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IN-HOSPITAL STILLBIRTH OF FETUSES WEIGHING 2,500G OR MORE IN 2018 AND 2019 IN THE CITY OF RIO DE JANEIRO: AN ANALYSIS OF PRENATAL CARE, CHILDBIRTH AND DEATH SURVEILLANCE

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Abstract: In-hospital stillbirth of fetuses weighing 2,500g or more is a sentinel event given the possibility of preventable death. **Objective** : To analyze data from assistance to pregnant women who resulted in in-hospital stillbirths weighing 2500g or more. **Method:** This is a descriptive, retrospective study carried out with secondary data from the stillbirth database of SMS/RJ. For this study, in-hospital deaths with birth weight greater than or equal to 2,500g that occurred in the years 2018 and 2019 were selected, which were investigated with a home visit. **Results:** In the years 2018 and 2019, there were 326 stillbirths of mothers residing in the MRJ, weighing 2,500g or more. Stillbirths were classified for the most part as preventable (78%). For most pregnant women, prenatal care was characterized by an adequate number of consultations (85.3%), performance of routine exams (92.7%) and vaccination schedule (73.2%). However, low adherence of pregnant women to the indicated treatments was found (46.3%), low record of access to specialists when indicated (34.1%) and little use of collective health education practices (2.4%). In hospital care, just over half of the women (56.1%) had a record of the recommended rapid test exams, there was a low record of the participation of a companion in the reports of labor (31.7%), a high percentage (92, 7%) did not have the fetal heartbeat auscultation test performed in the first consultation (reception and risk classification). Stillbirth occurred with hospitalization time longer than six hours (48.8%), in only 2.4% of the medical records there were records of the opportunity for parents/relatives to visualize the fetus. Death surveillance identified user complaints related to maternity care (51.2%) and prenatal care (2.4%). Most deaths were discussed in the technical groups of the primary care coordinators (73.2%). **Conclusion:** The high percentage of preventable stillbirths demonstrates the need for qualified care. The fetal death investigation service pointed out problems, but did not make the appropriate recommendations for managers and professionals. Although the deaths occurred in the hospital environment, it is known that the prenatal service is directly associated with the prevention of morbidities and mortality.

Keywords: In-hospital mortality; prenatal care, stillbirths; fetal weight; health surveillance.

INTRODUCTION

Despite the negative impacts on women's health, on the well-being of families and being neglected for decades, stillbirth, given its magnitude, has gained importance in recent years as a relevant indicator of maternal health.WHO published national, regional and global estimates of stillbirths in 2011, highlighting the occurrence of about 2.6 million stillbirths affecting women and their families in 2009. This publication also showed the lack of reliable data in countries where most of the stillbirths occur. In 2014, Every NewbornactionPlan, a multi-partner global movement to end preventable maternal and newborn deaths and stillbirths, has set a target for national stillbirth rates of 12 or fewer stillbirths per 1000 births in all countries by 2030.[1]

Although the global stillbirth rate has dropped by 65.3% since 1970, in 2016 it is estimated that there were approximately 1,700,000 stillbirths worldwide, the vast majority in low- and middle-income countries.[2] Unlike high-income countries where 90% of stillbirths occur in the period before delivery, in low- and middle-income countries half of these deaths still occur during delivery. These deaths occur mainly in fetuses with the potential to survive, evidencing the possibility of preventability of this tragedy.[3]

In a study evaluating the quality of the registration of fetal deaths in the Brazilian Mortality Information System, data from the SVS showed that between 2013 and 2016, 127,330 fetal deaths were recorded, with an average of more than 30,000 fetal deaths/ year. With 23.9% of the records, intrauterine hypoxia (unspecified types and those occurring before delivery added together) was the main cause of death, followed by fetal death of unspecified cause (21.5%) and maternal hypertensive disorder (10, 3%). Of the total number of stillbirths, 17.1% were ≥ 2,500 g and occurred in full-term pregnancy.[4]

A study carried out in Recife, with data from 2010 to 2014, concluded that there was an increase in fetal deaths by 12.1%, with maternal conditions and asphyxia/hypoxia at birth as the main causes. Based on the identification of the causes of these deaths, it was possible to assess that most were preventable and that gaps in care during childbirth explained the occurrence of asphyxia/hypoxia.[5]

In Brazil, almost all births (99%) occur in hospitals, interventions in labor and delivery are very frequent and more than 50% of births are cesarean sections. Being mostly preventable by adequate access to diagnoses and effective and early interventions, it is assumed that the hospital would bring greater safety to pregnant women and their babies, however, preventable intrapartum deaths represent more than 40% of all stillbirths.[5,6]

As a strategy of the policy to reduce stillbirths in 2010, fetal death was considered mandatory in the country and its surveillance was instituted, establishing the possibility of identifying the determining factors and subsidizing the adoption of measures for its prevention.[7]

In addition to the mandatory notification of fetal death in the country, the Stork Network was established with the objective, among others, of ensuring good practices and qualified assistance for care during pregnancy and childbirth.[8] It is expected that the sum of these two political initiatives must converge towards a greater qualification of care and a decrease in stillbirth rates in the country.

In order to better identify the causes of perinatal deaths and the factors related to their avoidability, classifications were established regarding the possible interventions that could prevent the occurrence of deaths. In Brazil, the most used and non-exclusive classifications for fetal deaths are: Wigglesworth – for perinatal deaths and the Brazilian List of Avoidable Causes of Death (EBL).[9]

Therefore, this study aimed to describe the intra-hospital stillbirth of fetuses weighing 2,500g or more in the years 2018 and 2019 in the city of Rio de Janeiro, performing an analysis of prenatal care, childbirth and surveillance of the baby. death, identifying elements that can support health actions in the care of pregnant women that can reduce stillbirths.

METHODOLOGY

Descriptive, exploratory, documentary study, part of the doctoral thesis entitled: Study on fetal death in the city of Rio de Janeiro in recent years (2015-2019). The study was carried out using databases provided by the Municipal Health Department of Rio de Janeiro (SMS/RJ), which contain information from investigations of fetal deaths and data resulting from assessments of fetal death surveillance. The Infant and Fetal Death Surveillance Information System (SISINF) was developed at the SMS/RJ Health Surveillance Superintendence and has been in use since 2015.

For this study, we intentionally selected the data that comprise in-hospital stillbirths, with a view to better understanding how prenatal care, hospital care during labor and delivery, and health surveillance took place. Data were

collected at SMS/RJ from August to December 2020, based on the forms of investigation of fetal deaths produced by the Surveillance Service of the Municipal Health Department of Rio de Janeiro (SMS/RJ).

The fetal death investigation forms are standardized with the following data: type of death, child identification, maternal identification, obstetric history, past pathological history, reproductive planning, prenatal care data, childbirth care data, household after death (with the interview when carried out), underlying cause of death, classification of death as preventable or not, demarcation of the discussion in a Working Group (WG) or Committees for the investigation of infant and fetal deaths of the Primary Care Coordinations (CAPs), problems encountered, and recommendations made.

After hospital, outpatient and home investigations, a summary of the case is made. The summary form is filled in and entered into the surveillance system. The cases with the complete investigations go to the WG of the Regional Committee, which meets, discusses the case and decides which cases will also go to the Commission, usually the most relevant from the point of view of avoidability, due to the large number of cases to be be discussed.

The inclusion criteria for this study were in-hospital stillbirths (positive fetal heartbeat at hospital admission) in the years 2018 and 2019, of mothers residing in the MRJ with a weight greater than or equal to 2,500g, whose deaths were investigated by surveillance in health and had a report of the postpartum home interview of the stillbirth. After applying the study inclusion criteria, 41 stillbirth investigation records were obtained. The variables that made up the care planning activities (Table 2) are based on the care recommendations of the Ministry of Health (MOH) [11,12.]

The project was submitted to the Research Ethics Committee (CEP) and approved under CAEE opinion number 28109020.9.3001.5279.

RESULTS

In the years 2018 and 2019, there were 160,822 births in the city of Rio de Janeiro, of which 1,465 were stillbirths weighing 500g or more, for a stillbirth rate of 9.1 per 1,000 births. During this period, there were 326 stillbirths weighing 2,500g or more, resulting in a stillbirth rate of 2.02 per 1000 births in this weight range. Among the total number of stillbirths in this weight range, only 41 (12.57%) presented, in addition to the hospital death investigation form, the postpartum home investigation interview.

The mothers of these stillbirths were mostly between 20 and 35 years old (78%), considered themselves non-white (82.9%), had elementary school (51.2%), did not have a partner (46.3%), had no formal occupation (53.6%) and just over half (53.6%) were in their third pregnancy or more.

Regarding stillbirths, more than three quarters (75.6%) were term pregnancies (37-40 weeks), 58.3% were born by cesarean section and 92.7% occurred in public health services. Regarding the classification of preventability by the SMS/RJ regional commissions, 78% of deaths were considered preventable and the main diagnosis of the cause of death was intrauterine anoxia/ hypoxia (68.3%) as shown in Table 1.

Regarding the results of the analysis of fetal death by the death investigation committee, it was identified that only about 1/3 of pregnancies (34.1%) were planned. The vast majority of women (85.3%) had six or more prenatal consultations and had records of requests for routine prenatal examinations (92.7%). However, there was unavailability of results of tests performed (9.7%), reports

Variable	Category	No (41)	%
Age	less than 20 years	4	9.8
	20 to 35 years	32	78.0
	more than 35 years	5	12.2
Education	Fundamental	21	51.2
	Medium	18	44.0
	Technician	1	2.4
	ignored	1	2.4
marital status	live without a partner	19	46.3
	live with partner	17	41.5
	ignored	5	12.2
Race/Color	White	7	17.1
	not white	34	82.9
Occupation	Yea	17	41.5
	No	22	53.6
	ignored	two	4.9
Number of previous pregnancies	None	10	24.4
	One	9	22.0
	two or more	22	53.6
gestational age	Less than or equal to 32 to 33 weeks	3	7.3
	34 to 36 weeks	two	4.9
	37 to 40 weeks	31	75.6
	41 weeks or more	5	12.2
type of delivery	Vaginal	17	41.5
	Caesarean	24	58.3
Type of establishment where the birth took place	Public	38	92.7
	Others	3	7.3
Cause of death (I) after investigation	Hypoxia / Anoxia	28	68.3
	adramnia	1	2.4
	post-datism	two	4.9
	DPP/SFA	two	4.9
	unspecified fetal death	1	2.4
	undetermined cause	two	4.9
	malformation	1	2.4
	chorioamnionitis	1	2.4
	For other cord disorders	1	2.4
	Uninformed	two	4.9
preventable stillbirth	Yea	32	78.0
	No	two	4.9
	Inconclusive	4	9.7
	Uninformed	3	7.3

Table 1- Sociodemographic, gestational and death preventability data of women with in-hospital stillbirths in MRJ in 2018 and 2019.

of lack of adherence by the pregnant woman to the tests and/or prescribed treatments (46.3%) and absence of records of vaccination schedules (43.9%).

In the vast majority of cases (82.9%) the pregnant women continued to be assisted by low-risk/usual risk prenatal care. It was also identified that 34.1% of the women were referred to other professional categories for care, in addition to medicine and nursing, and only 2.4% had a record of any type of collective health education practice. Just over half of the women (51.2%) received home visits during pregnancy and in less than a third of the cases there was a record of the presence of a companion during pregnancy and childbirth (31.7%).

Regarding the care provided during the risk classification at admission and admission to the maternity ward, only 7.3% of the women had the BCF auscultation performed. Just over half of the mothers of stillbirths (56.1%) underwent rapid tests during the hospital admission process and almost half (48.8%) had already been hospitalized for six hours or more when fetal deaths were diagnosed.

Regarding the questions raised by the death surveillance teams in the home interviews carried out after childbirth, just over half (51.2%) responded that they had complaints related to the care received at the maternity ward, 2.4% had complaints related to prenatal care and 46.3% had no complaints of care received during pregnancy and delivery. The interviews carried out by the surveillance of deaths had as participants women (mothers of stillbirths) in 75.6%, fathers (7.3%), other family members (12.2%) and a small portion refused to be interviewed (4, 9%). Among the complaints made to the health services (data not tabulated), the vast majority concerned the care received at the maternity ward, such as: neglect, rudeness, lack of help and information, delay in service and consultation of the BCF, lack of adequate treatment. and neglect.

After joining the information from the maternal records of the health units, prenatal records and postpartum interviews, 73.2% of the cases of deaths were discussed by the GT and 24.4% by the investigation committees of infant and fetal deaths from CAPs.

In the investigation files of deaths resulting from the investigations, only 4.9% had summaries with recommendations for the services (Table 3).

DISCUSSION

In the vast majority of investigations carried out in this group of stillbirths (in-hospital death and weight greater than or equal to 2500g), the event was considered preventable (78%). Knowing the profile of women who gave birth to these fetuses and the care received by them during prenatal care and childbirth in the MRJ health units can contribute to a better understanding of the causal factors and the actions necessary for their prevention.

Stillbirth that can be prevented by improving care is a chronic problem in the country. A 1997 study carried out in São Paulo already pointed to causes of fetal death due to pathologies that could be diagnosed early and treated promptly, such as the arterial hypertension and infections.[13] Different, more recent studies show that this continues to be the reality of most fetal deaths in the country.[5,14,15]

In our study, most mothers were aged between 20 and 35 years (78%), as found in studies carried out in Cuiabá and in the state of Ceará [16,17.] However, this data differs from other studies that point to a higher gestational risk at the extremes of maternal age.[18, 19]

It is known that schooling has an impact on health care. According to the study based on the Birth in Brazil Survey, having less

Variable	No (n=41)	%
Related to reproductive planning		
planned pregnancy	14	34.1
related to prenatal		
Prenatal consultations >/= 6	35	85.3
exam requests	38	92.7
Unavailability of exam results performed	4	9.7
Lack of adherence to exams/treatments	19	46.3
Absence of justification of drug prescription	3	7.3
Registration of vaccination schedule up to date or completed	30	73.2
Referrals to high-risk prenatal care	7	17.1
Right to companion		
Companion participation record during pregnancy or childbirth	13	31.7
Integration of the multidisciplinary and interprofessional team		
Referral record for other professional categories (besides nursing and medicine)	14	34.1
Health education		
Registration of collective health education practices	1	2.4
Number of women who received home visits during pregnancy	21	51.2
Related to maternity care		
BCF auscultation record at the first ACCR call	3	7.3
Registry of rapid tests on admission	23	56.1
Fetal death/inaudible BCF with 6 hours or more of in-hospital	20	48.8
Related to home visit after death		
Complaints related to maternity care	21	51.2
Complaints related to prenatal care	1	2.4
No complaints from health services	19	46.3
Refused home interview	two	4.9
Relationship between the interviewee and the stillborn mother	31	75.6
Link between the interviewee and the stillborn-father	3	7.3
Link between the interviewee and stillbirth- another family member	5	12.2

Table 2. Data from the stillbirth records related to the care of pregnancy and childbirth related to the death investigation process.

Variable	No	%
Death discussed in GT	30	73.2
Death discussed in commission	10	24.4
No information on the type of discussion	1	2.4
Summaries with reports of recommendations	two	4.9

Table 3. Instance of carrying out the investigation and availability of recommendations for fetal death surveillance.

schooling and not having a partner impacted the coverage of prenatal care. Among the women who had in-hospital stillbirths in this study, elementary school was the most prevalent level of education (51.2%). With regard to marital status, less than half (41.5%) had partners. It is worth mentioning that having a stable marital relationship and being accompanied at the time of admission were considered protective factors for fetal death in a study carried out in RJ [20].

The vast majority of women (82.9%) declared themselves to be non-white, and this finding corroborates a nationwide study, which evaluated the influence of race/color on inequities in prenatal care and childbirth, showed that skin color preta is associated with higher levels of illness and death from preventable causes. Black puerperal women were at greater risk of having inadequate prenatal care, absence of a companion, lack of connection to the maternity hospital and greater chance of pilgrimage to obtain a hospital vacancy at the time of delivery [21].

The literature points out the etiology of stillbirth as multifactorial, mentioning distal (socioeconomic), intermediate (assistance) and proximal (biological) determining factors as associated factors [22]. In view of this, it is worth analyzing other relevant variables, such as obstetric history and birth data. In this study, more than half of the women (75.6%) had previous pregnancies.

Regarding reproductive risk, different studies point to a relationship between previous stillbirth and increased risk of a new occurrence [17,23]. In this study, there was no record of previous stillbirth cases, although in 21.95% of the records this information was ignored. Multiparity is also considered by the literature as a relevant determinant of stillbirth. In this study, more than half of the women (53.6%) had had at least two previous pregnancies [24,25].

Despite the fetal weight cutoff being greater than or equal to 2,500g in our study, 12.2% of deliveries were premature. Prematurity has been associated with stillbirth in other studies, since the causes of early birth can also compromise fetal well-being [17,25].

There is a relationship between prematurity and reduced number of prenatal consultations. Having 6 or 7 consultations reduces the chances of prematurity by 74% [26]. The literature states that 14% of stillbirths occur due to prolonged pregnancy. Here, 12.2% of stillbirths with a gestational age of 41 weeks or more were obtained [27].

Pregnancy was planned in only 34.1% of cases in this group of puerperal women. In the Birth in Brazil Survey, it was identified that women who did not want to have a pregnancy had a lower number of prenatal consultations and late onset of the same, when compared to the others. Therefore, reproductive planning can guarantee women the right to decide when and whether they want to become pregnant and, consequently, have the opportunity for better maternal and fetal outcomes [28].

Although socioeconomic, biological and reproductive factors have an impact on the occurrence of stillbirths, it is known that the greatest opportunity to prevent these deaths lies in the quality of prenatal and childbirth care 29.

Prenatal care is essential to ensure the health of the pregnant woman and fetus. However, in this study, 14.7% of pregnant women did not perform the minimum number of six consultations recommended by the Ministry of Health. Data from the survey showed that a quarter of pregnant women did not have this minimum number of consultations, despite this service having almost universal coverage in the country [28].

Prenatal care in Brazil is characterized by high coverage (98.7%) although the

minimum total number of recommended consultations is lower (73.1%). It is still a care performed, mostly, by medical professionals (75.6%), in basic units (89.6%) and carries as the major challenges, the qualification of care and the performance of all recommended procedures [28].

Another study found that the reasons for the lack of adherence to prenatal care were low family income and low schooling, difficulty in accessing consultations, poor quality of health care and lack of social support. In this study, 46.3% of the pregnant women showed a lack of adherence to exams/ treatments, which may have similar reasons to those mentioned above, however, this fact requires further exploration by the death investigation service [30].

An important care that can also impact both on adherence to prenatal care and on the quality of childbirth care is the participation of the companion. In this study, only 31.7% of the investigation files contained reports of the presence of a companion. Another study carried out in Rio de Janeiro described the presence of a companion as a distal factor of psychosocial support, which is related to stillbirth. The presence of a companion was associated with a protective factor against still birth [31].

Prenatal and childbirth care for pregnant women must have a multidisciplinary team composed of doctors, nurses, social workers, nutritionists, psychologists, dentists, physiotherapists, among others. However, in this study, two thirds of the women did not have multidisciplinary follow-up, as recommended, and the lack of compliance with this care interferes with its quality. Teamwork must be qualified and follow a humanistic perspective through comprehensive care [32].

The basis of health promotion and disease prevention care in pregnant women is Health Education. Health education is part of the care process and is present in individual guidelines, collective educational practices and home visits. In this study, only 51.2% of the mothers of stillbirths received home visits from health professionals during their pregnancies. This strategic visit is part of prenatal care in the SUS and aims at disease prevention and health promotion through guidance, clarification, follow-up and referrals.

Regarding group educational activities, only 2.4% of women participated. This low percentage of educational activities reveals the proportion of missed opportunities since pregnant women represent a public that is more sensitive to health education actions and is a way of qualifying prenatal care [33].

The first care of the pregnant woman in the public maternity of the MRJ occurs through the reception and risk classification, as part of the initiative of the Cegonha Carioca Program. However, the registration of the performance of the BCF auscultation exam by this team occurred in only 7.3%. The absence of this care can delay the identification of fetal risk situations, such as the fetal distress, for example, and consequent fetal death. The purpose of intrapartum fetal monitoring is to diagnose possible situations of fetal distress. In cases of fetal distress diagnosis, it is important to promote rapid interventions to avoid central nervous system injuries and even fetal death [34].

Care in the maternity ward included a record of the effectiveness of rapid tests for HIV and syphilis in 56.1%. It is worth mentioning that rapid tests were instituted by Ordinance Number 2104 of 2002 and considers, among others, that prophylactic interventions performed only during childbirth and the puerperium can reduce the probability of vertical transmission of HIV by approximately 50 [34]. One hypothesis

is that the examination was performed and not reported in the medical evolution, even in these cases, there is a need for better qualification of this care by the teams of the maternity hospitals of the MRJ.

Pregnant women who had stillbirths were hospitalized with live fetuses in utero, and almost half (48.8%) of the deaths occurred more than six hours after admission. This can translate into a sufficient period for timely diagnosis and effective treatment of the causes of this stillbirth and its preventability. A study that investigated perinatal deaths identified that 71.4% of fetal deaths occurred after hospitalization, which is an important parameter to assess hospital care [36].

In this study, 92.7% of the cases occurred in the public health network of the MRJ. having as main cause thehypoxia/anoxia (68.3%) and cesarean section as a form of delivery in just over half of the cases (58.3%). In Brazil, most fetal deaths result from pathologies of the perinatal period, such as intrauterine hypoxia and asphyxia at birth. A study carried out in Pernambuco also showed the latter as one of the predominant causes of stillbirth. The high percentage of asphyxia/ hypoxia, also found in other studies carried out in Recife and São Paulo, demonstrate problems in the quality of care provided to women during labor and delivery [3,5,37,38].

The diagnosis of stillbirth alone does not constitute an indication for cesarean section. However, there was a high number of cesarean sections in the women who made up this sample. It is worth mentioning that cesarean section in general, without adequate obstetric indication, can increase the risks of maternal morbidity and mortality, in addition to unnecessary expenditure of health resources [40].

The care of the health team in the face of the situation of stillbirth must go beyond the clinical aspects, being important to facilitate the mourning of the woman and the family. Thus, offering the woman and the family to be with the stillborn child is part of care. When reading the death investigation forms, it was possible to identify only one spontaneous report of this care offered by the health team. This finding may mean that the team that takes care of women with a stillbirth is not properly prepared to deal with this situation [41].

Regarding the surveillance of stillbirth cases in this study, about half of the women interviewed (51.2%) had complaints related to the care received in the maternity ward, 75.6% of the interviewees were the mothers of the stillbirths and 73.2 % of discussions of deaths occurred in GT. However, in the records analyzed, only 4.9% had recommendations for the service that assisted the woman. The absence of recommendations for more than 95% of cases points to the need to qualify the death investigation process.

A study carried out in 2020 on the role of the Infant and Fetal Mortality Committees in the face of the actions implemented to overcome the challenges and determinants that contribute to a greater number of deaths in these populations, concluded with regard to the death surveillance process that effective action is needed both in technical and managerial issues and the need for support from the authorities in their actions and recommendations [42].

CONCLUSION

The high percentage of preventable stillbirths demonstrates the need for qualified care. The fetal death investigation service pointed out problems, but did not make the appropriate recommendations for managers and professionals. Although the deaths occurred in the hospital environment, it is known that the prenatal service is directly associated with the prevention of morbidities and mortality.

REFERENCES

1. Blencowe H. et al. National, regional, andworldwideestimates of stillbirth rates in 2015, withtrendsfrom 2000: a systematicanalysis. www.thelancet.com/lancetgh Vol 4 February 2016. Disponível em: https://www.thelancet.com/action/showPdf?pii=S2214-109X%2815%2900275-2.

2. Barros PS, Aquino ÉC, Souza MR. Mortalidade fetal e os desafios para a atenção à saúde da mulher no Brasil. RevSaude Publica.2019; 53: 12. Publicado em 31 de janeiro de 2019. doi: 10.11606 / S1518-8787.2019053000714. Disponível em:https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6390672/.

3. The Lancet Endingpreventablestillbirths. Series 2016: http://www.thelancet.com/ series/ending-preventablestillbirths.

4. Brasil. Ministério da Saúde. Secretaria de Vigilância em Saúde. Departamento de Vigilância de Doenças e Agravos não Transmissíveis e Promoção da Saúde. Saúde Brasil 2018 uma análise de situação de saúde e das doenças e agravos crônicos: desafios e perspectivas / Ministério da Saúde, Secretaria de Vigilância em Saúde, Departamento de Vigilância de Doenças e Agravos Não Transmissíveis e Promoção da Saúde – Brasília: Ministério da Saúde, 2019. 424 p.: il. Disponível em: https://bvsms.saude.gov.br/bvs/publicacoes/saude_brasil_2018_analise_situacao_saude_doencas_agravos_cronicos_desafios_perspectivas.pdf.

5. Rêgo MGS. Et al. Óbitos perinatais evitáveis por intervenções do Sistema Único de Saúde do Brasil. Rev Gaúcha Enferm. 2018;39:e2017-0084. Disponível em: https://www.scielo.br/j/rgenf/a/j6mTfFftN3h5qRdnjdXBBJR/?format=pdf&lang=pt.

6. Cursino TP, Benincasa M. Parto domiciliar planejado no Brasil: uma revisão sistemática nacional. Ciência & Saúde Coletiva, 25(4):1433-1443, 2020. Disponível em: https://www.scielosp.org/pdf/csc/2020.v25n4/1433-1444/pt.

7. Brasil. Ministério da Saúde. Portaria n° 72 de 11 de janeiro de 2010. Estabelece que a vigilância do óbito infantil e fetal é obrigatória nos serviços de saúde (públicos e privados) que integram o Sistema Único de Saúde (SUS). Disponível em: https://bvsms.saude.gov.br/bvs/saudelegis/gm/2010/prt0072_11_01_2010.html

8. Brasil. Ministério da Saúde. Portaria n° 1459 de 24 de junho de 2011. Institui, no âmbito do Sistema Único de Saúde - SUS - a Rede Cegonha. Disponível em: https://bvsms.saude.gov.br/bvs/saudelegis/gm/2011/prt1459_24_06_2011.html.

9. Fonseca SC et al. Evitabilidade de óbitos fetais: reflexões sobre a Lista Brasileira de Causas de Mortes Evitáveis por intervenção do Sistema Único de Saúde. Cad. Saúde Pública 2021; 37(7):e00265920. Disponível em: https://www.scielosp.org/pdf/csp/2021.v37n7/e00265920/pt.

10. Brasil. Ministério da Saúde. Secretaria de Atenção à Saúde. Departamento de Atenção Básica. Atenção ao pré-natal de baixo risco [recurso eletrônico] / Ministério da Saúde. Secretaria de Atenção à Saúde. Departamento de Atenção Básica. – 1. ed. rev. –Brasília: Editora do Ministério da Saúde, 2013. 318 p.: il. – (Cadernos de Atenção Básica, n° 32). Disponível em: https://bvsms.saude.gov.br/bvs/publicacoes/atencao_pre_natal_baixo_risco.pdf

11. Brasil. Ministério da Saúde. Secretaria de Atenção à Saúde. Manual de acolhimento e classificação de risco em obstetrícia / Ministério da Saúde, Secretaria de Atenção à Saúde, Departamento de Ações Programáticas Estratégicas, Departamento de Atenção Hospitalar e Urgência. – Brasília: Ministério da Saúde, 2017. 64 p.: il. Disponível em: https://bvsms.saude.gov.br/bvs/publicacoes/manual_acolhimento_classificacao_risco_obstetricia_2017.pdf

12. Brasil. Ministério da Saúde. Secretaria de Vigilância em Saúde. Secretaria de Atenção à Saúde. Manual de vigilância do óbito infantil e fetal e do Comitê de Prevenção do Óbito Infantil e Fetal / Ministério da Saúde, Secretaria de Vigilância em Saúde, Secretaria de Atenção à Saúde. – 2. ed. – Brasília: Ministério da Saúde, 2009. 96 p.: il. – (Série A. Normas e Manuais Técnicos). Disponível: https://bvsms.saude.gov.br/bvs/publicacoes/manual_obito_infantil_fetal_2ed.pdf.

13. Aquino MMA. Causas e fatores associados ao óbito fetal. Campinas. S.P. [s.n]. 1997. Disponível em: https://docs.bvsalud.org/biblioref/ses-sp/1997/ses-15821/ses-15821-023.pdf.

14. Giraldi LM. Et al. Óbito fetal: fatores obstétricos, placentários e necroscópicos fetais. J. Bras. Patol. Med. Lab. 55 (1). Jan-Feb 2019. Disponível em: https://www.scielo.br/j/jbpml/a/7xtrSVLLXVSHvf83BVt9Jbj/?lang=pt

15. Carvalho PAM & Lira SM. Perfil de Óbito Fetal que deram Entreda no Hospital Regional de Cajazeiras-PB entre 2011-2015. Revista Interdisciplinar em Saúde, Cajazeiras, 5 (6): 1403-1423, out./dez. 2018, ISSN: 2358-7490. Disponível em: https://www.interdisciplinaremsaude.com.br/Volume_22/Trabalho_05.pdf.

16. Filho FPS & Maia MCG. Determinantes de natimortalidade em um serviço municipal de assistência hospitalar. RBPS 2004; 17 (4): 187-192. Disponível em: file:///C:/Users/55219/Downloads/698-6418-1-PB.pdf

17. Lima JC; Junior GJO & Takano OA. Fatores associados à ocorrência de óbitos fetais em Cuiabá, Mato Grosso. Rev. Bras. Saúde Matern. Infant., Recife, 16 (3): 363-371 jul. / set., 2016. Disponível em: https://www.scielo.br/j/rbsmi/a/fGXsqf5kPk7Jn7CZqfxZHfK/?format=pdf&lang=pt.

18. Carvalho TS; Pellanda LC & Doyle P. Stillbirthprevalence in Brazil: anexploration of regional diferences. J Pediatr (Rio J). 2018; 94 (2): 200-206. Disponível em: https://www.scielo.br/j/jped/a/F9y6DRRvtBkT3gD4FvMrCCB/?format=pdf&lang=pt.

19. M Aminu. Et al. Causes of andfactorsassociatedwithstillbirth in low-and Middle-income countries: a systematicliterature review. BJOG 2014; 121 (Suppl.4): 141-153. Disponível em: https://obgyn.onlinelibrary.wiley.com/doi/epdf/10.1111/1471-0528.12995.

20. Fonseca SC & Coutinho ESF. Fatores de risco para mortalidade fetal em uma maternidade do Sistema Único de Saúde, Rio de Janeiro, Brasil: estudo caso-controle. Cad. Saúde Pública, Rio de Janeiro, 26(2):240-252, fev, 2010. Disponível em: https://www.scielo.br/j/csp/a/8f7V8mq3nCpGRkz6Ld6Jxhd/?format=pdf&lang=pt.

21. Leal MC et al. A cor da dor: iniquidades raciais na atenção pré-natal e ao parto no Brasil. Cad. Saúde Pública 2017; 33 Sup 1:e00078816. Disponível em: http://cadernos.ensp.fiocruz.br/static//arquivo/1678-4464-csp-33-s1-e00078816.pdf.

22. Silva VC; Pires, RCR & Cantanhede AM. Tendências recentes dos óbitos fetais por malformações congênitas: um estudo descritivo. Reciis – RevEletronComunInfInov Saúde. 2019 out.-dez.;13(4):863-76 | [www.reciis.icict.fiocruz.br] e-ISSN 1981-6278. Disponível em: https://www.arca.fiocruz.br/bitstream/icict/38753/2/16.pdf.

23. Fonseca SC & Coutinho ESF. Fatores de risco para mortalidade fetal em uma maternidade do Sistema Único de Saúde, Rio de Janeiro, Brasil: estudo caso-controle. Cad. Saúde Pública, Rio de Janeiro, 26(2):240-252, fev, 2010. Disponível em: https://www.scielo.br/j/csp/a/8f7V8mq3nCpGRkz6Ld6Jxhd/?lang=pt&format=pdf.

24. Gondwe MJ et al. Abordagens, facilitadores, barreiras e resultados da implementação de auditorias de natimortos e mortes neonatais em centros de saúde em LMICs: uma revisão sistemática. BMJ Open Quality 2021;10:e001266. doi:10.1136/bmjoq-2020-001266. Disponível em: https://bmjopenquality.bmj.com/content/bmjqir/10/1/e001266.full.pdf.

25. Oliveira EFV; Gama SGN & Silva CMFP. Gravidez na adolescência e outros fatores de risco para mortalidade fetal e infantil no Município do Rio de Janeiro, Brasil. Cad. Saúde Pública, Rio de Janeiro, 26(3):567-578, mar, 2010. Disponível em: https://www.scielo.br/j/csp/a/Vv84NRD6D9XyLX5bnsK4xvt/?format=pdf&lang=pt

26. Baptista JPR. Et al. Relação entre o número de consultas do pré-natal e desfechos adversos perinatais em pacientes de baixo risco. Archives of Health, Curitiba, v.2, n.5, p.1441-1454, jul./aug., 2021ISSN 2675-4711. Disponível em: https://latinamericanpublicacoes.com.br/ojs/index.php/ah/article/view/678/642.

27. Lawn JE et al. Stillbirths: rates, riskfactors, andaccelerationtowards 2030. Lancet. 2016 Feb 6;387(10018):587-603. doi: 10.1016/S0140-6736(15)00837-5. Epub 2016 Jan 19. PMID: 26794078. Disponível em:https://pubmed.ncbi.nlm.nih.gov/26794078/.

28. Viellas EF et al. Assistência pré-natal no Brasil. Cad. Saúde Pública, Rio de Janeiro, 30 Sup:S85-S100, 2014. Disponível em: https://www.scielo.br/j/csp/a/CGMbDPr4FL5qYQCpPKSVQpC/?format=pdf&lang=pt

29. Kale PL. Et al. Tendência da mortalidade fetal e infantil segundo evitabilidade das causas de morte e escolaridade materna. REV BRAS EPIDEMIOL 2021; 24: E210008. SUPL.1. Disponível em: https://scielosp.org/pdf/rbepid/2021.v24suppl1/e210008/pt.

30. Rocha IMSR; Barbosa VSS & Lima ALS. Fatores que influenciam a não adesão ao programa de pré-natal. Revista Científica da Enfermagem. v. 11, n. 35 (2021). Disponível em: https://www.recien.com.br/index.php/Recien/article/view/239.

31. Tomasi et al. Do pré-natal ao parto: um estudo transversal sobre a influência do acompanhante nas boas práticas obstétricas no Sistema Único de Saúde em Santa Catarina, 2019. Epidemiol. Serv. Saude, Brasília, 30(1):e2020383, 2021. Disponível em: https://scielosp.org/pdf/ress/2021.v30n1/e2020383/pt

32. Guerreiro EM et al. O cuidado pré-natal na atenção básica de saúde sob o olhar de gestantes e enfermeiros. Revista Mineira de Enfermagem. Vol.16.3. 2011. Disponível em: http://reme.org.br/artigo/detalhes/533.

33. Araújo MLA et al. Educação em saúde – estratégia de cuidado integral e multiprofissional para gestantes. Revista da ABENUMBER 11(2)8-13. 2011. Disponível em: http://revodonto.bvsalud.org/pdf/abeno/v11n2/a02v11n2.pdf.

34. Silveira SK, Trapani Júnior A. Monitorização fetal intraparto. FEMINA 2020;48(1): 59-64. Disponível em: https://docs.bvsalud.org/biblioref/2020/03/1052446/femina-2019-481-59-64.pdf.

35. Brasil. Ministério da Saúde. Portaria nº 2104, de 19 de novembro de 2002. Instituir, no âmbito do Sistema Único de Saúde -- SUS --, o Projeto Nascer-Maternidades. Disponível em: https://bvsms.saude.gov.br/bvs/saudelegis/gm/2002/prt2104_19_11_2002.html.

36. De Lorenzi, D. R. S. et al. A natimortalidade como indicador de saúde perinatal. Cad. Saúde Pública, Rio de Janeiro, 17(1):141-146, jan-fev, 2001. Disponível em: https://www.scielo.br/j/csp/a/PhWpnhbFz9jpxtmk5fd9zZP/?format=pdf&lang=pt.

37. Pereira RC et al. Perfil epidemiológico sobre mortalidade perinatal e evitabilidade epidemiological. Revenferm UFPE on line., Recife, 10(5):1763-72, maio., 2016. Disponível em: file:///C:/Users/55219/Downloads/13555-34621-1-PB%20(3).pdf

38. Silva LILP. Relação entre causas obstétricas diretas e mortalidade fetal no Brasil. Brazilian Journal of Development, Curitiba, v.7, n.7, p. 65616-65631 jul. 2021. Disponível em: file:///C:/Users/55219/Downloads/32342-82660-1-PB.pdf.

39. Marques LJP et al. Contribuições da investigação dos óbitos fetais para melhoria da definição da causa básica do óbito no Município de São Paulo, Brasil. Cad. Saúde Pública 2021; 37(2):e00079120. Disponível em: https://www.scielo.br/j/csp/a/S5QvWrPKSdnRFrJrk4pVHRp/?format=pdf&lang=pt

40. Lansky S. Et al. Pesquisa Nascer no Brasil: perfil da mortalidade neonatal e avaliação da assistência à gestante e ao recém-nascido. Cad. Saúde Pública, Rio de Janeiro, 30 Sup:S192-S207, 2014. Disponível em: https://scielosp.org/pdf/csp/2014.v30suppl1/S192-S207/pt.

41. Muza JC. Quando a morte visita a maternidade: atenção psicológica durante a perda perinatal. Revista Psicologia: Teoria e Prática, 15(3), 34-48. São Paulo, SP, set.-dez. 2013. 35 ISSN 1516-3687 (impresso), ISSN 1980-6906 (on-line). Disponível em: http://pepsic.bvsalud.org/pdf/ptp/v15n3/03.pdf.

42. Teixeira MRC; Magalhães BC &Albuquerque GA. Comitês de Mortalidade Infantil e Fetal:importância, finalidade e funcionamento. Eliseu. RG&PP, 10(2): 243-259. 2020. Disponível em: https://www.revistas.usp.br/rgpp/article/view/180890/172192.