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Original article

Mother-newborn health indicators in possible victims of gender-based violence during pregnancy

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ABSTRACT

Background: Pregnancy increases the risk of gender-based violence, considered an underdiagnosed public health problem.
Objective: To determine the association between the situation of possible gender-based violence in the pregnant woman and variables related to pregnancy, labor, puerperium, and newborn health.
Design: An observational multicenter study.
Settings: Three Spanish hospitals during 2015.
Participants: 141 pregnant women in which information is collected sociodemographic variables and data related to pregnancy, labor, and puerperium were gathered by interview and from clinical records. Comparisons of means and logistic regression analyses were performed, calculating crude and adjusted odds ratios.
Results: The study included 141 women; 44 in a situation of possible abuse required more medication during labor ($p = 0.018$), had less early skin contact with their newborn ($p = 0.021$) and more non-reassuring cardiotocography traces ($p = 0.012$), and reported greater pain during labor ($p = 0.013$). The children of the mothers in this situation had a lower mean Apgar score ($p < 0.059$), less frequently began breastfeeding early ($p = 0.008$), and had higher risk of low birth weight ($p < 0.001$).
Conclusion: The situation of possible abuse in pregnant women may negatively affect their pregnancy, their pain and need for medication during labor, and other newborn health indicators, among other health parameters.

1. Introduction

The United Nations defines violence against women as any act of gender-based violence that results in, or is likely to result in, physical, sexual, or psychological harm or suffering to women, including threats of such acts, coercion, or arbitrary deprivation of liberty, whether occurring in public or in private life. Women are known to be especially vulnerable to gender-based violence in certain situations, including pregnancy (Ministry of Health, Social Services and Equality of Spain, 2012). International reports on the frequency of intimate partner violence against women during pregnancy vary widely from 5% to 69.9% (Abdollahi, Abhari, Delavar, & Charati, 2015; Breiding et al., 2014). This violence has multiple consequences for the mothers and offspring and has been associated with worse obstetric and perinatal outcomes and with negative effects on the subsequent health of the children, even up to adulthood (Boy & Salihu, 2004; Taft, Powell, & Watson, 2015; Velasco Juez, 2008).

Researchers have related gender-based violence to the alcoholism of partners, inadequate social support for the women, and a low educational level in either partner; however it is rooted in gender inequality, and any woman can be a victim of gender-based violence just for being female (Heise, 1998; Makayoto, Omolo, Kamweya, Harder, & Mutai, 2013; Ruiz-Pérez, Blanco-Prieto, & Vives-Cases, 2004). The American Congress of Obstetricians and Gynecologists recommend an active search for signs of violence during pregnancy (American College of Obstetricians and Gynecologists and Centers for Disease Control and Prevention, 2000), and some authors have proposed interventions in these cases (Shoffner, 2008) and reported the benefits of this approach (Shay-Zapien & Bullock, 2010). However, measures to identify possible cases are not always included in pregnancy follow-up protocols. (Andalusian Ministry of Health, 2014; Spanish Society of Gynaecology and Obstetrics, 2002). There appears to be no consensus on specific recommendations on the detection of gender-based violence during routine pregnancy checkups and labor care or on the action that needs to be taken when cases are identified (Andalusian Ministry of Health, 2014; Spanish Society of Gynaecology and Obstetrics, 2002).

There is a need for reliable scientific data to reveal the true prevalence of gender-based violence during pregnancy and the health

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consequences for the mothers and newborns of this severe and apparently under-diagnosed public health problem (Coll-Vinent et al., 2008; Martinez Galiano, 2011). The working hypothesis was: Gender Violence during pregnancy is a problem with a high prevalence, also women living a possible situation of maltreatment during pregnancy have worse maternal and neonatal outcomes, so with the realization of this The following objectives were established: to estimate the prevalence of situations of possible partner violence in a population of pregnant women from Southern Spain and examine some of its repercussions on the pregnancy, labor, puerperium and newborn health.

2. Materials and methods

This prospective observational study was conducted in adult females giving birth during 2015 at three hospitals in Jaen province (southern Spain): University Hospital Complex (Jaen), San Juan de la Cruz Hospital (Ubeda), and San Agustin Hospital (Linares). The study was approved by the ethics committees of the participating hospitals, and all participants signed their informed consent. Women with an inadequate command of the Spanish language were excluded from the study.

The sample size was based on the number of women of reproductive age in Jaen province, 111,427 (National Institute of Statistics of Spain, 2014), and the reported prevalence of pregnant women suffering abuse, 7% (Velasco, Luna, Martin, Caño, & Martin-de-Las-Heras, 2014), and was designed to obtain 5% precision with 5% alpha error. The resulting sample size of 101 women was increased to 140 to compensate for possible recruitment difficulties, given the difficult social connotations of this issue. The women were selected consecutively at each hospital to obtain sample sizes proportional to the number of deliveries in each center during 2014, *i.e.*, 79 cases from Jaen University Hospital Complex, 32 from San Juan de la Cruz Hospital, and 30 from San Agustin Hospital.

Information was gathered during the postpartum hospital stay on sociodemographic variables of the women and their partners, including their *cohabitation* status, and on their lifestyle, personal and obstetric history, and data related to the pregnancy and its follow-up, the puerperium, newborn health, breastfeeding, utilization of healthcare system resources, and satisfaction with the care received. These data were collected using an interviewer-administered *ad hoc* questionnaire and validated from clinical records when appropriate. It contained 50 items (48 closed and 2 open), plus including two items from the short version of the Woman Abuse Screening Tool (WAST), validated for gender-based violence screening (Plazaola-Castaño, Ruiz-Perez, & Hernandez-Torres, 2008). The questionnaire was administered by nine interviewers, who had all received training to ensure that their interpretation of items was identical. Before its use in the final study, the questionnaire was first piloted at each center.

SPSS was used for the statistical analysis. Dichotomous variables were compared between the presence and absence of possible gender violence, calculating odds ratios with 95% CI, while means of continuous outcome variables were compared by covariate analysis in multivariate analysis, using the Mann-Whitney *U* test or Kruskal-Wallis test for non-normally distributed variables. Logistic regression was applied for binary variables in multivariate analysis. $p < 0.05$ was considered significant.

3. Results

The study included 141 women with a mean (±standard deviation) age of 30.52 ± 5.45 yrs.; 97.2% (n = 137) were Spanish Caucasians; 67.4% (n = 95) were married; 27.7% (n = 39) had university studies and 22% (n = 31) had high school diploma and/or vocational training; 86.5% (n = 122) were Roman Catholics; 39.7% (n = 56) had an income of 1001–1999 €/month and 35.5% (n = 50) one of <1000 €/month; 34.8% (n = 49) were homemakers, 21.3% (n = 30) worked in public services, and 16.3% (n = 23) in retail; 42.6% (n = 50) were unemployed, while 29.1% (n = 41) were in permanent employment outside the home; 54.6% (n = 77) did not live with children or elderly people who required care; 33.3% (n = 47) lived in a locality with >30.000 inhabitants and 22% (n = 31) in one with 10,001–15,000 inhabitants; and 95% (n = 134) of the women had no history of disease.

Pregnancy was intended in 83% (n = 117) of cases. The participants had been pregnant a mean 1.86 ± 1.04 times; 66.7% (n = 94) of women were satisfied with the healthcare received during the pregnancy and labor. The prevalence of women in a situation of possible abuse was 31.2% (n = 44); 47.5% (n = 66) of the women believed that intimate partner violence does not occur during the pregnancy.

Table 1 exhibits the association between possible abuse during pregnancy and variables related to pregnancy, labor, and puerperium. There were no differences ($p = 0.093$) in the likelihood of a situation of possible abuse among women attending pregnancy checkups alone, with their partner, or with other people. Women in this situation more frequently reported that the pregnancy was unintended *versus* those not in this situation (36.4% *vs.* 8.2%, respectively; $p < 0.001$), and they were less satisfied with the care received during pregnancy, labor, and puerperium ($p = 0.004$). No associations were found between the possible abuse of the pregnant woman and the type of delivery ($p = 0.121$), maternal complications during labor/postpartum ($p = 1.000$), health problems during pregnancy ($p = 0.316$), frequency of perineal tear ($p = 0.123$), active participation during labor ($p = 0.162$), amniotic fluid color ($p = 0.99$), or use of analgesia in labor ($p = 0.641$). However, the women in a situation of possible abuse required more medication during labor ($p = 0.018$), less frequently had early skin contact with their newborn child ($p = 0.021$) or participated in the maternal education program ($p < 0.001$) and more frequently had a non-reassuring cardiotocography trace ($p = 0.012$) in comparison to the other mothers in the sample.

The occurrence of abuse during pregnancy was believed possible by 74.42% (n = 32) of the women in a situation of possible abuse *versus* 42.70% (n = 41) of those who were not ($p = 0.001$).

Breastfeeding was started early (initiated in the first hour of life of newborn) by 70.45% (n = 31) of the women considered to be in a situation of possible abuse *versus* 86.46% (83) of the women who were not ($p = 0.008$), and this significant difference persisted after adjusting for type of delivery and early skin contact ($p < 0.001$). Significantly higher frequencies of hospitalization ($p = 0.037$), low birth weight ($p < 0.001$), and preterm birth ($p < 0.001$) were recorded for the newborn of women in a situation of possible abuse. Table 2 exhibits the associations found between possible gender-based violence during pregnancy and newborn health outcomes.

4. Discussion

A substantial proportion of this study population of pregnant women in Southern Spain was in a situation of possible gender-based violence during their pregnancy. The women in this situation were more likely to believe that intimate partner violence during pregnancy is possible, perhaps influenced by their own experience.

The women in a situation of possible intimate partner violence started pregnancy checkups later and attended fewer sessions in comparison to the women not in this situation, although no differences were observed among those attending visits alone, with their partners, or with other people. Pregnancy outcomes are known to be improved with an adequate number of pregnancy checkups that begin at an early stage (Krueger & Scholl, 2000). Women who were potentially victims of gender violence gained less weight during pregnancy, although their mean weight gain was within recommended ranges (Gramage-Córdoba, Asins-Cubells, Alvarez-Rodriguez, Alonso-Bellido, & Aguirre-Jaime, 2013). They were also more likely to continue smoking to the end of their pregnancy and to have had miscarriage and previous pregnancy and to have an unintended pregnancy, and shorter gestation period. In addition, they were less satisfied with the healthcare received during pregnancy, labor, and puerperium. The women in a situation of