Journal of Affective Disorders 175 (2015) 18–24

Contents lists available at ScienceDirect

Journal of Affective Disorders

journal homepage: www.elsevier.com/locate/jad

Research report

Prevalence and incidence of perinatal depression and depressive symptoms among Mexican women

M. Asunción Lara [a,*], Laura Navarrete [a], Lourdes Nieto [a], Juan Pablo Barba Martín [b], José Luis Navarro [c], Héctor Lara-Tapia [b]

[a] Instituto Nacional de Psiquiatría Ramón de la Fuente Muñiz. Calzada México-Xochimilco 101, San Lorenzo Huipulco, Tlalpan, México D. F. 14370, Mexico
[b] Hospital Regional "Lic. Adolfo Lopez Mateos" Instituto de Seguridad y Servicios Sociales de los Trabajadores del Estado, ISSSTE, México D. F., Mexico
[c] Delegación Regional Poniente. Instituto de Seguridad y Servicios Sociales de los Trabajadores del Estado, ISSSTE,. México D. F., México

ARTICLE INFO

Article history:
Received 24 November 2014
Received in revised form
5 December 2014
Accepted 11 December 2014
Available online 23 December 2014

Keywords:
Prevalence
Incidence
Pregnancy depression
Postpartum depression
Middle-low income country
Perinatal depression

ABSTRACT

Background: The aim of this study was to assess point and period prevalence and incidence of perinatal depression in Mexican women.
Methods: The Structured Clinical Interview for DSM-IV and the Patient Health Questionnaire (PHQ-9) were administered at three points in time to 210 women: during the third trimester of pregnancy, at six weeks and at six months after delivery.
Results: Prevalence of prenatal depression was 9.0%, and 13.8% at six weeks and 13.3% at six months postpartum. Incidence of postpartum depression (PPD) was 10.0% at six weeks and 8.2% at six months. Prevalence of prenatal depressive symptoms was 16.6%; and 17.1% at six weeks and 20.0% at six months postpartum. Incidence of postpartum depressive symptoms (PPDS) was 11.4% at six weeks and 9.0% at six months. At six months postpartum, women with depression were younger (OR=2.45, p=0.02), had fewer years' schooling (OR=5.61, p=0.00), were unpartnered (OR=3.03, p=0.01), unemployed (OR=3.48, p=0.00) and poorer (OR=4.00, p=0.00) than women without depression.
Limitations: 25% of the initial sample was not retained to complete the three assessments. Non completers were younger, less educated and reported more depressive symptoms. This may have resulted in an underestimation of prevalence.
Conclusions: This is the first longitudinal study in Latin America to assess perinatal depression at three different points in times, reporting point and period prevalence and incidence of clinical depression and depressive symptoms. Most LA countries have yet to recognize the importance of providing mental health care for expectant and postpartum mothers to reduce disability in mothers and infants.

1. Introduction

Perinatal depression is a common condition affecting large numbers of women worldwide. According to the DSM-V (American Psychiatric Association, 2013), perinatal or peripartum depression is a phenomenon that is undistinguishable from major depression except for its timing, having its onset during pregnancy or within the first four weeks postpartum. However, in clinical practice and many research studies time frames range up to one year postpartum (O'Hara and McCabe, 2013). The fact that it may occur during a vulnerable period in women's lives creates enormous concern among mental health professionals, since it has extremely severe effects on the health of both mother and baby.

Prenatal depression, one of the strongest predictors of postpartum depression (PPD), is associated with poor health behavior and risk-taking behavior (Bennett et al., 2004a). Depressed pregnant women are also more likely to deliver prematurely, and neonates are at a greater risk for low birth weight and being small for gestational age (Field et al., 2006). PPD often inhibits the woman's ability to perform daily activities, which may have detrimental effects on her capacity to care effectively for herself and her baby. PPD has been associated with greater use of emergency department services, malnutrition, developmental delay, and lower quality interactions between mother and baby, which is associated with high rate of insecure attachment in the latter (Murray and Cooper, 1997; Field, 2010).

A review study on the prevalence of depression in pregnancy measured through structured interviews, including data mostly from developed countries, reports a prevalence of 2–21% (Bennett et al., 2004a). Another systematic review, which included studies using structured interviews and excluded studies from less

* Corresponding autor. Tel.: +52 55 416 05170; fax: +52 55 55133446.
E-mail address: laracan@imp.edu.mx (M.A. Lara).

http://dx.doi.org/10.1016/j.jad.2014.12.035
0165-0327/

developed countries, found a prevalence of 8.5–11% for major and minor depression (3.1–4.9 for major depression alone) (Gayness et al., 2005). Bennett et al. (2004a) also reviewed the prevalence of depressive symptoms in pregnancy based on self-report questionnaires; the prevalence found varied from 8% to 31%. (In Latin America), research using clinical interviews finds rates of 12.3–14% (Ocampo et al., 2007; Gómez and Aldana, 2007), while depressive symptoms are reported in 24.3% (Edinburgh Postnatal Depression Scale, EPDS $\geq$ 12) (Melo et al., 2012), 30.7% (Centre for Epidemiologic Studies Depression Scale, CES-D $\geq$ 16) (Lara et al., 2006), and 34.7% (EPDS $\geq$ 13.5) (Bao-Alonso et al., 2010).

For PPD, Gaynes et al.'s (2005) systematic review estimates a 6.5–12.9% prevalence for major and minor depression and of 1.0–5.9% for major depression alone during the first year postpartum. O'Hara and Swain (1996) estimate the prevalence of PPD using a meta-analysis including data mainly but not exclusively from developed countries. In their study, PPD prevalence based on interviews was 12% (95% CI 11.3–12.7) and on self-report measurements was 14% (95% CI 13.1–14.9). In Latin America, the prevalence of PPD using clinical interviews varies widely from 13.8% to 24.1% (Ocampo et al., 2007; Alvarado-Esquivel et al., 2010; Almanza-Muñoz et al., 2011; Álvarez et al., 2008; Alvarado et al., 2000; Aramburú et al., 2008), while PPDS measured by the EPDS is 10.8% (EPDS $\geq$ 12) (Melo et al., 2012) and 14.2% (EPDS $\geq$ 13) (DeCastro et al., 2011).

Gaynes et al. (2005) found very few studies reporting measurements other than point prevalence such as incidence and period prevalence. Their estimate for new PPD cases is 14.5% within the first three months postpartum (6.5% of major depression alone) while their estimate for period prevalence was19.2% (7.1% for major depression only). To our knowledge, in Latin America there is only one study reporting the incidence of PPD, finding 8.8% of new cases during the first two months postpartum (Alvarado et al., 2000) with no studies reporting period prevalence.

Some of the methodological problems when interpreting the prevalence of PPD are due to population characteristics but more often to the use of different measures of depression (Gaynes et al., 2005). Prevalence based on structured interviews is considered to provide more accurate estimates of the disease burden for targeting health care expenditure (Gavin et al., 2005), while self-report scales tend to yield higher rates than those based on clinical interviews (Halbreich and Karkun, 2006; Austin, 2014). Nevertheless, estimates based on self-report questionnaires are used worldwide because of their ease and cost efficiency, as they do not require trained clinicians to be administered (Robertson et al., 2003). Estimates of depression prevalence based on self-reports, apart from their use as screening tools, have clinical significance. Persons diagnosed with these instruments experience disability and need treatment (Gjerdingen et al., 2011). During the perinatal period, depressive symptoms may be very debilitating and are associated with adverse pregnancy outcomes (Marcus et al., 2003). Measurements of depressive symptoms based on self-report scales have the advantage of reflecting a broader spectrum of postpartum depression (Halbreich and Karkun, 2006).

Other issues that affect the interpretation of estimates of PPD include the small number of studies reporting whether the prevalence of PPD refers to new cases or those that were already present in pregnancy, or the failure to distinguish point prevalence from period prevalence (Halbreich and Karkun, 2006). Lastly, most studies assess PPD up to three months postpartum, whereas depression may remain high for several more months (Gaynes et al., 2005).

The aim of this paper is therefore to provide estimates of: (1) the prevalence of prenatal depression (structured interview) and depressive symptoms (self-report questionnaire); (2) point and period prevalence and incidence of PPD and postpartum depressive symptoms (PPDS), and (3) demographic and clinical characteristics of depressed and nondepressed mothers in a naturalistic, longitudinal study of a selected group of Mexican women recruited during the third trimester of pregnancy and followed at six weeks and six months after delivery. This study constitutes a unique attempt in Latin America to explore these aspects in relation to perinatal depression and depressive symptoms in a longitudinal study. The results will contribute to a more accurate understanding of perinatal depression and may serve as a starting point for estimating the health resources required to ensure perinatal women and their babies minimum mental health care, virtually absent in most Latin American countries.

2. Method

2.1. Participants

Pregnant women receiving antenatal care were invited to participate in the study. They were approached in the waiting rooms of two institutions in Mexico City: (1) a hospital that provides comprehensive medical care for state workers, and (2) a community health care center that provides prenatal and other medical care for the local population.

Convenience sampling to determine the sample size was estimated considering 15% prevalence based on estimates of 22.5% by García et al. (1991) and 6.6% by Ocampo et al. (2007) with an error margin of 5%. The required sample size was 196 women corresponding to the three periods assessed. Given the high attrition in this population (Le and Lara, 2008; Lara et al., 2010), an additional 40% were recruited, resulting in 280 participants approached during pregnancy. Women were eligible if a screening checklist determined that they: were $\geq$20 years, $\geq$26 weeks pregnant, did not have a bipolar condition, and lived in the metropolitan area of Mexico City. Eligible participants who agreed to be interviewed completed a written consent form.

2.2. Instruments

Demographic and obstetric data included age, educational attainment, monthly family income, marital status, paid work in the last 6 months, first pregnancy and planned pregnancy. For the purpose of this study, family income reported was converted into two categories: 1) low income ($\leq$ $5246 Mexican pesos), which corresponds to deciles 1–3, comprising families with the highest poverty level in Mexico, and 2) medium and high income ($>$ $5246 Mexican pesos) corresponding to deciles 4–10, according to statistics provided by the Instituto Nacional de Estadística y Geografía (INEGI, 2013).

Depression was assessed by the mood disorders module of the Structured Clinical Interview (SCID-I; First et al., 1996). The SCID-I is a semi structured interview for diagnosing current major depression according to DSM-IV criteria. The interview, used internationally, has previously been used with perinatal Mexican women (Lara et al., 2010). The diagnostic assessment was conducted by the undergraduate psychologists who conducted the whole interview. They received 15 h training on the SCID, in addition to the training in the general interview, by a certified psychiatrist with extensive experience, and met with her for supervision at four different points during the data collection stage.

Depressive symptoms were measured using the Patient Health Questionnaire (PHQ-9) (Spitzer, Kroenke and Williams, 1999). This is a 9-item depression module from the full PHQ, specifically developed for use in primary care. According to Kroenke et al. (2001) a score $\geq$10 indicates risk of depression. The PHQ-9 has proved its usefulness as an assessment tool for the diagnosis of depression with acceptable reliability, validity, sensitivity, and