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Maternity "Blues": Prevalence and Risk Factors

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Objectives: estimate the prevalence and track the risk factors associated with, Maternity blues (MB).
Methods: a transversal study was performed with 113 women, on the tenth day of puerperium. The following instruments were used: Pitt Scale (1968), Stein (1980), Inventory for stressful life events by Holmes & Rahe (1967), and a questionnaire with sociodemographic and obstetric data.
Results: the prevalence of MB was 32.7% according to the Stein scale. In the univariated analysis, civil status and tobacco use were associated with MB. Legally married women and nonsmokers showed a risk approximately 4 times lower of experiencing the problem.
Conclusions: MB was very prevalent in this sample. Obstetricians must be aware of this condition which may be associated with postpartum depression.
Keywords: postpartum sadness syndrome, postpartum depression

Objetivos: estimar la prevalencia y rastrear los factores de riesgo asociados con la tristeza postparto (TP).
Método: se realizó un estudio transversal con 113 mujeres, en el décimo día del puerperio. Se utilizaron los siguientes instrumentos: Pitt Scale (1968), Stein (1980), Inventory for Stressful Life Events de Holmes & Rahe (1967) y un cuestionario de datos sociodemográficos y obstétricos.
Resultados: la prevalencia de la TP fue de un 32.7% de acuerdo con la escala Stein. En el análisis univariado, el estado civil y el consumo de tabaco se asociaron a la TP. Las mujeres casadas y las no fumadoras mostraron un riesgo aproximadamente 4 veces más bajo de sufrir el problema.
Conclusiones: se encontró una alta prevalencia de la TP en la muestra. Los obstetras deberían estar alerta ante este estado, que puede asociarse con la depresión postparto.

Palabras clave: síndrome de tristeza postparto, depresión postparto

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Puerperium is the period of greatest vulnerability for the woman. Various affective disorders may occur in this period with special attention for puerperal depression and *maternity blues* (MB; Adewuya, 2005; Gale & Harlow, 2003; Seyfried & Marcus, 2003,). In Brazil, MB was also called *síndrome da tristeza do pós-parto* or *postpartum sadness syndrome* (Rhode et al., 1996). Recent revisions approached the complexity of the matter, highlighting its controversial aspects and, principally, its possible association with puerperal depression (Henshaw, 2003).

MB, also called *post-partum blues* in English literature, is characterized by symptoms of irritability, sadness, and a tendency to cry within the tent first days after giving birth (Kennerly & Gath, 1989; Pitt,1973; Rhode et al., 1997; Stein, 1980). According to the various diagnostic criteria, a prevalence of 15% to 80% of puerperal women are admitted (Adewuya, 2005; Gonidakis, Rabavilas, Varsou, Kreatsas, & Christodoulou, 2007; Murata, Nadaoka, Morioka, Oiji, & Saito, 1998; Sutter, Leroy, Dallay, Verdoux, & Bourgeois, 1997; Thalassinos, Zittoun, Roiullon, & Engelmann, 1993), which makes the pathology or phenomenon more prevalent in the pregnancy-puerperium cycle. For some authors, MB is a normal sequel to giving birth; while other authors associate it with greater risk for depression in early or late puerperium (Fossey, Papiernik, & Bydlowski, 1997; Hapgood, Elkind, & Wright, 1988;, Henshaw, 2003). But, still, the absence of valid instruments for diagnosing the problem and research about the emotional state of post-partum mothers in the first days after giving birth, make opportune intervention on the part of the obstetrician difficult. In this review, no national studies approaching the prevalence and risk factors for MB were found.

If, on one side, the absence of clinical characterization and diagnostic criteria for MB limits the interpretation of results that approach its epidemiological aspects, on the other side, its high prevalence reinforces the need for research. In previous work with the same population, we observed a prevalence of around 16% of depressive symptoms and unsatisfactory formal agreement between evaluation instruments for puerperal depression and MB, suggesting that the scales used indicated the existence of two distinct phenomenon, at least, varying intensities of depressive symptoms already in the tenth day of puerperium (Faisal-Cury, Tedesco, Kahhale, Zugaib, & Menezes, 2004).

The objectives of this study are to estimate the prevalence and risk factors associated with MB.

Methods

The methodology was described in detail in another publication that approached puerperal depression (Faisal-Cury et al., 2004). The data regarding MB are presented in this study. A transversal study with 113 women in the tenth day of puerperium was conducted. The initial sample consisted of 172 women in puerperium recruited in a tertiary public hospital in São Paulo, in the first 72 hours after giving birth, between 4/1/1998 and 3/31/2000**.**The inclusion criteria were: puerperal women that had a singleton full term pregnancy, between the ages of 18 and 39 years, married or living with the father of the child, without clinical or obstetric complications, without current or past history of depression or psychiatric treatment, alcoholism or drug addiction; whose newborns were not congenitally disfigured and had Apgar scores higher than 7 in the 5th minute of life. Women who required hospitalization or whose pregnancies were classified as high-risk were excluded. Five patients (3%) were eligible, but refused to participate for personal reasons. One hundred and sixty seven women in puerperium were selected to be interviewed on the tenth day of puerperium, of which 113 (67%) completed the psychological evaluation (study group). The women that did not return on the tenth day of puerperium were similar to those who participated in the study, in all variables studied, except in relation to the habit of smoking. The study group had fewer smokers ($p = 0.017$).

The Pitt Scale (1973) and the Stein Scale (1980) were used for evaluation of MB in this population. The Pitt and Stein scales are self-evaluation instruments, composed of, 12 and 24 items, with a maximum score of 26 and 48, respectively. The items probe information regarding indications of MB. The Pitt Scale investigates sleep, irritability, preoccupation with appearance, appetite, level of happiness, memory, sexual desire, tension, need for support, preoccupation with health, both personal and of the baby, propensity for crying, energy level and confidence. The Stein Scale investigates depression, anxiety, relaxation, propensity for crying, energy level, appetite, somatic symptoms, and if the person slept the night before. The women whose scores were greater than 20 on the Pitt Scale and greater than 8 on the Stein Scale were classified as cases of MB. These scales were developed to evaluate MB, but were never validated (Henshaw, 2003). Translation and revision were outsourced to acquire a Portuguese version of both scales. There was a significant correlation that varied from 58.3% (Pitt) to 79.4% (Stein) in the analysis of the formal concordance between the two versions (English and Portuguese). In the original study, the Pitt Scale presented good reliability and, according to the author, comparison of the scores obtained with scored obtained with another depression evaluation instrument (Hamilton Rating Scale for Depression) demonstrated the validity of the instrument (Pitt, 1968). In the Stein study, the scale also showed good reliability and the scores correlated significantly with scores obtained using another depression evaluation instrument (General Health Questionnaire).

A scale for evaluation of stressful life events was used: the Holmes & Rahe Social Readjustment Scale (1967). It consists of a list of facts and situations of a stressful nature that may have occurred in the life of the person in the last 12 months. A score is attributed to each life event, and, according to the authors, the greater the sum of points, the

greater the risk of becoming ill. In Brazil, the scale was translated to Portuguese by Lipp (1984), having been used in the population that had panic disorder (Savóia, 1995).

A general questionnaire was also used to obtain data which might be associated with MB. The demographic information included information about the couple, including age, religion, employment, personal and family income, ethnic group, duration of the marriage, and tobacco use. The maternal data included information about obstetric antecedents, parity, number of living children at home, abortion, pregnancy planning, and institution where prenatal care was provided. Current obstetric data were investigated, such as gestational age, type of birth, gender, Apgar scores in the first and fifth minute, weight of the newborn, in addition to possible intercurrence with the mother and the newborn up to the tenth day after the birth.

The HCFMUSP medical ethics committee approved the research project. The women that met the inclusion criteria were invited to participate by the lead investigator (AFC) up to 48 hours after giving birth. The socio-demographic and obstetrics data were gathered at the initial interview. On the tenth day of puerperium, the women that returned were subjected to a medical and psychological evaluation and responded to the MB evaluation scales. All participants signed the post-informed consent form.

All variables were categorized. The prevalence of MB, according to the Stein Scale, was estimated, together with the confidence interval. The OR (Odds ratios) and 95% confidence levels were estimated in the evaluation of association between MB and other variables. The chi-square and chi-square tendency tests were used when the categories were ordered, and the Fisher exact test when indicated by statistical analysis. Comparison between the study group and the group of women who did not return was executed using the Mann-Whitney text, chi-square, or Fisher exact test, when indicated. A value of $p < 0.05$ was considered statistically significant. The statistical analysis was performed using the Stat 8 computation program.

Results

The women were predominately white (67.0%), catholic (73.5%) and lived consensually with their partners (61.0%). The average age was 26 years (SD = 3.0)**.** Forty women (35.3%) had had their first child, but 63.7% had two or more living children. The average time of marriage was 5.0 years, and 26.5% of the women were in their first year of marriage, while 30.9% had been married for 6 or more years. Almost half of the women (47.0%) had more than eight years of education. The average monthly income per couple was R$836. Almost half the women (54.4%) were from the city of São Paulo**.** The city of São Paulo is the most populous and developed city in the State of São Paulo, with more than 10 million inhabitants.

The prevalence of MB, according to the Pitt and Stein scales, was, respectively, 30.1% (IC 95%: 21.8% to 39.4%) and 32.7% (24.2% to 42.2%). Table 1 shows the number and percentage of cases of MB, according to the Stein Scale, in relation to each explicative variable. Significant association was found with the variable civil status and smoking habit. Legally married women (OR: 0.26, IC 95% 0.09-0.69, p = 0.004) and nonsmokers (OR: 0.27; IC 95% 0.07:1.07, p = 0.05) showed a risk nearly 4 times lower for MB. The other explicative variables showed no statistically significant association with the outcome.

Discussion

The results from this current study showed that the prevalence of MB is high, and that married women and nonsmokers showed a lower risk. However, this study shows some limitations. First, a longitudinal study would be more indicated to establish causal relationships between risk factors for MB. Second, the inclusion and exclusion do no allow generalization of the result for other groups of women, such as single mothers, adolescents, or women with a prior history of depression, who could be more vulnerable to the emotional disorders of puerperium. Third, the results are based on data from 113 participants, which corresponds to 67.6% of the original sample. The prevalence of PD may be even greater among the women who did not return on the tenth day, since it is possible that depressed women would have greater difficulty in returning for the postpartum appointment. According to data previously published (Faisal-Cury et al., 2004) characterizing the studied population, the greater number of smokers among women that did not return on the tenth day of puerperium reinforces this hypothesis.

One of the greatest limitations for this study of MB is the lack of consensus regarding the clinical framework, and the instrument considered the «gold standard» for diagnosis. Use of an nonspecific instrument (such as scales for tracking depression) or diagnosis based on the presence of symptoms (such as crying for a period of 1 to 3 days immediately following the delivery) render investigation in the field difficult. Guedeney, Bungener, Jouvent, Darbois, and Wildlocher (1990) conducted a critical analysis of the three scales (Kennerly & Gath, 1989; Pitt,1973; Stein, 1980) that evaluate MB, showing that only three symptoms are present in the three instruments: sadness, anxiety, and crying. However, comparing the scales used in this study, it was noted that all three also investigate other symptoms, such as degree of relaxation, appetite, irritability, and memory.

Reports of the incidence of MB vary between authors from different countries, such as Japan, 15% to 50% (Gabeyama, K., Narita, Y., Honda, Y., & Okazaki, Y., 1985; Murata et al., 1998), United States, 27% (Gard, Handley,

Table 1

Total sample, number and percentage of cases of MB, according to the Stein scale, odds ratio, confidence interval 95%, descriptive

Explicative Variable	Total (n)	MB cases (%)	OR	IC (95%)	Descriptive Level
Education *					0.67
Primary school	59	20 (33.9)	1.00		
High School / College	53	16 (30.1)	0.84	0.37 : 1.87	
Number of living children					0.85
1	51	17 (33.3)	1.00		
2 to 3	48	14 (29.2)	0.82	0.34 : 1.94	
4 to 6	14	5 (35.7)	1.11	0.31 : 3.87	
Number of pregnancies					0.34
1	41	11 (26.8)	1.00		
2 to 4	62	21 (33.9)	1.39	0.58 : 3.35	
4 to 8	10	4 (40.0)	1.81	0.41 : 7.87	
Planning of the Pregnancy					0.89
No	68	22 (32.3)	1.00		
Yes	45	14 (31.1)	0.94	0.41 : 2.13	
Ethnicity					0.91
Caucasian	73	23 (31.5)	1.00		
Black or other non- Caucasian	40	13 (32.5)	1.04	0.45 : 2.39	
Religion					0.98
Others	25	8 (32.0)	1.00		
Catholic	88	16 (31.8)	0.99	0.38 : 2.58	
Woman's Income (R$)					0.97
0	65	21 (32.3)	1.00		
1 to 500	31	10 (32.3)	0.99	0.39 : 2.50	
501 to 1800	17	5 (29.4)	0.82	0,27 : 2.80	
Couple's Income					0.85
0 to 1000	86	27 (31.4)	1.00		
1001 to 3800	27	9 (33.3)	1.09	0.43 : 2.75	
Civil Status					0.004
Cohabiting	69	29 (42.0)	1.00		
Married	44	7 (15.9)	0.26	0.09 : 0.69	
Duration of Marriage					0.72
0/1 years	30	11 (36.6)	1.00		
2/6 years	46	15 (32.6)	0.83	0.31 : 2.20	
> 6 years	37	10 (27.0)	0.63	0.22 : 1.83	
Tobacco use					0.05
No	103	30 (29.1)	1.00		
Yes	10	6 (60.0)	3.65	0.93 : 14.2	
Age (years)					0.50
18 to 20	22	6 (22.3)	1.00		
21 to 29	60	22 (36.7)	1.54	0.52 : 4.57	
30 to 38	31	8 (25.8)	0.93	0.26 : 3.23	
Score on the Life Stressing Events scale					0.13
50 to 100	29	5 (17.2)	1.00		
101 to 200	59	21 (35.6)	3.11	0.85 : 8.19	
201 to 354	25	10 (40.0)	3.40	0.86 : 11.8	
*Apgar 1 score**					0.55
3 to 6	13	5 (38.5)	1.00		
7 to 9	99	30 (31.2)	0.69	0.20 : 2.31	
*Newborn Gender**					0.63
Female	53	19 (35.8)	1.00		
Male	59	17 (28.8)	0.72	0.32 : 1.61	
*Gestational Age (weeks) **					0.58
37 to 37.6	6	3 (50.0)	1.00		
38 to 40	61	19 (31.1)	0.45	0.08 : 2.51	
40.1 to 42.1	41	12 (29.3)	0.41	0.07 : 2.43	
Type of Delivery					0.37
Cesarean	60	17 (28.3)	1.00		
Forceps	20	9 (25.0)	2.06	0.71 : 5.99	
Normal	33	10 (30.3)	1.09	0.43 : 2.80	
Postpartum Medical Complications					0.08
No	102	30 (29.4)	1.00		
Yes	11	6 (54.5)	2.88	0.79 : 10.4	
Prenatal [care] location					0.11
HC	87	31 (35.6)	1.00		
Others	26	5 (19.2)	0.43	0.14 : 1.27	

Note. * 112 records, ** 108 records, HC = Hospital Clinics

Parsons, & Waldrom, 1986), France, 31.7% (Lanzick, Brown, & Stump,1992), Nigeria, 31.3% (Adewuya, 2005) and Greece 44.5% (Gonidakis, Rabavilas, Varsou, Kreatsas, &.Christodoulou, 2007)**.** The absence of well defined diagnostic criteria justifies the diversity of results. The temporal relationship between MB and puerperium, generally limited to the first ten days, is highlighted and accepted by the majority of the authors (Gale & Harlow, 2003; Seyfried & Marcus, 2003). The presence of symptoms such as episodes of crying, mood swings, irritability, difficulty in concentration, sadness, feelings of abandonment, worry and tension are also valued (Kennerly & Gath, 1989; Pitt,1973). In the international literature, various studies used the Pitt Scale (Fossey et al., 1997; Thalassinos et al., 1993) and the Stein Scale (Murata et al., 1998).

The diversity of symptoms mentioned in MB may explain the difference in items evaluated by the Stein and Pitt scales. However, according to previously published data, a satisfactory formal agreement was observed between the scales (Faisal-Cury et al., 2004). The prevalence of MB, according to the Pitt and Stein scales, was, respectively, 30.1% and 32.7%, suggesting that , while some women showed certain symptoms (evaluated by one of the scales), other women received the same diagnosis from the other group of symptoms (present in the other scale).

Given the high prevalence, the question remains if many of these women did not previously have depression. Puerperal depression has a significant impact on the mother-child relationship (Gard et al., 1986). For many authors, women with MB present a greater chance of presenting puerperal depression (Henshaw, 2003; Sutter et al., 1997). However, Lanzick et al. (1992) considered MB a separate field from puerperal depressive disorders. In a study conducted in Brazil (Faisal-Cury et al., 2004), with the same sampling of women, a prevalence of 15.9% of depressive symptoms was observed with the Beck Inventory (1961). The agreement between the scales for evaluation of MB and puerperal depression was not satisfactory, suggesting that they are two distinct groups of patients. Patients diagnosed with depression presented more intense symptoms, while the cases of MB may be of a more moderate and possibly transitory nature. The classification of affective puerperal disorders, based on intensity of symptoms, is defended by O'Hara & Zekoski (1988). According to these authors, these disorders vary within a continuum, of cases of MB, more frequent, however light and transitory, to even rare and serious cases of puerperal psychosis. Puerperal depression, with intensity varying from light to moderate, would occupy an intermediary stage between the two above entities.

The lack of association between MB and the obstetric and socio-demographic variables studied reinforced the idea that MB may be a non-specific and transitory image of immediate puerperium. This data agrees with the literature (Hapgood et al., 1988; Henshaw, 2003). There is not consensus in the various studies regarding the specific risk factors for MB. Various studies found no association between MB and socio-economical level (Newnham, Dennett, Aron, Tomlin, Legg, Bourne, & Rees, 1984; Stein, 1980), age, educational level, type of medical care (private or public), and parity (O'Hara, Schlechte, Lewis, & Wright, 1991), as well as other obstetric factors (Murata et al., 1998). However, recent studies suggest and association between non-spontaneous vaginal delivery and broad use of episiotomy (Adewuya, 2005) and cesarean (Gonidakis et al., 2007). The association between MB and unplanned pregnancy, defended by other authors (Condon & Watson, 1987), was not observed in this study.

On the other hand, there is a tendency to value the emotional aspect more connected to MB. Women with a history of dysphoric premenstrual syndrome, neuroticism, anxiety, and depression in pregnancy would have a greater risk of presenting MB (Henshaw, 2003; Kennerly & Gath, 1989). Likewise, pessimistic expectations and ambivalence towards the pregnancy are associated with the problem (Condon & Watson, 1987).

The only exceptions cover the variables that classify civil state and smoking habit. The married women and nonsmokers showed a lower risk for the problem. One might imagine that the stability of a legal marriage would be a protective factor for the appearance of the problem. Coherent with this hypothesis, some authors confirm that a poor marital relationship and inadequate social support are considered to be risk factors for MB (Cheniaux & Correa, 2004; Rhode et al., 1997). Two studies also found an association between MB and civil status (Adewuya, 2005; Lane, Kelville, Morriss, Kinsella, Turner, & Barry, 1997;). In the study from Adewuya a single mother had a 3.5 times greater risk of being a victim of MB. It is interesting to note that, according to previous data in relation to puerperal depression, there was an association with the duration of marriage greater than six years, but not the type of marriage (Faisal-Cury et al., 2004). One can not deny the possibility that type and time of marriage may be associated in different ways with depression and MB. Additionally, other studies demonstrate an association between tobacco use and depression (Brody, Hamer, & Haaga, 2005; Johnson, Rhee, Chase, Breslau, & 2004). However, no studies were found that specifically approached the relationship between MB and tobacco use.

The absence of association between the score on the stressful life event scale and MB is defended by other authors (Kennerly & Gath, 1989; Pitt,1973; Stein, 1980). However, the scale used was not designed specifically for pregnant women or those in puerperium, which might compromise the results. It is possible that women in puerperium, when compared with non-pregnant women, may be more susceptible to various stressful life events. Obviously, delivery and puerperium are stressful life events, by themselves.

Finally, it is fitting to note that the obstetrician may have difficulty in making this diagnosis and dealing with the issue, which is quite frequent, and there may be future repercussions on the wellbeing of the woman. Recent studies highlight the lack of familiarity in obstetricians and gynecologists with depression management (Dietrich et al., 2003). However, some authors suggest that simple interventions, such as discussion of psychosocial aspects during pregnancy, principally with pregnant women with low self-esteem, are effective in the reduction of affective disorders in the first six weeks after giving birth (Matthey, Kavanagh, Howie, Barnett, & Charles, 2004).

This current study demonstrated that the prevalence of MB was around 32%, not associated with obstetric variables, score on the stressful life events scale, or socio-demographic variables, with the exception of marital status. Women in a consensual union have a greater risk of MB. By its high prevalence and possible association with puerperal depression, new studies may clarify it diagnostic, etiological, and prognostic aspects, especially in the sphere of psychology, favoring implementation of preventive measures.

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