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RESEARCH ARTICLE

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COMPLICATIONS ASSOCIATED WITH INTIMATE PARTNER VIOLENCE IN PREGNANT WOMEN: A SYSTEMATIC REVIEW

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ABSTRACT

Objective: To identify the main maternal and neonatal complications in pregnant women victims of intimate partner violence. **Methods:** This is a six-step systematic review conducted between April and May 2021 in the Lilacs, Pubmed, Scopus, and Web of Science databases, with a time limit of 2009 to 2020. **Results:** In the 18 included articles, the prevalence rate of intimate partner violence in pregnant women ranged from 3.7% to 72.8%. Intimate partner violence was significantly associated with adverse maternal conditions (preterm delivery, prenatal and postpartum depression, miscarriage, placental abruption, excess gestational weight, emergency cesarean section, vaginal infection, urinary tract infection, vaginal bleeding, and suicidal ideation) and neonatal conditions (low birth weight, small for gestational age, and neonatal mortality). **Conclusion:** We found that the main complications among pregnant victims of intimate partner violence occur in the obstetric setting. Neonatal complications were also verified, the most frequent being low birth weight. The nurse needs to be aware of these situations, especially during prenatal care, drawing care and monitoring strategies.

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INTRODUCTION

Pregnancy is a period in which women are faced with situations that involve happiness for the arrival of a new being, as well as uncertainties and insecurity of attitudes to be taken (GOMES *et al.*, 2019). This period can also be marked by situations involving Intimate Partner Violence (IPV), which can lead to a series of complications, whether physical or psychological, for both the pregnant woman and the fetus (ROBINSON *et al.*, 2019). IPV involves several types of grievances, such as physical and sexual violence as well as situations that encompass stalking, threats and psychological aggression (Breiding *et al.*, 2015). At a global level, epidemiological estimates indicate that one in every three women experience abusive relationships, including pregnant women (Smith *et al.*, 2017). Epidemiological data indicate that this type of violence is classified as the second leading cause of traumatic injuries among

pregnant women, and that intimate partners are responsible for more than 60% of homicides in this group of women (Cheng and Horon, 2010; Mendez-Figueroa *et al.*, 2013). Pregnant women who suffer intimate partner violence are more likely to drop out of prenatal appointments, promoting greater risk for both her and the fetus (Chernetand Cherie, 2020). Maternal complications such as premature delivery and hypertensive disease are more frequent for women who have suffered IPV during pregnancy than others, in addition to situations involving anxiety, post-traumatic stress and suicidal ideation (Romero-Gutierrez *et al.*, 2011; Alhusen *et al.*, 2015; Oliveira *et al.*, 2017). Understanding these complications will allow health professionals, especially nurses, to establish measures to raise awareness and address this issue, both in Primary Health Care and in specialized care. They are in a unique position to create a safe and confidential environment, providing adequate support, referring to other resources and services, and establishing care for complications arising from violence (WHO, 2013). Although the literature reports several maternal and fetal complications that are a direct result of IPV

in pregnant women, few studies have gathered these data in an integrative or systematic way in order to understand at a global level what these complications are and to what extent they can compromise the lives of pregnant women, fetuses, and neonates. Thus, this study aimed to identify the main maternal and neonatal complications in pregnant women victims of intimate partner violence.

MATERIALS AND METHODS

This study was conducted under the methodology of a systematic literature review with descriptive scope, conducted based on the Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) method (MOHER *et al.*, 2015). Data collection in the literature was performed between April and May 2021, using the following databases: Lilacs, Scopus, National Institute of Medicine (NIH-PUBMED) and Web of Science. The search in Pubmed, Web of Science and Scopus was done through a search filter by the following terms extracted from Medical Subject Headings (MeSH): intimate partner violence AND pregnancy AND pregnancy complications. The search in Lilacs used the following terms extracted from the Health Science Descriptors (DeCS): violência por parceiro íntimo AND gravidez. Studies were eligible if they met the following criteria: full articles available in Portuguese, English or Spanish, published between 2009 and 2020; clear definition (given by the authors) of physical, sexual or psychological violence perpetrated by the intimate partner during pregnancy. Studies that evaluated violence against women perpetrated by men other than their intimate partners, studies that evaluated complications of IPV in periods other than the maternal and neonatal periods, studies that did not provide statistically significant information about the association between complications and IPV, review articles, and duplicates were excluded. The publications were then submitted to an exploratory reading in order to identify them. For data extraction, an instrument adapted in Microsoft Excel 2013 software was used as a parameter through the following variables: title of the article, authors, journal, year of publication, country of origin of the study, database, study approach, level of evidence, maternal complications resulting from IPV, and fetal or neonatal complications (SOUZA *et al.*, 2018). The classification used to verify the level of evidence of the studies was that proposed by Stillwell *et al.*, 2015, which considers seven levels of evidence, according to the design of the research. In the analyzed databases, 679 articles were found, but only 18 articles made up the final sample, according to Figure 1.

RESULTS

18 publications made up the final sample of this study. Table 1 shows the characteristics of the included studies. It is noted that the highest frequency of publication of these articles was from the years 2013 (n: 03) and 2018 (n:03), while the most frequently listed country of origin was the USA (n: 04). Regarding the type of research, it is possible to identify that most used cross-sectional studies (n: 10), so that the most common level of evidence was IV (moderate). As to the population studied, the included studies evaluated a total of 282,194 pregnant women, so that 28,268 of them have suffered IPV. It was observed that the prevalence rates of IPV (psychological and/or physical and/or sexual) in pregnant women in the studies analyzed ranged from 3.7% to 72.8% (Leone *et al.*, 2010; Alhusen *et al.*, 2014), depending on the methodology used and the country where the study was carried out, as well as cultural, socioeconomic and demographic factors. According to Table 2, which presents the maternal and neonatal complications resulting from IPV, it was found that the complications involving pregnant women were: premature delivery (n:03), postpartum depression (n:02), miscarriage (n: 02), emergency cesarean section (n:02), vaginal bleeding (n:02), premature placental detachment (n:01), excess gestational weight (n:01), prenatal depression (n:01), vaginal infection (n:01), urinary tract infection (n:01), and suicidal ideation (n:01). Also in Chart 2, it is possible to observe the complications involving the newborn, which were: low birth weight (n:06), small for gestational age - SGA (n:03), and neonatal mortality (n:01).

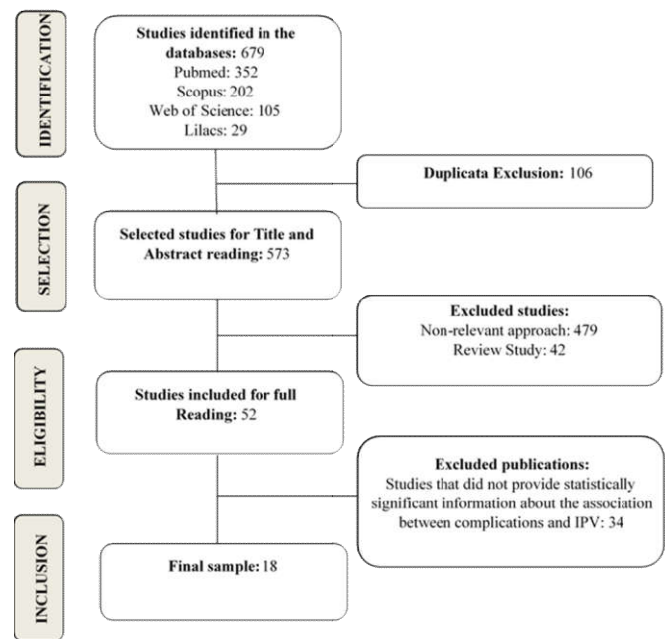


Figure 1. Article selection process, Recife, PE, Brazil, 2021

DISCUSSION

The prevalence and frequency of intimate partner violence represents a serious public health problem and in this review study it was possible to analyze several negative effects on both maternal and neonatal health from biological and sociocultural contexts (Carneiro *et al.*, 2016). Regarding the origin of the studies, although the country with the highest frequency was the USA (Leone *et al.*, 2010; Beydoun *et al.*, 2011; Alhusen *et al.*, 2013; Alhusen *et al.*, 2014), most publications were conducted in low-income or developing countries, such as in the Latin American (Moraes *et al.*, 2009; Sanchez *et al.*, 2013; Fonseca-Machado *et al.*, 2015) and Caribbean (Valladares *et al.*, 2009) regions and some African countries (Laelago *et al.*, 2017; Sigalla *et al.*, 2017; Shamu *et al.*, 2018). The studies conducted in these regions show a high frequency of IPV during pregnancy, indicating that the consequences for children in these and other regions may be even worse. The lowest prevalence of IPV during pregnancy (3.7%) was found in a population-based study in the city of Syracuse (New York, USA) of 2,873 women from local hospitals (Leone *et al.*, 2010); the highest prevalence (72.8%) was found in a cross-sectional study of 1,300 pregnant women seen in a hospital in the West Azerbaijan province of Iran (Hassan *et al.*, 2014). IPV is more frequent in places where gender inequality is institutionalized and accepted by sociocultural prerogatives, which happens with high frequency in Latin American countries (Varma *et al.*, 2007). Regarding Brazil, two studies evaluated the effects of IPV specifically in pregnant women, such as vaginal bleeding (Moraes *et al.*, 2009) and suicidal ideation (Fonseca-Machado *et al.*, 2015). In this country, IPV records have increased every year due to social and institutional responses to the demands of women's movements, which have led to more reports being made public, in addition to the creation of Women's Defense Police Stations, which has made IPV more visible (Vicente and Vieira, 2009). Regarding the methodology of the publications analyzed, the cross-sectional study was the most frequent, with level of evidence IV prevailing. Cross-sectional research may reflect some data imprecisely, which makes it impossible to clearly establish the temporal precedence of part of the factors studied. Some studies presented higher levels of evidence, which is necessary for this type of association, since a more robust methodological design needs to analyze different sample groups in order to analyze a more effective statistical correlation (Han and Stewart, 2014). An example associated with this is that none of the studies analyzed differences between pregnant women who attend prenatal care and those who do not, since the results may be different between these groups.

Table 1. General characteristics of the included studies, Recife-PE, Brazil, 2021

Authors (year)	Study country	Database	Study Type	Level of Evidence
Valladares et al. (2009)	Nicaragua	Scopus	Cross-sectional	IV
Moraes et al. (2009)	Brazil	Web of Science	Case-control	III
Leone et al. (2010)	USA	Pubmed	Retrospectiv	IV
Beydoun et al. (2010)	Canada	Scopus	Cross-sectional	IV
Urquia et al. (2011)	Canada	Scopus	Clinical	III
Beydoun et al. (2011)	USA	Scopus	Cross-sectional	IV
Alhusenet et al. (2013)	USA	Pubmed	Prospective clinical	III
Sanchez et al. (2013)	Peru	Pubmed	Cohort	III
Watson et al. (2013)	Australia	Web of Science	Case-control	III
Alhusenet et al. (2014)	USA	Pubmed	Cross-sectional	IV
Hassan et al. (2014)	Iran	Pubmed	Cross-sectional	IV
Fonseca-Machado et al. (2015)	Brazil	Lilacs	Cross-sectional	IV
Laelagoet al. (2017)	Ethiopia	Web of Science	Cross-sectional	IV
Sigalla et al. (2017)	Tanzania	Web of Science	Cohort	III
Dharet al. (2018)	India	Web of Science	Cross-sectional	IV
Shamu et al. (2018)	Zimbabwe	Pubmed	Cross-sectional	IV
Yu et al. (2018)	China	Pubmed	Cross-sectional	IV
Martin-de-Las-Heras et al. (2019)	Spain	Web of Science	Cohort	III

Table 2. Maternal and neonatal complications in pregnant women victims of IPV, Recife-PE, Brazil, 2021

Authors (year)	Participants (IPV)	Maternal and neonatal complications (CI*; OR**)
Valladares et al. (2009)	65	Association with low birth weight (p = 0.001) and being SGA (p = 0.000).
Moraes et al. (2009)	528	Pregnant women were 2.74 times (95% CI: 1.37-5.48) more likely to experience vaginal bleeding.
Leone et al. (2010)	105	Women more likely to have a premature placental abruption (OR:5.17, 95% CI: 1.37-19.51, p <0.05).
Beydoun et al. (2010)	8.542	Postpartum depression (OR: 1.61; 95% CI: 1.06-2.45).
Urquia et al. (2011)	6.421	Postpartum depression (OR: 4.1, 95% CI: 1.9-8.9).
Beydoun et al. (2011)	751	Excess gestational weight gain (OR: 1.46, 95% CI: 1.09-1.96).
Alhusenet et al. (2013)	32	4-fold increase in having a GIP newborn (OR = 4.00; 95% CI 1.58-9.97).
Sanchez et al. (2013)	501	2.1-fold increased risk of low birth weight (95% CI 1.59-2.68).
Watson et al. (2013)	603	Premature birth (OR 2.24; 95% CI 1.01, 4.97; p = 0.05).
Alhusenet et al. (2014)	239	Greater chance of low birth weight (OR: 4.20; 95% CI 1.46)-12.10) and of being SGA (OR: 4.81; 95% CI:1.86-12.47).
Hassan et al. (2014)	945	Premature birth (OR: 1.54; 95%CI:1.16-2.03); Cesarean section (OR: 11.84; 95%CI: 6.37-22.02); Vaginal bleeding (OR: 1.51; 95%CI: 0.9-2.3).
Fonseca-Machado et al. (2015)	358	6.29 more likely to have an indication of suicidal ideation.
Laelago et al. (2017)	42	Low birth weight (OR: 14.3, 95% CI: 5.03, 40.7).
Sigalla et al. (2017)	278	Three times more likely to have low birth weight (OR = 3.2; 95% CI: 1.3-7.7).
Dhar et al. (2018)	6.211	Spontaneous abortion (OR = 1.35, 95% CI = 1.11-1.65).
Shamu et al. (2018)	2.042	Spontaneous abortion (OR: 1.26-1.38) and emergency cesarean section (OR:1.31, 95% CI: 1.03-1.83).
Yu et al. (2018)	146	Prenatal depression (OR: 2.50, 95% CI: 1.60-3.90).
Martin-de-Las-Heras et al. (2019)	779	Urinary tract infection (OR:1.9; 95%CI:1.2-3.0), vaginal infection (OR: 2.4; 95%CI: 1.2-4.7) and preterm birth (OR: 2.2; 95%CI: 1.1- 4.5).

Note: *Confidence Interval; ** Odds ratio

As for the maternal complications found in the results, the most frequent was premature birth, although others were reported, such as spontaneous abortion, placental abruption, excess gestational weight, and emergency cesarean section. Several mechanisms may be involved in the occurrence of these complications. Some of them may be involved, such as endothelial dysfunction and increased inflammatory cytokines being implicated in the pathogenesis of placental insufficiency, premature detachment of the placenta, and premature delivery (Nath *et al.*, 2007; Watson and Taft, 2013). In addition, acute injury to the abdomen, due to blows to this region, may be a pathway contributing to the increased risk of spontaneous premature delivery among victims of IPV (Nath *et al.*, 2007). Other relationships can be found, such as those related to the effect of stress produced by violence during pregnancy (Sanchez *et al.*, 2013). The stress factor related to IPV can exacerbate pre-existing clinical conditions, such as hypertension and gestational diabetes, leading to complications in pregnancy, affecting the reproductive endocrine system, and promoting unhealthy behaviors, such as alcohol or drug use during pregnancy, causing a number of complications for both the pregnant woman and the fetus (Sanchez *et al.*, 2013; Martin-de-Las-Heras *et al.*, 2019). In addition authors have shown that chronic stress exposure results in elevated basal cortisol levels with dysregulation of the hypothalamic-pituitary-adrenal (HPA) axis. Elevated levels of hypothalamic, pituitary, and placental hormones can cause premature

labor, and at the same time, decrease uteroplacental perfusion due to vasoconstriction (Kalantaridou *et al.*, 2010). It was verified the presence of relations between IPV with complications involving the newborn, such as small for gestational age - SGA, neonatal mortality and low birth weight, the latter being the most frequent in the analyzed results. In relation to low birth weight, this occurs because the chronic prenatal stress generated by IPV increases the activity of the hypothalamic-pituitary-adrenal axis, elevating maternal cortisol. It crosses the placenta and consequently influences several aspects of fetal development, including the birth of a low birth weight fetus (Frith *et al.*, 2015). It is then necessary that there is a series of health actions aimed at monitoring pregnant women who suffer IPV, even performing active search since many of them may not participate in prenatal consultations. Nurses need to analyze IPV as a multifaceted phenomenon, which brings clinical repercussions to the health of pregnant women, drawing care strategies and establishing a bond of trust, in order to avoid further maternal and neonatal complications. The evidence and information identified in this study provide subsidies for the development of actions aimed at early clinical decision making for pregnant women who suffer intimate partner violence, especially in the prenatal nursing consultations, so that strategies can be outlined to avoid possible maternal and/or neonatal complications. The limitations of the study refer to the

sample, since only articles available online in full in the consulted databases were included.

CONCLUSION

It was found that the main complications among pregnant victims of intimate partner violence occur at the obstetric level, where significant effects have been recorded by the scientific literature such as premature delivery, miscarriage, emergency cesarean section, vaginal bleeding, premature placental abruption, excess gestational weight, vaginal and urinary tract infection, and psychological effects such as prenatal and postnatal depression and suicidal ideation. The neonatal complications, although few studies have analyzed, have also been verified significant effects, such as low birth weight, small for gestational age - SGA and neonatal mortality. Thus, nurses need to be aware of these situations, especially during prenatal care, drawing care and monitoring strategies among pregnant women victims of IPV, seeking not only to provide psychological support, but also, analyzing more routinely possible clinical changes that may occur among these women.

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