha et.al (2018) reports that in the years 2008 to 2010 he found 45 deaths due to direct obstetric causes, among them 50% were due to pre-eclampsia, eclampsia and hypertensive disease specific to pregnancy. Continuing the line of thought, the author claimed that hypertension is also the cause of premature births, since in this way it is possible to save the life of the mother and child.

Brito et.al (2015) points out that about 10% of pregnancies progress to high risk, of these, when SHEG (Specific Hypertensive Syndrome of Pregnancy) leads the ranking of causes of maternal mortality with fatality, with the highest rates present in the Northeast Regions and Midwest of Brazil.

The WHO cites some recommendations to prevent these cases from becoming irreversible and lethal, such as calcium supplementation for those with vitamin deficiency, regular monitoring of blood pressure and antihypertensive drugs for pregnant women with severe hypertension, in addition, it also recommends the use of low-dose acetylsalicylic acid for women who are at high risk of developing the problem in the future. In case of care during labor or delivery, the recommendation is to anticipate the induction of labor, the use of magnesium sulfate as an anti-inflammatory that can be administered intramuscularly or intravenously.

Herculano et al (2012) mentions that in Brazil, despite advances in care for pregnant women at the outpatient (increased prenatal coverage and access to laboratory tests) and hospital (incentive to normal delivery, adoption of clinical protocols for management pathologies and complications), the actions developed have been shown to be less effective than desired in reducing maternal mortality. The main causes of

maternal death continue to be hemorrhages and high blood pressure, both preventable through quality prenatal and childbirth care.

Regarding the cause of death from hemorrhage, Souza et.al (2013) reports that in the period from 1997 to 2005, 22,281 deaths of women of childbearing age were computed. However, the authors concluded that in this period there was a reduction in the RMM (Maternal Mortality Ratio) from 10.34 in 1997 to 9.96 in 2009.

In another study carried out in Santa Catarina states, there was also a reduction in cases of maternal mortality from hemorrhage according to the authors in the period from 1997 to 2010 the RMMH (Maternal Mortality Ratio from Hemorrhage) went from 2.98 in 1997 to 0, 99 in 2010. However, during this period oscillations were observed, in 2007, for example, it was the year with the highest number of deaths, 11.24 years. (MARTINS, SOUZA, ARZUAGA-SALAZAR, 2013).

According to Costa et al (2012), in the period from 2004 to 2007 there were 323 deaths in Rio Grande do Sul. RMMH / Year corresponds to 56.9 in 2004 and 52.5 in 2007. The profile of these women changed a little in relation to those previously mentioned, in this, the age corresponds to the range of 40 to 49 years old, with schooling from 1st to 3rd grade of Elementary School.

Thus, it was possible to notice that in addition to the research periods being the same, there was also a reduction in the numbers presented, however, the numbers are still not considered ideal and need more attention and care to avoid situations that may endanger mother and child throughout pregnancy.

5. CONCLUSION

The study on maternal mortality shows that the situation of pregnant women in Brazil is still worrying and needs to make society in general aware of the precarious and fragile situation faced by the female population.

In this sense, it is necessary to have health policies that include assistance to pregnant women, as well as their babies throughout pregnancy, especially prevention and care actions during the prenatal period.

This research, through the analysis of studies published recently, shows that Brazilian women, especially those in a vulnerable state, are in constant risk of being part of this maternal death statistic, because they do not have it often, not even within the family and not even on the part of the state psychological, maternal and prenatal care support, essential health services for a pregnant woman.

Thus, this study makes it possible to identify the profile of women who experience pregnancy at risk, as well as the way prenatal care is performed and their differences during childbirth. In view of what was exposed in the study, there is a need for systematic monitoring of women and their babies from basic health care, especially prenatal care accompanied by health professionals. Thus, it is expected that the work presented here will contribute to the reflection of health professionals and institutions in relation to pregnant women in a vulnerable state in Brazil.

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ANNEX

Table 1. Data collected from articles

Author	Title	Idiom/Platform	Results
CAMACHO, Elyade Nelly Pires Rocha et.al. (2020)	Cause of maternal mortality in metropolitan region I in the 2013-2015 triennium, Belém, PA.	Portuguese/ LILACS	The RMM is also considered an important indicator of social reality, regions with higher investment quality have lower mortality rates.
CARDOSO, Bruno Baptista; VIEIRA, Fernanda Morena dos Santos Barbeiro; SARACENI, Valeria. (2020)	Abortion in Brazil: what does the official data say?	Portuguese/ SCIELO	The official health databases do not allow a real estimate of the number of abortions in Brazil, since most of them are illegal.
OLIVEIRA, Emanuel Thomaz de Aquino et al. (2020)	Mortality Ratio Pattern Analysis Maternal Hypertension	Portuguese/ LILACS	46 maternal deaths were identified in Píaui, from 2012 to 2016, most of them women with schooling from 8 to 11 years of study, from 30 to 39 years of age, brown and single.
NUNES, Maria das Dores Souza; MADEIRO, Alberto; DINIZ, Debora (2019).	Maternal deaths from abortion among adolescents in Piauí, Brazil.	Portuguese/SCIELO	The main result of this study, highlighted by the stories of the adolescents, is that deaths could have been avoided had there been greater assistance agility.
OLIVEIRA, Rita de Cássia de; DAVIM, Rejane Marie Barbosa. (2019)	Prevention And Treatment Of Postpartum Hemorrhage	Portuguese/ BVS	He reports that the exchange of experiences between the team is essential for there to be improvement and change in the current situation.
GOMES, Janaina Oliveira et al. (2018)	Sociodemographic and clinical profile of maternal mortality	Portuguese/LILACS	It became evident that maternal mortality is a serious public health problem and that knowledge about the circumstances and occurrences of maternal deaths is fundamental for planning health actions and strategies.

Medeiros LT, Sousa AM, Arinana LO, Inácio AS, Prata MLC, Vasconcelos MNG. (2018)	Maternal Mortality in the State of Amazonas: Epidemiological Study	Portuguese/ LILACS	In the period from 2006 to 2015, there were 564 deaths due to maternal mortality in Amazonas. Of these, 329 (58.33%) occurred in Manaus, capital of the state, and 235 (41.67%), in other municipalities in the interior. Another point analyzed was that most of these women were young, single, with low education and mixed race.
PENHA, Jardeliny Corrêa da et al (2018)	Reason for maternal mortality from hypertension: an epidemiological study.	Spanish/ BVS	She reports that despite the steps taken, there is much to be done, through public policies and health actions to achieve a reduction in maternal morbidity and mortality.
VIEIRA, Solana Nunes et al. (2018)	Evaluation of Nursing Care in Postpartum Hemorrhage	Portuguese/ BVS	It was found that 28 (84.85%) knew the causes; 23 (69.70%) would have knowledge about preventive measures; 24 (72.73%) knew the control measures, however, 20 (60.61%) had never acted in a real situation of Postpartum Hemorrhage.
Martins, Eunice Francisca et al. (2017)	Multiple causes of abortion-related maternal mortality in the State of Minas Gerais, Brazil, 2000-2011.	Portuguese/SCIELO	The evolution of maternal mortality in the State of Minas Gerais during the study was considered stable.
PRADO, Pâmela Fernanda; SILVA, Stael Silvana Bagno Eleutério da. (2017)	Use of ambulatory blood pressure monitoring in gestational hypertensive disorders.	Portuguese/BVS	For the diagnosis as well as treatment of arterial hypertension, the use of ABPM is essential to reduce the health problems of hypertensive pregnant women.
RÊGO, MIDIÃ GOMES DA SILVA, et al (2017)	Perinatal deaths preventable by interventions by the Brazilian Unified Health System.	Portuguese/SCIELO	There was a slight decrease in the perinatal mortality coefficient.
BRITO, Karen Krystine Gonçalves et al. (2015)	Prevalence of pregnancy-specific hypertensive syndromes (SHEG).	Portuguese/BVS	The provision of qualified care is an essential component for the early detection of complications, health education and, consequently, the reduction of maternal and fetal mortality.

PEREIRA (2015)	Maternal Mortality: how the neglect of women's health prevents gender equality.	Portuguese/SCIELO	The level of the maternal mortality rate is still considered high, although unreliable, even with the efforts of NGOs focused on this topic, it remains a nightmare for Brazil.
Organização Mundial de Saúde - OMS (2014)	WHO recommendations for the prevention and treatment of preeclampsia and eclampsia.	Portuguese/BVS	Most deaths related to pre-eclampsia and eclampsia could be prevented if women were provided with timely and effective care, delivered according to evidence-based standards.
SZWARCWALD, Celia Landmann, et al (2014)	Estimation of the mortality ratio in Brazil, 2008-2011.	Portuguese/BVS	The results indicated values higher than those that should have been achieved according to the reduction predicted by the fifth millennium goal, but pointed to a decrease in the period 1990-2011.
MARTINS, Haimee Emerich Lentz; SOUZA, Maria de Lourdes de; ARZUAGA-SALAZAR, Maria Angelica. (2013)	Maternal mortality from hemorrhage in State of Santa Catarina, Brazil	Portuguese/ SCIELO	Between 1997 and 2010, in Santa Catarina, there were 61 deaths from hemorrhage (12.42% of the total of Maternal Deaths). She reports that most deaths are caused by direct obstetric interventions, that is, directly linked to the actions that the pregnant woman receives.
SOUZA, Maria de Lourdes de et.al (2013)	Maternal mortality from hemorrhage in Brazil.	Portuguese/ SCIELO	There was no significant reduction in RMM rates over the series | (1997-2007).
CARRENO, Ioná; BONILHA, Ana Lúcia de Lourenzi; COSTA, Juvenal Soares Dias da. (2012)	Epidemiological profile of maternal deaths in Rio Grande do Sul, Brazil: 2004-2007	Portuguese/SCIELO	It was observed that the highest RMME was found in women with less education.
HERCULANO, Marta Maria Soares et al (2012)	Maternal deaths in a public maternity hospital in Fortaleza: an epidemiological study.	Portuguese/SCIELO	Low quality of death investigation records was perceived, consequently, there may be higher numbers that aggravate this cause.