

Paternal postpartum mood: bipolar episodes?

Depressão paterna: episódio bipolar?

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Abstract

Objective: We describe the prevalence of depressive and bipolar spectrum episodes in fathers in antenatal and postnatal periods, as well as at 12 months after childbirth. **Method:** A longitudinal follow-up study was conducted with a representative sample of 739 fathers whose children were born between April 2007 and May 2008 in maternity wards in the city of Pelotas, southern Brazil. Paternal psychopathology was measured with the Mini Neuropsychiatric Interview (MINI) across three time points: between 28 and 34 weeks of pregnancy (T1), 30 to 60 days postpartum (T2), and 12 months after childbirth (T3). **Results:** The prevalence of depressive episodes was 5.0% at T1, 4.5% at T2, and 4.3% at T3. Mixed episodes were present in 3%, 1.7%, and 0.9% of subjects, respectively, and accounted for 61.1% of the cases of depression in the antenatal period, 37.5% in postpartum, and 21.4% at 12 months. Depressive and manic/hypomanic episodes were significantly associated during pregnancy and in postpartum, but not at 12 months after childbirth. **Conclusion:** Bipolar episodes were common in men with depressive symptoms during their partner's pregnancy in the postpartum period and, to a lesser extent, 12 months after childbirth. Therefore, this population should be carefully investigated for manic and hypomanic symptoms.

Descriptors: Depression, postpartum; Fathers; Prevalence; Depression; Bipolar disorder

Resumo

Objetivo: Verificar a prevalência dos episódios depressivos e bipolares em homens no período pré e pós-natal, assim como 12 meses após o parto. **Método:** Estudo longitudinal com amostra de pais cujas crianças nasceram entre abril de 2007 e maio de 2008 em maternidades da cidade de Pelotas-RS, no sul do Brasil. Episódios depressivos e maníacos/hipomaníacos foram mensurados com o Mini Neuropsiquiátrico Interview em três tempos diferentes: entre a 28ª e 34ª semanas de gestação (T1), 30 a 60 dias após o parto (T2) e 12 meses após o nascimento da criança. **Resultados:** A prevalência de episódios depressivos foi 5,0% em T1, 4,5% em T2 e 4,3% em T3. Episódios mistos estiveram presentes em 3,0, 1,7 e 0,9%, respectivamente, e somaram 61,1% de casos de depressão antenatal, 37,5% pós-natal e 21,4% aos 12 meses pós-parto. Episódio depressivo e maníaco/hipomaníaco esteve significativamente associado durante a gestação e o pós-parto. **Conclusão:** Episódios bipolares são comuns em homens com sintomas depressivos durante a gestação de suas companheiras e no período pós-natal. Essa população deveria ser cuidadosamente investigada para sintomas maníacos e hipomaníacos, a fim de ser adequadamente tratada.

Descritores: Depressão pós-parto; Pai; Prevalência; Depressão; Transtorno bipolar

Introduction

Paternal postpartum depression (PPD) has received increasing attention over the last two decades.^{1,2} Some risk factors for PPD have been proposed, including lower social class and unemployment,³ previous history of depression⁴ and having a partner with depressive symptoms.⁵ Moreover, detrimental consequences in parenting behavior⁶ and in child development,² independent of mother's psychopathology,⁴ have been demonstrated in previous reports. Nevertheless, bipolar spectrum disorders (e.g., mania, hypomania, and mixed states)

are often neglected in the current research on paternal perinatal psychopathology.⁷

The aim of our study was to describe the prevalence of paternal mood disorders including depressive, hypomanic, manic, and mixed episodes, across the following time points: between 28 and 34 weeks of pregnancy, between 30 and 60 days postpartum, and in the twelfth month after childbirth. In addition, we sought to determine the extent to which depressive symptoms are associated with manic or hypomanic features in mixed episodes at these three time points.

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Method

A longitudinal follow-up study was conducted with a representative sample of fathers whose children were born in Pelotas, Brazil, between April 2007 and May 2008. Fathers were contacted through pregnant women enrolled in the Brazilian National System of Public Health (*SIS - Pré-Natal*), as well as in two services that are not part of that system. These data cover the prenatal assistance in 38 Basic Health Units, representing the whole of the public assistance within the urban area of Pelotas, which is responsible for delivering care to 51% of all pregnant women in the city.⁸ Only women and partners aged over 18 were enrolled. All fathers fulfilling this criterion were invited to participate, until the estimated sample size was reached. The sample size was established using the EpiInfo 6.4 software, with a reliability of 95% and a power of 80%. We expected a 5% prevalence of depression in men in general, and a 12% prevalence at the postpartum time point (estimated risk of 2.25). The projected sample size required was 739 men.

Visits to the fathers' homes were made at three time points: between 28 and 34 weeks of pregnancy (T1), 30 to 60 days postpartum (T2), and 12 months after childbirth (T3). In all assessments, the validated Portuguese version of the Mini International Neuropsychiatric Interview (MINI),⁹ a structured diagnostic interview, was separately applied to mothers and fathers to detect affective disorders (including depressive, manic, and hypomanic episodes). The psychometric properties of the interview for the screening of affective disorders, using clinical interviews with psychiatrists as a reference, are the following: kappa value of 0.61, sensitivity of 74%, specificity of 87%, negative predictive value of 88%, positive predictive value of 72%, and efficiency of 83%. We defined mixed episodes as episodes in which an individual simultaneously fulfilled the criteria for a depressive and a manic/hypomanic episode. Additionally, the following data were collected using a self-report questionnaire: age, cohabitation status, and socioeconomic status (according to the Economic Classification for Brazil of the Brazilian Association of Population Survey Companies,¹⁰ in which the highest income level is designated "A" and the lowest is "E").

Data entry was performed with the EpiInfo 6.4 software using dual keying and a subsequent consistency check. Statistical analyses were performed with Stata 9 and SPSS 10.0 for Windows. Univariate analyses were performed to assess sample characteristics at the three time points. Associations between paternal psychiatric symptoms and the other variables were investigated with Pearson's chi-square test. Multivariate analyses were used with backward stepwise logistic regression to control for potential confounders when assessing the association between depressive episodes and manic/hypomanic episodes.

This study was approved by the local committee for research ethics (145/2007 CEP-UCPel). Informed consent was gained prior to enrollment in the study, and couples were free to refuse to participate. Data remained confidential and appropriate information management was assured.

Results

Of the 739 fathers eligible at baseline, 726 (98.2%) were assessed at T1, 707 (95.7%) at T2, and 655 (88.6%) at T3. The mean (SD) paternal age was 29.5 (± 8.1) years, 55.1% belonged to socioeconomic class C, and 49% had less than seven years of schooling. Four hundred forty-five (61.3%) of the participants were new fathers, and 81.7% were living with their partners. Non-responders did not significantly differ from responders with regard to sociodemographic variables ($p > 0.05$).

The prevalence of paternal depression was 5% at T1, 4.5% at T2, and 4.3% at T3. Manic episodes arose in 2.1%, 3.4%, and 3.5% of fathers, respectively, whereas hypomanic symptoms occurred in 4.7%, 3.3%, and 0.9% of subjects. Mixed episodes had a prevalence of 3% during the antenatal period, 1.7% at the fourth month postpartum, and 0.9% at 12 months after childbirth. Mixed episodes accounted for 61.1% of the depressive symptoms at the prenatal time point, 37.5% in the first two months postpartum, and 21.4% at 12 months after childbirth. The incidence of depression at T2 in relation to T1 was 3.9%, while the incidence of depression at T3 in relation to T2 was 3.2%. Of these, 80% had mixed episodes at T1 and T2 and 20% had mixed disorders at T1 and unipolar depressive episodes at T2. At T3, chronic/recurrent depression was present in 1.1% of fathers. Of these, 57% had kept the same pattern of episodes, whereas 43% had evolved to mania or hypomania. There was no association between antenatal mood episodes and postpartum depressive episodes ($p > 0.05$).

The results of the multivariate analysis are shown in Table 1. After controlling for possible confounders, depressive episodes were associated with being a new father (RR: 2.89; 95% CI: 1.17-7.14), partner's depression (RR: 4.63; 95% CI: 1.91-11.21), and with experiencing manic/hypomanic episodes (RR: 42.40; 95% CI: 17.49-102.75) at T1. At T2, depressive episodes were associated with partner's depressive episodes (RR: 3.50; 95% CI: 1.53-8.00) and with manic/hypomanic episodes (RR: 8.41; 95% CI: 3.64-19.43). At T3, an association was found with postpartum paternal mood episodes at T2 (RR: 3.65; CI95% 1.30-10.21), and partner's depression was also associated with depressive episodes in fathers (RR: 12.38; CI 95% 5.13-29.85).

Discussion

We are not aware of other studies using clinical interviews to assess postpartum depressive, manic, hypomanic, and mixed symptoms in fathers. The prevalence of paternal postpartum depression was 4.5%, which is within the range reported by other studies,^{2,11} but lower than a previous report in our community.⁵ Methodological dissimilarities may account for these differences, because we used a structured diagnostic interview instead of cut-off points. Maternal depression was significantly associated with paternal depression at all time points, which agrees with a recent meta-analysis.⁸

Depressive and hypomanic symptoms in fathers in the postnatal period were studied by Lane et al.⁷ In their sample,

1.2% of fathers concurrently scored 13 or more in the Edinburgh Postnatal Depression Scale and 8 or more in the Highs Scale, which resembles the prevalence of mixed states at the postpartum time point in our study. However, comparisons should be made with caution because of the small number of cases of depression, the different time points assessed (between 3 days and 6 weeks postpartum), and the diverse diagnostic instruments used in their work.

We found that depressive episodes in fathers were significantly associated with manic/hypomanic episodes during pregnancy and in the postpartum period, whereas this association was not evident in the twelfth month after childbirth. It is possible that delivery acts as a specific event whose effects decrease over time.

The high prevalence of bipolar-related episodes in our sample is noteworthy. Explanations for this finding could rely on the following aspects: (1) this specific period in the lifespan might act as a stressor in association with genetic vulnerability, increasing the risk of highly heritable forms of affective disorders; and (2)

the positive predictive value of the instrument used is between 62% and 89%.⁹ In our view, the MINI seems to be sensitive to symptoms such as irritability, for example, which may increase the prevalence of mania and hypomania. It must be noted that lower rates of mood disorders were found in studies using other diagnostic instruments, such as the Composite International Diagnostic Interview (CIDI).^{12,13} In this sense, given the problem of prevalence fluctuations, we agree with Magalhães & Pinheiro,¹⁴ who emphasize that instruments for psychiatric screening and diagnosis must undergo a deep revision in order to refine their overall accuracy.

Finally, these findings suggest that hypomanic and manic features should be carefully examined in fathers presenting with depressive symptoms, particularly during pregnancy and in the postpartum period. Because there seems to be no association between mood episodes in the antenatal and postpartum periods, they should be regarded as distinct phenomena. Previous mood episodes had only been associated in twelve months indicating this risk.

Table 1 – Multivariate analysis of depressive episodes at 28 to 34 weeks of pregnancy (T1), 30 to 60 days postpartum (T2), and 12 months after childbirth (T3), with relative risks (RR) and 95% confidence intervals (95% CI)

	T1 RR (95% CI)	T2 RR (95% CI)	T3 RR (95% CI)
Age			
Up to 19 years old	1.00	1.00	1.00
20-34 years old	1.93 (0.25-14.89)	1.15 (0.26-5.01)	1.79 (0.23-14.17)
Above 35 years old	2.06 (0.25-17.16)	0.54 (0.10-3.04)	2.16 (0.25-18.71)
Social class			
A and B	1.00	1.00	.*
C	0.76 (0.21-2.78)	1.42 (0.41-4.98)	-
D and E	2.00 (0.57-7.05)	1.17 (0.31-4.50)	-
Living with partner			
No	1.00	1.00	1.00
Yes	0.66 (0.29-1.49)	1.46 (0.50-4.27)	6.36 (0.85-47.49)
New father			
No	1.00	1.00	1.00
Yes	2.89 (1.17-7.14)	0.84 (0.40-1.76)	0.45 (0.21-0.98)
Paternal mood episodes T1			
No	-	1.00	1.00
Yes	-	2.12 (0.63-7.15)	1.98 (0.26-14.96)
Paternal mood episodes T2			
No	-	-	1.00
Yes	-	-	3.65 (1.30-10.21)
Partner's depression			
No	1.00	1.00	1.00
Yes	4.63 (1.91-11.21)	3.75 (1.60-8.75)	12.38 (5.13-29.85)
Paternal mania/hypomania			
No	1.00**	1.00***	1.00†
Yes	42.40 (17.49-102.75)	9.21 (3.90-21.75)	2.66 (0.78-9.04)

* It was not possible to calculate these values given the absence of depressed fathers in social classes A and B.

** Adjusted for partner's depression and new father.

*** Adjusted for partner's depression.

† Adjusted for partner's depression and paternal mood episodes at T2.

Additional research must be conducted to assess the extent to which our findings are replicable in populations with different socioeconomic patterns, as well as to clarify potential risk factors for paternal postpartum mood disorders.

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Disclosures

Writing group member	Employment	Research grant ¹	Other research grant or medical continuous education ²	Speaker's honoraria	Ownership interest	Consultant/ Advisory board	Other ³
Karen Amaral Tavares Pinheiro	-	-	-	-	-	-	-
Fabio Monteiro da Cunha Coelho	-	-	-	-	-	-	-
Luciana de Ávila Quevedo	-	-	-	-	-	-	-
Karen Jansen	-	-	-	-	-	-	-
Luciano de Mattos Souza	-	-	-	-	-	-	-
Jean Pierre Oses	-	-	-	-	-	-	-
Bernardo Lessa Horta	-	-	-	-	-	-	-
Ricardo Azevedo da Silva	-	-	-	-	-	-	-
Ricardo Tavares Pinheiro	-	-	-	-	-	-	-

* 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.

For more information, see Instructions for Authors.

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