Rev Bras Psiquiatr. 2012;34:446-450

Revista Brasileira de Psiquiatria
RBPPsychiatry
Official Journal of the Brazilian Psychiatric Association
Volume 34 • Number 4 • December/2012



BRIEF COMMUNICATION

Antenatal depression strongly predicts postnatal depression in primary health care

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Submitted on July 13, 2011; accepted on January 26, 2012

DESCRIPTORS:
Antenatal Depression;
Postnatal Depression;
Risk Factors;
SRQ-20.

Abstract
Objective: To estimate the association between antenatal and postnatal depression and to examine the role of socioeconomic conditions in the risk of postnatal depression. *Methods*: A prospective cohort study, conducted between May 2005 and January 2006, with 831 pregnant women recruited from primary care clinics in the public sector in the city of São Paulo, Brazil. The presence of antenatal and postnatal depression was measured with the Self Report Questionnaire (SRQ-20). Sociodemographic and socioeconomic characteristics and obstetric information were obtained through a questionnaire. Crude and adjusted risk ratios (RR), with 95% CI, were calculated using a Poisson regression. *Results*: The prevalence of postnatal depressive symptoms was 31.2% (95%CI: 27.8-34.8%). Among the 219 mothers who had depressive symptoms, nearly 50% had already shown depressive symptoms during pregnancy. Women who had antenatal depression were 2.4 times more likely to present with postnatal depression than were women who did not have such symptoms during pregnancy. In the multivariate analysis, higher scores for assets (RR: 0.76, 95% CI 0.61-0.96), higher education (RR: 0.75 95%CI 0.59-0.96), daily contact with neighbors (RR: 0.68, 95%CI 0.51-0.90) and antenatal depression (RR: 2.44, 95%CI 1.93-3.08) remained independently associated with postnatal depression. *Conclusions*: Antenatal and postnatal depression are highly prevalent in the primary care setting.

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doi: 10.1016/j.rbp.2012.01.003

DESCRITORES:
Depressão antenatal;
Depressão pós-parto;
Fatores de risco;
SRQ-20.

Depressão antenatal prediz fortemente depressão pós-parto na atenção básica à saúde

Resumo
Objetivo: Estimar a associação entre depressão pré-natal e pós-natal, e examinar o papel das condições sócioeconômicas sobre o risco de depressão pós-parto. *Métodos*: Estudo de coorte prospectivo, realizado entre maio de 2005 e janeiro de 2006, com 831 gestantes recrutadas de clínicas de cuidados básicos, do setor público, na cidade de São Paulo, Brasil. Presença de depressão pré-natal e pós-natal foi medida com o Self Report Questionnaire (SRQ-20). Características sócio-demográficas e socioeconômicas, e informações obstétricas foram obtidas através de um questionário. Riscos relativos (RR), bruto e ajustado, com IC de 95%, foram calculados usando Regressão de Poisson. *Resultados*: A prevalência de sintomas depressivos pós-natal foi de 31,2% (IC95% 27,8-34,8%). Entre as 219 mães que tinham sintomas depressivos, quase 50% já haviam mostrado sintomas depressivos durante a gravidez. Mulheres que tiveram depressão pré-natal tiveram risco 2,4 vezes maior de apresentar depressão pós-parto do que as mulheres que não tiveram tais sintomas durante a gravidez. Na análise multivariada, maior escore de bens (RR: 0,76; IC95% 0,1-0,96), maior escolaridade (RR: 0,75; IC95% 0,59-0,96), contacto diário com vizinhos (RR: 0.68; IC95% 0,51-0,90) e depressão pré-natal (RR:2,44; IC95% 1,93-3,08) permaneceram independentemente associadas com depressão pós-parto. *Conclusões*: Depressão pré-natal e pós-natal são altamente prevalentes na atenção primária, e profissionais de saúde devem ser treinados para realizar intervenções simples e eficazes, o mais precocemente possível.

Introduction

Antenatal and postnatal depression are very common and have implications for the health of women and children. Postpartum depression is associated with adverse outcomes for the mother, such as increased suicide risk,[1] and for the newborn, including impaired cognitive development.[2] Depression during pregnancy increases the risk of prematurity and low birth weight.[3] Antenatal and postnatal depression are associated with several environmental factors, especially socioeconomic conditions, social support, marital problems and adverse life events.[4] Antenatal depression is an important predictor of postpartum depression.[5] However, the proportion of women with postpartum depression who were already depressed during pregnancy varies.[6-8] In England, Australia and the United States, these proportions are 56%, 36% and 39%, respectively.

In Brazil, several studies have shown a high prevalence of depressive symptoms both during pregnancy[9,10] and in the postpartum period.[11] Both in the antenatal and postpartum periods, the prevalence of depressive symptoms was associated with worse socioeconomic conditions. To date, no prospective study has investigated the relationship between antenatal and postpartum depression among Brazilian women attending antenatal care in primary care clinics. The aim of the present study was to estimate the association between antenatal and postnatal depression and to examine the role of socioeconomic conditions on the risk of postnatal depression.

Methods

Study design and sample

This study was a prospective cohort study that was conducted between May 2005 and January 2006 with pregnant women recruited from 10 primary care clinics of the public sector in three administrative districts in the Western area of the city of São Paulo, Brazil. The study area comprised a heterogeneous population of approximately 250,000 inhabitants where people with high, medium and low income live near each other. Public primary care clinics offer free antenatal care for all women living in their catchment areas. Antenatal care is offered regularly, usually once a month, and generally starts as soon as the woman goes to the clinic for a pregnancy test. The women who were followed in these clinics are at low obstetric risk. High-risk pregnancies are often referred for prenatal care in regional hospitals. There were two public hospitals in the study area, accounting for approximately 2,000 deliveries per year. Women also attended the primary care clinics after childbirth. Pregnant women between 20 and 30 weeks of pregnancy, whose conception occurred naturally, who were 16 years of age or older, who had singleton pregnancies, and who were receiving antenatal care in primary care clinics in the study area were considered eligible for this study. More details of the study sample have been described elsewhere.[10] Postpartum women were interviewed at home (mean time of interview after delivery: 11.1 months, SD: 2.3 months). Almost three-quarters of the women were interviewed between 6 and 12 months after delivery, and 27.6% were evaluated up to 18 months after delivery.

Instruments

Depression during pregnancy and postpartum depression

The presence of antenatal and postnatal depression was measured with the Self-Report Questionnaire (SRQ-20), which was developed for screening common mental disorders in patients treated in primary care services.[12]

The SRQ-20 was validated in primary care centers in Brazil, with 85% sensitivity and 80% specificity.[13] The SRQ-20 has good psychometric properties for diagnosing antenatal and postnatal depression, performing even better than instruments specifically designed for this purpose.[14] The cutoff point of the SRQ-20 was set at 7/8 for the present study.[13]

Other exposure variables

Sociodemographic and socioeconomic characteristics and obstetric information were obtained through a structured detailed questionnaire that was applied during the antenatal assessment. The information obtained included age, years of schooling, family income (in US dollars), marital status, skin color and frequency of contact with neighbors. Household assets included electricity, plumbing, computer, television, cable television, bathroom, telephone and refrigerator. An assets score was created in which every existing item in the household was assigned a point. Previous and current obstetric data included planned pregnancy, number of previous abortions, number of pregnancies, gestational age, birth weight of infants and Apgar scores at 5 minutes. A dual "yes-no" classification of obstetric complications was developed. "Yes" was defined by the presence of a gestational age less than 37 weeks, a newborn weight under 2500 grams or a 5 minute Apgar score less than 7.

Procedures

During the study period, trained research assistants went to the primary care clinics and approached all pregnant women. Eligible women were invited to participate. Those who agreed and signed an informed consent were then interviewed. The same group of research assistants administered the SRQ-20 in the postnatal period through home interviews. The participants answered the SRQ-20 up to 18 months after delivery. The Ethics Committee of the Universidade de São Paulo School of Medicine approved the research project.

Statistical analysis

Exposure variables were summarized and categorized. Crude and adjusted risk ratios (RR) with 95% confidence intervals were calculated using robust variance estimates with a Poisson regression.[15] In the adjusted multivariate multiple-regression model, exposure variables with p-values ≤ 0.20 in the bivariate analysis were included, the exception being income per capita due to its strong association with years of education. Statistical associations were assessed with likelihood ratio tests. A statistical analysis was performed using Stata 9 software.

Results

Eight hundred and sixty-eight eligible pregnant women were identified, and 831 (95.7%) of these women were included in the study during the antenatal care period. Of these women, 701 (84.4%) were re-assessed during the postnatal period. The average age of these women was 25 years, and 147 (21%) women were less than 20 years of age. Almost three-quarters (73.3%) of the women were living with a partner. Just over half (53%) of the women were white, and a similar proportion had more than eight years of education. The average family income was 440 U.S. dollars. One hundred and ninety-six (28.0%) participants had antenatal depression (Table 1).

The prevalence of postnatal depression was 31.2% (95%CI 27.8-34.8%). Among the 219 mothers who had post-natal depression, 109 (49.8%) had already shown symptoms of antenatal depression. In the bivariate analysis, postnatal depression was inversely associated with frequency of contact with neighbors, assets score, years of education and planned pregnancy and was positively associated with previous miscarriage and having three or more previous pregnancies. Antenatal depression showed a strong association with postnatal depression. In the multivariate Poisson regression analysis, higher assets scores (RR: 0.76 95%CI 0.61-0.96), higher education (RR: 0.75 95%CI 0.59-0.96), daily contact with neighbors (RR: 0.68 95%CI 0.51-0.90) and antenatal depression (RR: 2.44 95%CI 1.93-3.08) remained independently associated with postnatal depression (Table 1). Women who had antenatal depression were 2.4 times more likely to present with postnatal depression than were women who did not have such symptoms during pregnancy. Family income was not kept in the final model because of its strong association with education level, which resulted in a better fit in that model.

Discussion

Our results showed that postnatal depression is common among women treated in primary care clinics in Sao Paulo, affecting one in three mothers. Antenatal depression was the main predictor for post-natal depression, with more than half of the women with antenatal depression also demonstrating post-natal depression in the first year after delivery. Socioeconomic conditions, which were measured through years of education and the number of household assets, were independently associated with the risk of post-natal depression. Additionally, we found that the frequency of contact with neighbors was inversely associated with postnatal depression. Daily contact with neighbors may be a proxy for social support, and there is evidence that the perceptions of the women regarding the social support they received significantly predicted self-esteem and depression.[16]

Some methodological limitations must be acknowledged. Firstly, we used a non-specific instrument to assess both our main exposure and outcome (antenatal and post-natal depression). Some non-differential misclassification is expected in this type of evaluation, which can lead to an underestimation of the association between antenatal and post-natal depression. Secondly, antenatal and postnatal depression were each assessed only once; thus, it was not possible to define whether they represent two distinct episodes or one continuous state from the antenatal period to the post-natal period. Moreover, the long lag time for the postnatal interview allows for the possibility that the episode of postnatal depression may have already ended before the interview occurred. Thirdly, our results are most likely not generalizable to women treated in the private health sector (approximately 35% of the population of Sao Paulo has some form of private health coverage) but are likely to represent approximately 2/3 of pregnant women treated in public primary care clinics in large urban centers in Brazil.

Table 1 Characteristics of the sample, numbers (%) with postnatal depression, crude and adjusted risk ratios, with 95% confidence intervals and p-values (n = 701)

		Number of women	Number (%) with depression		Crude Risk Ratio	(95% CI)	p	Adjusted Risk Ratio*	(95% CI)	p
Age group							0.47			
	16-19	147	47	(31.9)	1			1		
	20-29	388	104	(26.8)	0.83	(0.62-1.11)				
	30-45	166	45	(27.1)	0.84	(0.60-1.19)				
Skin colour							0.79			
	White	327	93	(28.4)	1			1		
	Black/other	374	103	(27.5)	0.96	(0.76-1.22)				
Years of education							< 0.001			0.02
	0-8	326	114	(34.9)	1			1		
	9 or more	375	82	(21.8)	0.62	(0.49-0.79)		0.75	(0.59-0.96)	
Income per capita*							< 0.001			
	0-239	224	75	(33.4)	1			1		
	240-394	232	65	(28.0)	0.83	(0.63-1.10)				
	395-2400	380	52	(21.8)	0.65	(0.48-0.88)				
Marital status							0.74			
	Single/separated	187	54	(28.8)	1					
	Married	514	196	(27.9)	0.95	(0.73-1.24)				
Previous miscarriage							0.01			0.14
	No	537	138	(25.7)	1			1		
	Yes	164	58	(35.3)	1.37	(1.06-1.77)		1.23	(0.92-1.65)	
Score of goods							< 0.001			0.02
	0-4	217	81	(37.3)	1			1		
	5-8	484	196	(27.9)	0.63	(0.50-0.80)		0.76	(0.61-0.96)	
Previous gestations							0.07			0.70
	1	246	56	(22.7)	1			1		
	2	215	65	(30.2)	1.32	(0.97-1.80)		1.10	(0.81-1.48)	
	3 or more	240	75	(31.2)	1.37	(1.01-1.84)		0.93	(0.66-1.31)	
Obstetric complications							0.30			
Score	No	568	154	(27.1)	1					
	Yes	133	42	(31.5)	1.16	(0.87-1.54)				
Planned pregnancy							0.02			0.09
	No	476	146	(30.6)	1			1		
	Yes	225	50	(22.2)	0.72	(0.54:0.95)		0.79	(0.60-1.03)	
Contact with neighbours							< 0.001			0.007
	Never	125	49	(39.0)	1			1		
	2/3 week	284	78	(27.4)	0.70	(0.52-0.93)		0.78	(0.60-1.02)	
	Daily	292	69	(23.6)	0.60	(0.44-0.81)		0.68	(0.51-0.90)	
Antenatal depression							< 0.001			< 0.001
	No	505	110	(21.7)	1			1		
	Yes	196	109	(55.6)	2.75	(2.18-3.47)		2.44	(1.93-3.08)	

*Risk Ratios adjusted for all other variables presented in the column.

Our results are consistent with data from a British study[8] in which over 50% of depressed mothers had depressive symptoms during pregnancy. In studies conducted in Australia and the United States,[6,7] these figures were 36% and 39%, respectively. However, the prevalence of antenatal depression in our sample was twice as high as those described in such countries, which increases the absolute risk of postnatal depression. The higher prevalence of antenatal depression in developing countries may be explained by the lower socioeconomic conditions of women and the limited access to health care. In our study, socioeconomic variables (assets score and years of education) were associated with postnatal depression, confirming the well-documented association between socioeconomic status and postnatal depression independently of the presence of antenatal depression.[4]

Conclusions

Antenatal and postnatal depression are highly prevalent in the primary care setting, and health professionals involved in the care of pregnant women should be trained to deliver simple and effective interventions as early as possible.

Acknowledgements

The study was funded by FAPESP (2003/08553-7). PRM was partially funded by the CNPq-Brazil. AFC received post-doctoral fellowships from the CNPq-Brazil and FAPESP (2005/04572-2).

Disclosures

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** Modest*
*** Significant*
**** Significant. Amounts given to the author's institution or to a colleague for research in which the author has participation, not directly to the author.*

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