

The Consequences of Violence During Pregnancy for Both Fetus and Newborn: Systematic Review

Implicações para o Feto e Recém-Nascido da Violência Durante a Gestação: Revisão Sistemática

Implicaciones de la Violencia para Fetos y Recién Nacidos Durante el Embarazo: Revisión Sistemática

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ABSTRACT

Objective: The study's goal has been to identify studies addressing the effects of violence against women during pregnancy to both the fetus and newborn. **Methods:** The survey was performed in both *MEDLINE* and *LILACS* databases. There were included analytical studies, published in English, Spanish and Portuguese. **Results:** There were included 27 studies. According to the analyzed data, violence during pregnancy is a risk to the intrauterine growth and may cause the following issues: intrauterine growth restriction; being born small according to the gestational age; and higher plasma levels of glutamate, GABA and cortisol. It was consensus among the studies that there is a risk of fetal and neonatal death among women who experienced the phenomenon of violence during pregnancy. **Conclusions:** Violence during pregnancy is a very important issue in the public health matter. The findings emphasize the significance of initiating the prenatal care as soon as possible, since it is an important stepping-stone to tracking down the occurrence of violence.

Descriptors: Violence Against Woman, Domestic Violence, Pregnancy, Newborn, Setus

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RESUMO

Objetivo: Identificar estudos sobre os efeitos para o feto e recém-nascido da violência contra a mulher durante a gestação. **Métodos:** Revisão realizada nas bases MEDLINE e LILACS. Foram incluídos estudos epidemiológicos analíticos, publicados em inglês, espanhol e português. **Resultados:** Foram incluídos 27 estudos. Os dados apontam na direção de que a violência na gravidez é risco para a ocorrência de restrição no crescimento intrauterino, nascer pequeno para idade gestacional e maiores níveis plasmáticos de Glutamato, GABA e cortisol. Foi consenso entre os estudos o risco de óbito fetal e neonatal entre as mulheres que vivenciaram o fenômeno da violência no período gestacional. **Conclusão:** A violência durante a gestação constitui um agravo relevante na saúde pública. Os achados destacam a importância da realização e início precoce do pré-natal, pois constitui um espaço importante no rastreamento das violências.

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RESUMEN

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INTRODUCTION

Violence against women is recognized by the World Health Organization (WHO) as a serious public health issue, and also a violation of human rights. This event has as its main perpetrator the intimate partner. In the world, one-third of women have already been victims of physical and/or sexual violence practiced by their partner. In some regions, the percentage may reach 38%.¹

It is worth mentioning that in situations where violence is practiced by the intimate partner, the victims experience a violent relationship, in which abuse often occurs of different types: physical aggression, sexual coercion, psychological abuse and controlling behaviors. Additionally, abusive partners may limit tend to restrict women's behavior in reproductive and sexual health care.¹

This fact is worrying, especially, when the woman is in the pregnancy period, considering the impact not only for the woman but also for the binomial. A cross-sectional study carried out with puerperal mothers in a public maternity hospital in São Paulo found that approximately 35% of the participants had been victims of some kind of violence during pregnancy.² In another

study, approximately 16.0% of the pregnant women showed psychological victimization, 6.0% suffered physical violence and a lower percentage (1.3%) reported sexual violence during pregnancy.³

It is important to mention that exposure to violence during pregnancy has been associated in the literature with a number of adverse maternal and fetal outcomes,⁴ which may have serious consequences for the woman's health, fetus and also for the newborn, such as premature childbirth labor⁵ and low birth weight (LBW).⁶

Given this scenario, considering that exposure to violence can lead to innumerable complications and that it is an aggravation not valued by health services, being often invisible and silenced, as well as considering that the attention of health professionals to the existence of violence during pregnancy is of great importance for the maintenance of women's health in the pregnancy cycle, the present study aimed to identify studies addressing the effects of violence against women during pregnancy to both the fetus and newborn.

METHODS

This is a systematic review. In July 2016, a bibliographic survey was carried out in the LILACS (*Literatura Latino-Americana e do Caribe em Ciências da Saúde*) [Latin American and Caribbean Literature in Health Sciences] and MEDLINE databases, using the following terms: "Spouse abuse AND Pregnancy, Spouse abuse And Newborn, Spouse abuse And Fetus, Domestic violence AND Pregnancy, Domestic violence AND Newborn, Domestic violence AND Fetus, Violence against woman AND Pregnancy, Violence against woman AND Newborn, Pregnancy, Battered women AND Newborn, Battered women AND Fetus". In order to avoid duplication of studies, the articles found in the home base were ordered by title and author, and those that appeared more than once were excluded.

The following inclusion criteria were adopted: epidemiological articles of the analytical type, published in English, Spanish and Portuguese, published between 2000 and 2015. Review criteria, theses, dissertations, case reports, and chapters of books.

The literature review was performed by two researchers (Freitas PA and Gabira FG), who independently selected the articles from the titles, abstracts and full texts. The divergences were resolved by consensus and in the impossibility of a third researcher (Leite FMC).

There were found 3,414 articles in MEDLINE and 248 articles in LILACS, with the combination of the different descriptors mentioned above. After eliminating 1,752 duplicate articles, 1,910 studies were selected for reading the title. Of these, 1,743 articles were excluded after the analysis of the titles. Of the 167 eligible to read the abstracts, 113 were excluded after analyzing the abstract for the following reasons: unrelated outcome, thinking study, qualitative

study, and a systematic literature review. Thus, 54 articles were selected for reading in full. Of the 54 eligible, 27 were excluded because the outcome was not consistent with the guiding question: "What is the effect of violence against women during pregnancy on both the fetus and newborn?". Therefore, 27 articles comprised the present systematic review. **Figure 1** shows the flowchart of the steps of the study selection process, and also the studies selected for analysis according to the PRISMA protocol.⁷

The following information was collected and recorded with regards to all articles: author/year, study type, sample, age group, country where the study was carried out, study place and outcome.

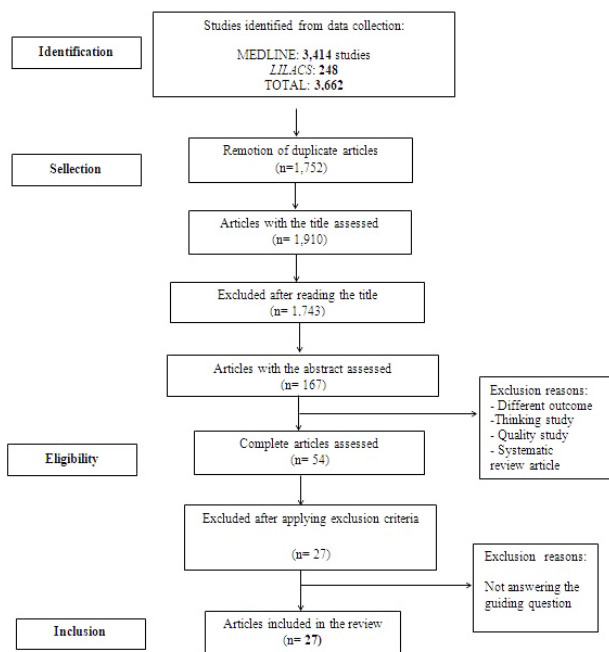


Figure 1 – PRISMA flowchart used for the process of identification and selection of articles for systematic review of the effects of violence against women during pregnancy to both the fetus and newborn.

RESULTS AND DISCUSSION

Table 1 shows the 27 eligible articles in this review. It is observed that the studies were published in the period from 2001 to 2014,^{4,6,8-31} where the cross-sectional studies^{9-14,17,21,22,25,30-31} and case-control^{5,8, 15,18,23,26,27} were predominant (70.4%). The population sample studied varied from 131⁶ to 8,961.²⁵ Regarding the population type, there were women in reproductive age,^{9,12-14,21} pregnant women,^{4,6,11,16,19,20,22,24,26,28-31} puerperal women,^{10,17} and studies whose population was neonates.^{4,8,15,23}

It is interesting to note that of the 27 eligible articles, 8 studies were carried out in Brazil,^{10,15,16,18,19,22,25,30} where five were in the Southeast region^{15,16,18,25,30} and one in the Northeast region,¹⁰ another one in the South region¹⁹ and one is a national study.²² Concerning the study place, practically all (92.6%) were performed in health institutions.

Table 1 – Studies addressing the effects of violence during pregnancy to both the fetus and newborn, which were identified by author/year, study type, sample, age group, country and study place.

| Author/Year | Study type | Sample | Age group | Country | Study place |
|--|-----------------|--|--|--------------------------------------|--|
| Arcos et al., 2001 ⁶ | Cohort | 131 pregnant women | Average age 24 years old | Valdivia, Chile | Health institution |
| Valladares et al., 2002 ⁵ | Case-control | 101 newborns weighing ≤ 2,500 g (cases) and 202 controls | ----- | Nicaragua | Health institution |
| Núñez-Rivas et al., 2003 ⁹ | Cross-sectional | 118 women | ----- | Costa Rica | Health institution |
| Menezes et al., 2003 ¹² | Cross-sectional | 420 puerperal women | 13 to 19 and more than 20 years old | Recife, Brazil | Health institution |
| Negggers et al., 2004 ¹¹ | Cross-sectional | 3,103 pregnant women | Average age 22 years old | United States of America | Health institution |
| Ahmed et al., 2006 ¹² | Cross-sectional | 2,199 women | Average age 27 years old | India | Population survey |
| Yang et al., 2006 ¹³ | Cross-sectional | 1,143 women | ----- | Taiwan | Health institution |
| Peña et al., 2007 ¹⁴ | Cross-sectional | 288 women | Average age 23 years old | Mexico | Health institution |
| Schoeps et al., 2007 ¹⁵ | Case-Control | 146 neonatal/early deaths (cases) and 313 controls | ----- | São Paulo, Brazil | Home and health institution |
| Audi et al., 2008 ¹⁶ | Cohort | 1,379 pregnant women | More or equal to 19 years old | Campinas, Brazil | Health institution |
| Rodrigues et al., 2008 ¹⁷ | Cross-sectional | 2,660 puerperal women with live newborns | ----- | Porto, Portugal | Health institution |
| Fonseca et al., 2010 ¹⁸ | Control case | 134 Fetal deaths ≥ 22 weeks and/or weighing ≥ 500 g (cases), Controls - live births in the period (n= 300) | ----- | Rio de Janeiro, Brazil | Health institution |
| Nunes et al., 2010 ¹⁹ | Cohort | 652 pregnant women between 16-36 weeks | Average age of 24.7 years old | Brazilian South region | Health institution and telephone contact |
| Meuleners et al., 2011 ²⁰ | Cohort | 4,212 Pregnant women | ----- | Australia | Health institution |
| Urquía et al., 2011 ²¹ | Cross-sectional | 6,421 women | More than or equal to 15 years old | Canada | Health institution |
| Miranda et al., 2012 ²² | Cross-sectional | 2,400 pregnant women | Average age of 20.2 years old | Brasil | Health institution |
| Zhang et al., 2013 ²³ | Case-control | 64 babies of mothers who suffered violence and 117 controls. | Average age 28 years old | China | Health institution |
| Shneyderman et al., 2013 ²⁴ | Clinical Trial | 1,044 high risk pregnant women | 18 years old and over | Washington, United States of America | Health institution |
| Vielas et al., 2013 ²⁵ | Cross-sectional | 8,961 mothers | Under 19 and 20 to 34 years old | Rio de Janeiro, Brazil | Health institution |
| Sanchez et al., 2013 ²⁶ | Case-control | 479 women with single gestations of preterm birth (<37 weeks gestation) and 480 controls | Average age 28 years old | Lima, Peru | Health institution |
| Alhusen et al., 2014 ²⁷ | Case-Control | 166 mothers and their children | Age equal to or more than 16 years old | Baltimore, United States of America | Health institution |
| Nongrum et al., 2014 ²⁸ | Cohort | 132 pregnant women | Average age of 27 years old | India | Health institution |
| Alhusen et al., 2014 ²⁹ | Clinical Trial | 239 pregnant women | Average age 26 years old | United States of America | Health institution |
| Koen et al., 2014 ⁴ | Cohort | 263 pregnant and newborns | 18 to 41 years old | South Africa | Health institution |
| Rodrigues et al., 2014 ³⁰ | Cross-sectional | 232 pregnant women | 15 to 49 years old | Ribeirão Preto, Brazil | Health institution |
| Aljijahan et al., 2014 ⁸ | Case-Control | 346 births with <37 weeks (cases); 589 controls | ----- | Ardabil, Iran | Health institution |
| Pool et al., 2014 ³¹ | Cross-sectional | 1,745 pregnant women | 15 to 49 years old | Gana, Africa | Population survey |

Intimate partner violence increases the odds of adverse neonatal outcome (OR = 5.34, 95% CI: 1.97-14.46).²⁷ A cohort study carried out in South Africa with pregnant women and newborns shows that exposure (p<0.001). On the other hand, sexual and psychological violence were not associated with this outcome.⁴ In this same direction, case-control studies were performed, conducted in Costa Rica,⁹ also showed an association between gestational violence and low birth weight (p<0.05).

In another study, now of the type controlled clinical trial conducted with high-risk pregnant women in Washington, USA, it was observed that battered women were about 2.5 times more likely to have a child with LBW, an increase of approximately six-fold in the infants birth of very low birth weight (<1,500 g).²⁴ These findings corroborate with other studies listed in this review.^{9,11,13,14,20,24,28,29} On the other hand, against these

results, three studies did not find an association between intimate partner violence and low birth weight ($p > 0.05$).^{10,16,30}

Another finding in this review was the studies that associated violence with small to gestational age (SGA). A study carried out in the United States shows a greater chance among victims of intimate partner violence to carrying out a newborn SGA (OR = 4.00; 95% CI: 1.58-9.97),²⁷ which was not found by research made in Canada ($p > 0.05$).²¹ A longitudinal study with pregnant women in Valdivia, Chile, reveals that there is about four times more risk (RR = 3.7, 95% CI: 1.77-7.93) for intrauterine growth restriction (IGR) among women who were victims of violence.⁶

The outcome of prematurity was associated with exposure to violence. The chance of having a preterm birth was higher among women who experienced spousal abuse (OR = 3.7, 95% CI: 1.1-11.8).⁵ Being a victim of physical violence during gestation increased by 1.6 (OR = 1.60, 95% CI: 1.00-2.57), or about four times less than 34 weeks (OR = 3.5, 95% CI: 1.1-11.6).²⁴ In the same sense, a study carried out in the Brazilian regions showed that household violence in pregnancy is associated with a higher chance of preterm birth (OR = 2.27, 95% CI: 1.23-4.18).²²

Similar to that described previously, a survey conducted in Peru indicates an increased chance of occurrence of prematurity among women who were victims of violence by about two times (OR = 2.08, 95% CI: 1.49-2.93) compared to those not victimized. Furthermore, this same study highlights that exposure to emotional violence may be associated with increased prematurity (OR = 1.7, 95% CI: 1.19-2.46), as well as chance may increase, reaching odds of 4.7 (95% CI: 2.55-8.63), when exposure is to both types of violence (physical and emotional).²⁶ Corroborating with these findings, research conducted in the United States,¹¹ Portugal¹⁷ and India²⁸ also highlight the existence of a relationship between gestational violence and prematurity. In contrast, two studies did not show this association ($p > 0.05$).^{10,16}

Exposure to violence has also been studied for Apgar score outcomes and plasma levels of glutamate, gamma-aminobutyric acid (GABA) and cortisol. In the case of the erase index, the studies do not show a significant association ($p > 0.05$).^{10,30} The outcome of plasma levels of glutamate, GABA, and cortisol were significantly higher in the group of newborns. Moreover, mothers were victims of emotional and sexual violence when compared to the non-victimized group ($p < 0.05$).²³

In this systematic review, fetal mortality, associated with exposure to violence, was highlighted. Victims of gestational violence have a higher risk for fetal death (RR = 1.44, 95% CI: 1.07-1.93) when compared to those who did not experience violence.⁶ In addition to this finding, a study on the factors of risk for fetal mortality

in a maternity unit of the *Sistema Único de Saúde (SUS)* [Unified Health System] of Rio de Janeiro¹⁸ demonstrated that the presence of domestic violence during pregnancy increases the chance of fetal mortality (OR = 2.26, 95% CI: 1.11-4.59), similar to the other search.²⁰

Perinatal and neonatal deaths were also recorded. A study carried out in India found that pregnant women who suffered violence were about twice as likely to have perinatal mortality (OR = 2.53, 95% CI: 1.35-4.74) and neonatal mortality (OR = 2.31, 95% CI: 1.19-4.50).¹² Additionally, a case-control study conducted in *São Paulo*, Brazil, showed an increased chance of approximately three times (OR = 2.8, 95% CI: 1.2-6.7) of neonatal death.¹⁵ These findings are similar to those found in other studies, 10,25,31 where physical aggression during pregnancy increased the chance of neonatal death (OR = 2.43, 95% CI: 1.02-5.43)²⁵ and perinatal (OR = 2.32, 95% CI: 1.34-4.01),³¹ being able to reach a four-fold prevalence of dead neonates among victims of physical violence.¹

Table 2 – Synthesis of the effects of violence during pregnancy on the fetus and newborn that were found in this systematic review

| Title | Results |
|--|---|
| Impact of domestic violence on reproductive and neonatal health ⁶ | Violence in pregnancy increased risk for fetal death [RR = 1.44, 95% CI: 1.07-1.93] and IGR [RR = 3.7, 95% CI: 1.77-7.93]. |
| Physical partner abuse during pregnancy: a risk factor for low birth weight in Nicaragua ⁸ | LBW was associated with partner physical abuse even after adjustment for age, parity, smoking, and socioeconomic status (OR = 3.9, 95% CI: 1.7-9.3). |
| Physical, psychological, emotional, and sexual violence during pregnancy as a reproductive-risk predictor of low birthweight in Costa Rica ⁷ | Gestational violence increases the likelihood of having a newborn with LBW three times higher (95% CI: 1.39 to 8.10). |
| Domestic physical violence and pregnancy: results of a survey in the postpartum period ¹⁰ | There was no association between violence and prematurity, low birth weight, and Apgar score ($p > 0.05$). Prevalence of neonates was more than four times higher among victims of domestic physical violence ($p = 0.006$). |
| Effects of domestic violence on preterm birth and low birth weight ¹¹ | Physical abuse, after adjustment, was associated with prematurity [OR = 1.6, 95% CI: 1.1-2.3] and LBW [OR = 1.8, 95% CI: 1.3-2.5]. |
| Effects of domestic violence on perinatal and early-childhood mortality: evidence ¹² | Women who experienced gestational violence had a 2.53-fold higher risk (95% CI: 1.35-4.74) for perinatal mortality and 2.31 (95% CI: 1.19-4.50) times more neonatal mortality than births among mothers who had not experienced violence. |
| Physical abuse during pregnancy and risk of low-birthweight infants among aborigines in Taiwan ¹³ | Physical abuse with lesions during pregnancy is a risk factor for giving birth to a newborn with LBW (adjusted OR = 2.43, 95% CI: 1.06-5.55). |
| Relación entre la violencia familiar durante el embarazo y el riesgo de bajo peso en el recién nacido ¹⁴ | Family violence increases the risk of LBW in the newborn [OR = 1.69, 95% CI: 1.01-2.81]. |
| Risk factors for early neonatal mortality ¹⁵ | After adjustments, the gestational violence was associated with a higher risk of early neonatal mortality (OR = 2.8, 95% CI: 1.2-6.7) |
| Associação entre violência doméstica na gestação e peso ao nascer ou prematuridade ¹⁶ | No association between domestic violence perpetrated by the partner and LBW or prematurity was observed ($p > 0.05$) |
| Physical abuse during pregnancy and preterm delivery ¹⁷ | Violence is associated with preterm birth, even after controlling for age, marital status, schooling, income, parity, planned pregnancy, antenatal care, smoking, alcohol and illicit drugs use [OR = 3.14, 95% CI: 2.00-4.93]. |
| Fatores de risco para mortalidade fetal em uma maternidade do Sistema Único de Saúde, Rio de Janeiro, Brasil: estudo Caso-controle ¹⁸ | The presence of domestic violence during pregnancy presented a higher propensity to fetal mortality (OR = 2.26, 95% CI: 1.11-4.59, $p = 0.01$). |
| Fatores de risco para mortalidade fetal em uma maternidade do Sistema Único de Saúde, Rio de Janeiro, Brasil: estudo Caso-controle ¹⁹ | The presence of domestic violence during pregnancy showed a higher propensity to fetal mortality (OR = 2.26, 95% CI: 1.11-4.59, $p = 0.01$) |
| Maternal and fetal outcomes among pregnant women hospitalized due to interpersonal violence: A population based study in Western Australia, 2002-2008 ²⁰ | LBW, fetal distress, and fetal death among women who had been hospitalized for violence during pregnancy were twice as many (OR = 2.0) than women who had not been exposed to violence (95% CI: 1.50-2.76, $p < 0.001$). |
| Experiences of violence before and during pregnancy and adverse pregnancy outcomes: An analysis of the Canadian Maternity Experiences Survey ²¹ | There was no association between gestational violence and prematurity and SGA after adjustment ($p > 0.05$). |
| Prevalence and correlates of preterm labor among young parturient women attending public hospitals in Brazil ²² | Household violence during pregnancy was associated with a higher chance of preterm delivery (OR: 2.27; 95% CI: 1.23-4.18). |
| Correlation of domestic violence during pregnancy with plasma amino-acid neurotransmitter, cortisol levels and catechol-o-methyltransferase Val (158) Met polymorphism in neonates ²³ | Plasma levels of glutamate, GABA and cortisol were significantly higher in the group of newborns whose mothers were victims of domestic violence (emotional and sexual) than in the control group ($p < 0.05$) |

| | |
|---|---|
| Intimate partner violence during pregnancy: victim or perpetrator? Does it make a difference? ²⁴ | Physical violence increases the chance of LBW (OR = 2.5; 95% CI: 1.1-5.5), very low birth weight (<1,500 g) (OR: 5.7; 95% CI: 25.0); preterm delivery (OR = 1.60; 95% CI: 1.00-2.57) delivery at less than 34 weeks (OR = 3.5; 95% CI: 1.1-11.6). |
| Factors associated with physical aggression in pregnant women and adverse outcomes for the newborn? ²⁵ | Physical aggression among intimate partners during gestation increased the odds of neonatal death twice (OR = 2.43; 95% CI: 1.02-5.43). |
| Risk of Spontaneous Preterm Birth in Relation to Maternal Exposure to Intimate Partner Violence During Pregnancy in Peru? ²⁶ | Violence in pregnancy increases prematurity (OR = 2.08; 95% CI: 1.49-2.93). Emotional violence was associated with prematurity (OR = 1.71; 95% CI: 1.19-2.46). Emotional and physical violence at an OR = 4.7 times higher prematurity (95% CI: 2.55-8.63). |
| Intimate partner violence, substance use, and adverse neonatal outcomes among urban women? ²⁷ | Violence was associated with a higher adverse neonatal outcome (OR = 5.34; 95% CI: 1.97-14.46), and a 4-fold increase in having an SGA newborn (OR = 4.00; 95% CI: 1.58-9.97). |
| Domestic Violence as a Risk Factor for Maternal Depression and Neonatal Outcomes: A Hospital-Based Cohort Study? ²⁸ | Domestic violence was associated with prematurity (OR = 7.78; 95% CI: 1.49-40.50) and LBW (p=0.041). |
| Intimate partner violence during pregnancy and adverse neonatal outcomes in low-income women? ²⁹ | Violence during pregnancy was associated with a greater chance of having a newborn SGA (OR = 4.81; 95% CI: 1.86-12.47), and newborns of LBW (OR = 4.20; 95% CI: 1.46-12.12). |
| Intimate partner violence: associations with low infant birthweight in a South African birth cohort? ⁴ | Physical violence is associated with LBW (p=0.047) and low weight for the age (p=0.041). After adjustment, maternal violence remained associated with LBW (p=0.001). |
| Intimate Partner Violence Against Pregnant Women: Study About The Repercussions On The Obstetric And Neonatal Results? ³⁰ | There was no association between Apgar score and low birth weight with the occurrence of intimate partner violence during pregnancy (p>0.05). |
| Prevalence and risk factors associated with preterm birth in Ardabil, Iran? ³¹ | Higher chance of preterm birth among abused women (OR = 3.7; 95% CI: 1.1-11.8; p=0.024). |
| Physical violence during pregnancy and pregnancy outcomes in Ghana? ³¹ | Physical violence during pregnancy associated with perinatal mortality (OR = 2.32; 95% CI: 1.34-4.01) and neonatal mortality (OR = 1.86; 95% CI: 1.05-3.30). |

Although there is no agreement, among all the eligible studies in this systematic review of the impact of violence during pregnancy on the fetus and newborn, data from some studies show that pregnant women who are victims of pregnancy may have negative outcomes for the fetus and newborn - as prematurity,^{5,11,17,22,26,28} LBW,^{4,8,9,11,13,14,20,24,28,29} small newborns according to the gestational age (SGA),²⁷ IGR⁶ and death.^{6,10,12,15,18,20,25,31}

The association between prematurity and exposure to violence during pregnancy was not consensual in the scientific production eligible in this review. Nevertheless, it is worth remembering that preterm birth, that is, occurring before 37 weeks of gestation, 32 is an important grievance. According to the literature, in 2011, the prevalence of prematurity in Brazil reached 10%, higher than that of 2000 to 2010 (6-7%),³³ this fact is worrying when considering that prematurity contributes to the increase of costs with hospitalizations, in addition to increasing the occurrence of multiple-nature sequelae and the incidence of both neonatal morbidity and mortality.³⁴

Either IGR or SGA were associated with exposure to violence during gestation.^{6,26} Growth restriction is understood as the concept that, at birth, has a weight below the 10th percentile for gestational age. In general, this change comes from restricted intrauterine growth, which is growth dysfunction that does not allow the fetus to reach in body mass its genetic target.³⁵

In the present systematic review, the results of some studies point to an association between LBW and exposure to violence,^{4,8,9,11,13,14,20,24,28,29} but other three do not find a significant association.^{10,16,30} According to the Health Ministry, LBW is defined as a weight lower than 2,500 g at birth, being considered “very low birth weight” when the weight is less than 1,500 g and “extreme low weight”, if lower than 1,000 g.³⁶ It is worth noting that the literature points to low birth weight as a determinant factor in the quality of life of the newborn,³⁷ and has also been related to early neonatal mortality.³⁸

Mortality, whether fetal,^{6,18,20} or neonatal,^{10,12,15,25,31} was the outcome associated with exposure to violence in gestation, which did not show a disagreement between studies. In this context, it is valid to reflect on the experience of loss. The woman who experiences this event experiences many feelings such as frustration, disappointment, revolt, sadness, guilt, and crying.³⁹ This suffering is acute and can extend for many years, especially when the emotional experience of loss does not occur, then having a feeling of guilt and failure.⁴⁰

Given the aforementioned context, knowing the experiences of women in relation to situations of loss (fetal or neonatal) is indispensable for the health teams, since it is necessary to ensure that the woman and family enter into the process of mourning, minimizing psychological losses, of suffering experienced.⁴¹

Another finding in this review was the association of exposure to violence during gestation and plasma levels of glutamate, GABA and cortisol. Newborns of mothers who suffered emotional and sexual violence during pregnancy had higher levels of these substances than those whose mothers were not attacked.²³ Higher levels of these substances may suggest that fetuses of abused mothers experience greater exposure to stress during pregnancy,⁴²⁻⁴³ which could trigger neurobehavioral and cognitive development problems in the future,⁴⁴⁻⁴⁶ nonetheless, they are still unclear and require further investigation.²³

Considering the limitations of the present study, it is pointed out that a great part of the research was done in health institutions, and might not be representative of the general population. Also, about 44.0% of the studies are of a cross-sectional type, where exposure and outcome were collected in a single moment in time, it being difficult to establish a temporal relationship between events and to consider with certainty if the relationship between they are causal or not. Hence, it is recommended to carry out more longitudinal epidemiological studies, with samples representative of the general population, that can establish a causal relationship between violence in the pregnancy period and fetal and newborn health.

CONCLUSIONS

According to this systematic review, it is possible to conclude that although there is no concordance between the studies, the majority of them point to an association between violence during pregnancy and the effects of prematurity and low birth weight. Furthermore, it is important to highlight the consensus among the studies of the higher risk of fetal and neonatal death among women who experienced the phenomenon of gestational violence. Moreover, there were studies that observed a relationship between the occurrence of violence with intrauterine growth restriction, being born small according to the gestational age, and higher plasma levels of glutamate, GABA and cortisol.

Conclusively, it is interesting to note that, although inconclusive, the result of this review has implications for clinical practice, since it alerts about the importance of health professionals in both identifying and breaking the cycle of violence during pregnancy. Prenatal care is a privileged space for the identification of pregnant women victims of violence. Therefore, it is necessary for the professional to be prepared to tracking, welcoming and advising women experiencing violence, in order to promote integral and humanized care.

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