

Original article

Prevalence and risk factors for a high level of postnatal depression symptomatology in Italian women: A sample drawn from ante-natal classes

Pietro Grusso^{a,b,*}, Rosa Maria Quatraro^c

^a National Health Service, Azienda ULSS 17 Este, Consultorio Familiare Unit, Italy

^b Department of Gynaecology and Human Reproduction Sciences, University of Padua, Italy

^c National Health Service, Azienda ULSS 6 Vicenza, Hospital Psychology Unit, Gynaecology and Obstetrics Section, Vicenza and Noventa Vicentina Hospital, Italy

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Abstract

Background. – Depression after childbirth is a major problem affecting 10–22% of all mothers. In Italy, postnatal depression has not yet been systematically studied.

Methods. – In this retrospective study we have sought to identify risk factors, assessed during pregnancy, and their importance for postnatal depression symptoms in a sample of 297 Italian women attending ante-natal classes organised by the local Consultorio Familiare Unit of the National Health Service, Italy. The Postpartum Depression Predictors Inventory – revised form (PDPI-Revised), was used to identify risk factors, 8–9 month of pregnancy. A double-test strategy using the Edinburgh Postnatal Depression Scale (EPDS) and 12-item General Health Questionnaire (GHQ12), was administered to screen women with a higher occurrence of symptoms of postnatal depression six–eight weeks after delivery. Women with high EPDS (<8) and high GHQ12 (<3) scores were compared with those who had scored below the EPDS and/or GHQ12 threshold scores.

Results. – We found that 13% of the women studied showed high postnatal depressive symptomatology, which is very similar to rates of prevalence of postnatal depression in the first year after the birth of the child reported in other Western World studies. Feeling anxious during pregnancy is a strong predictor of high symptoms of depression at 6–8 weeks after delivery. However, University education and friends' support appear to be important protective factors.

Conclusion. – These findings could be useful both for Italian health professionals and for researchers interested in the transcultural aspects of postnatal depression.

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Keywords: Postpartum depression; Postnatal depression; Postpartum depression; Predictors Inventory – revised; Edinburgh Postnatal Depression Scale; General Health Questionnaire

1. Introduction

Of all the perinatal affective disorders, postpartum or postnatal, depression is probably the most commonly known. The clinical characteristics of postpartum depression as

defined by the DSM-IV [2] are the same as those of a major depressive episode, with the addition of a time specifier. To meet the DSM-IV diagnostic criteria, symptoms must be present most of the day nearly every day for two weeks, begin within four weeks after delivery, and interfere with the individual's everyday functioning.

In perinatal psychiatry, depressive episodes after childbirth are usually termed “postnatal depression” or, in US English, “postpartum depression”. The period within which a depressive episode is identified as postnatal depression usually runs from the first to the twelfth month after delivery [27,13].

* Corresponding author at: National Health Service, Azienda ULSS 17 Este, Consultorio Familiare Unit, Via Settibile n.39, I-35042 Este (PD), Italy. Tel./fax: +39 0429 618309.

E-mail address: pgruss@tin.it (P. Grusso).

Women with postnatal depression report bad mood, loss of pleasure in all areas of life, inability to cope, loss of energy and libido, fatigue, anxiety, increased irritability and emotional vulnerability, suicidal and compulsive thoughts, despair, feelings of worthlessness and inadequacy, tearfulness, guilt, decreased appetite, feelings of failing as a mother and irrational fears about the baby's or her own health [38,28].

The causes of postnatal depression remain unclear [17], and the precise level of incidence is uncertain. The rate of depression following childbirth ranges from 10% to more than 22% of women, and depends on the assessment method used, the timing of the assessment, and the cultural characteristics of the population [16].

Postnatal depression can have devastating consequences not only for the women experiencing it, but also for the women's children [25,37] and family [35,12]. Because of these serious consequences, mothers who risk developing this mood disorder need to be identified early, preferably during pregnancy, or at least in the period immediately after delivery [46].

Recent studies have suggested that preventive intervention to reduce "probable depression" in the postnatal period may be suitably advisable in cases where there are some psychosocial and psychological risk factors, such as depression in pregnancy, unplanned pregnancy, lack of support from partner or mother [15], or previous history of depression, poor social support, prenatal depression and recent stressful events [60].

However, there are almost no studies that have assessed whether a set of risk factors can be generalised from one population to another or from one setting to another [40]. Moreover, the presence of important differences in postnatal depressive symptomatology found in Western European and Australian samples suggests there is a need to carry out further investigation regarding potential factors that may buffer women from depressive symptomatology in their respective countries/cultures [1].

Research published on English [14,18,58], Irish [32], French [30], Swedish [59,31,51,48], Danish [39], Dutch [57], Austrian [10], and Portuguese women [4] has confirmed that many of the risk factors seem to affect maternal postnatal depressive symptoms in different ways. But in European Community countries, such as Italy, Spain, Belgium, and Germany, risk factors for postnatal depression have, so far, not been studied systematically.

The aim of this study is to find the prevalence and risk factors for a high level of postnatal depressive symptomatology in a sample of Italian women.

2. Materials and methods

This study was conducted in the province of Venice, Veneto Region, in north-eastern Italy.

The data of all women attending ante-natal classes at the *Consultorio Familiare* Unit of San Donà di Piave and Jesolo, Azienda USL 10 "Veneto orientale" of the National Health Service, from September 2002 to September 2004 and who later took part in institutional routine screening for postnatal depression, were retrospectively analyzed. Participation in the

screening was entirely voluntary and free of charge. All women gave their written informed consent.

Inclusion criteria for women to participate in this retrospective study were to be Italian by birth, residence, and culture. Exclusion criteria were to have psychological problems or to be under treatment for psychological problems.

In 2004, in the Veneto Region where this retrospective study was conducted, there was a population of around 4,700,000, 51% of whom were female. Additionally, in the same year, there were 180 ethnic groups in the Region, coming primarily from Morocco, Romania and Albania. In particular, just over 46,000 births were registered, and of these, some 18% were attributed to mothers of foreign citizenship [45].

Therefore, a total of 297 consecutive women attending ante-natal classes met the inclusion criteria. Their mean age was 32.5 years old (SD = 3.9).

Table 1 shows the socio-demographic characteristics of participants.

Table 1
Socio-demographic Variables of Participants.

Women characteristics	High-PND group		Low-PND group		Missing
	n	%	n	%	
Parity					1
Primiparous	36	92.3	232	90.3	
Multiparous	3	7.7	25	9.7	
Mode of delivery					9
Spontaneous delivery	22	61.1	198	78.6	
Caesarean section	10	27.8	43	17.1	
Instrumental delivery	4	11.1	11	4.4	
Age					1
<25	1	2.6	2	.8	
25–35	23	59.0	188	73.2	
>35	15	38.5	67	26.1	
Marital status					1
Single	1	2.6	1	.4	
Married/cohabitating	37	94.9	245	95.3	
Divorced	0	0.0	0	0.0	
Widowed	0	0.0	0	0.0	
Partnered	1	2.6	11	4.31	
Socio-economics status					1
Low	1	2.6	6	2.4	
Middle	38	97.4	249	96.9	
High	0	0.0	2	.8	
Education					10
Elementary and Middle school	13	34.2	43	17.3	
High school	18	47.4	164	65.9	
University	7	18.4	42	16.9	
Occupational status					11
Homemaker/student	2	5.4	19	7.6	
Outside work	35	94.6	230	92.4	
Unemployment	3	7.7	16	6.3	2

High-PND group = women who scored above EPDS and GHQ12 cut-off levels.

Low-PND group = women who did not score above EPDS and GHQ12 cut-off levels.

The institutional review board of the *Consultorio Familiare* Unit approved this retrospective study. Personal data were processed in conformity with the Italian Data Protection Act.

2.1. Procedure

At 8–9 months of pregnancy, all women completed the Postpartum Depression Predictors Inventory form revised (PDPI-Revised) [8] concerning risk factors for postnatal depression. The Italian version of PDPI-Revised utilized in the *Consultorio familiare* Unit was translated by two professional translators, both of whom are native speakers of both Italian and English.

After the birth of the child, mothers with higher levels of postnatal depressive symptomatology were identified using a double-test strategy [33,26] characterized by the simultaneous compilation of both the Edinburgh postnatal depression scale (EPDS) [19] and the General Health Questionnaire 12-item GHQ12 [24]. This strategy improved positive predictive value and reduced the number of false-positive results when screening for postnatal depression [33].

Six to eight weeks after delivery, the women were asked to complete the Italian versions of the EPDS translated and validated by Benvenuti et al. [9], the GHQ12 translated and validated by Piccinelli et al. [44], and the POMS [36], and to fill in a brief questionnaire asking for information about the delivery itself. These questionnaires were sent by mail to each woman's home with a request to complete them as soon as possible and to return them, using the pre-paid enclosed envelope addressed to the *Consultorio Familiare* Unit.

The data gathered from POMS were analyzed elsewhere [26].

Like Lee et al. [33], we too considered all women who scored above EPDS and GHQ12 cut-off levels as showing high symptoms of postnatal depression: they form our high-PND group. This group of women was then compared with the other new mothers who had not scored above the EPDS and the GHQ12 cut-off levels. These make up the low-PND group.

From the outset, no woman attending the ante-natal course has ever refused to participate in the screening project. Furthermore, over 90% of the mothers who received the questionnaires six to eight weeks after delivery responded as requested.

2.2. Instruments

The PDPI-Revised is derived from a meta-analytic review [7] that identifies 13 risk factors significantly related to postnatal depression [8]. The questionnaire is administered by a clinician or professional interviewer. The PDPI-Revised does not calculate any cut-off score that identifies women as being more or less at risk, but assesses the presence of significant risk factors. The first 10 risk factors of the inventory can be assessed during both the ante-natal and the postpartum period. These include marital status, socio-economic status, self-esteem, prenatal depression, prenatal anxiety, unplanned pregnancy, history of depression, social support, marital satisfaction, and life stress. The PDPI-Revised contains an

additional set of questions that are designed to assess for three further risk factors after delivery that have not been considered in routine institutional screening for postnatal depression by the *Consultorio Familiare* Unit

The EPDS is a 10-item self-administered scale with four possible responses and a total score from 0 to 30. This questionnaire identifies some common symptoms of clinical depression: e.g., depressed mood, lack of interest, sense of guilt, anxiety and fear of hurting oneself [19]. It is, currently, one of the questionnaires most often administered to identify women with a high probability of already having postnatal depression [20].

In the community screenings, the best cut-off to identify Italian women with a diagnosis of a severe or moderate major depression episode is 8/9, with a 94.4% sensitivity, 87.4% specificity and 58.6% positive predictive value [9].

In this retrospective study, we too used 9 and higher as the EPDS cut-off.

The GHQ12 contains 12 items of the original 60-items GHQ version that evaluate psychiatric morbidity using a four-level alternative response scale. The total score of GHQ12 varies from 0 to 12 [23,24].

Of all the GHQ versions, the 12-item GHQ is the most widely used as it is the most efficient screening instrument when other measures and/or data, have to be gathered in the early stages of a survey, and when limited time precludes the use of longer GHQ versions [44].

In the general population, the Italian GHQ12 version has shown 92% sensitivity, 41% specificity and 35% positive predictive value at the optimal cut-off score of 3/4 [44].

In this retrospective study, the GHQ12 was used and scored in a bimodal fashion (0–0–1–1), with 4 and higher as the cut-off.

2.3. Statistical methods

The Log-linear model and χ^2 test were used to assess associations between a high level of postnatal depressive symptomatology and categorical risk factors. Logistic regression was used when multiple variables were considered simultaneously. Odds ratios (OR) were presented with 95% confidence intervals (CI). Statistical significance was defined as two-sided *P* values using a significance level of 5%. Analyses were conducted using the BMDP 4F Biomedical Package [11] and the Statistical Package SPSS for Windows 11.0 [54].

3. Results

A total of 297 consecutive women attending ante-natal classes met the inclusion criteria. Regarding socio-demographic characteristics and risk factors for postnatal depression, the 26 consecutive attendees of this retrospective study who did not complete the EPDS and GHQ12 six to eight weeks after delivery were not significantly different from those who did complete the questionnaires.

For the double-test strategy proposed by Lee et al. [33], the sample of 297 women was divided into two groups: high-PND group and low-PND group.

The high-PND group was made up of 39 subjects, 13% of the total sample.

Table 1 shows the socio-demographic characteristics of the two groups of women.

Overall, as it is clear from the data in Table 1, most of our sample was made up of primipara women, aged between 25 and 35 years, who had had a spontaneous delivery, were married or cohabitating, were of middle class socio-economic status, had completed high school and were usually in steady employment.

The high-PND group of women was compared with the low-PND group on fourteen categorical variables: marital status, socio-economic status, self-esteem, prenatal depression, prenatal anxiety, unplanned pregnancy, history of depression, social support, marital satisfaction, life stress, occupation, parity, education, and mode of delivery.

The categorical variables called marital status, socio-economic status, self-esteem, occupation, and parity were excluded because they presented more than 90% frequency. Therefore, the log-linear model and χ^2 test were used to compare the two groups of women on the remaining nine factors.

Table 2 shows the differences between the high-PND group and the low-PND group of women by categorical variables.

The data reported in Table 2 reveal significant differences between the high-PND and low-PND groups as regards: education, prenatal anxiety, social support, moving as a stressful event, and mode of delivery.

The association between each categorical variable and high level of postnatal depression symptomatology was calculated

using logistic regression. This analysis revealed three risk factors for a high level of postnatal depressive symptomatology: education, prenatal anxiety, and support from friends.

Table 3 shows the risk factors for a high level of postnatal depression symptomatology revealed through logistic regression.

4. Discussion

We retrospectively analyzed the prevalence of a high level of postnatal depressive symptomatology and relative risk factors in Italian women (identified by birth, residence and culture). The study population was made up of 297 mothers who took part in routine institutional screening for postnatal depression at their local *Consultorio Familiare* Unit of the National Health Service.

Like Lee et al. [33], we too considered all women who scored above EPDS and GHQ12 cut-off levels as showing higher levels of postnatal depressive symptomatology: they form our high-PND group. The risk factors of postnatal depression of this group of women were compared with the risk factors of other new mothers who had not scored above the EPDS and the GHQ12 cut-off levels, called the low-PND group.

Using this double-test strategy by EPDS and GHQ12 [33] we found that 13% of the women studied showed higher levels of postnatal depressive symptomatology at 6–8 weeks after delivery, which is very similar to rates of prevalence of postnatal depression in the first year after the birth of the child reported in research carried out in other western countries [22,42].

Compared to women with a lower level of postnatal depressive symptomatology, the high-level group reported fewer years in full-time education, lower levels of support from family and friends and fewer spontaneous deliveries. During pregnancy, the group with higher levels of depressive symptomatology also reported a higher occurrence of the stressful event of moving and feeling anxious.

Education, prenatal anxiety, and friends' support, were identified as significant risk factors for a high level of postnatal depressive symptomatology. In particular, feeling anxious during pregnancy tripled the likelihood a mother would also suffer from high depressive symptomatology in the postnatal period. However, University education and the opportunity to confide in friends were both important protective factors. Indeed, women with university or equivalent qualifications were less than half as likely to suffer from a high level of depressive symptomatology after the birth of their child. In others words, the women with higher levels of postnatal depressive symptomatology had a lesser chance of having had a university education than those with a low level of postnatal depressive symptomatology. However, the "best protected" of all were women who felt they could freely confide in friends from whom they were sure they would receive understanding and help: indeed, these women are less than one-third as likely to suffer from high levels of postnatal depression symptomatology.

The data used in our study confirmed the results of other, earlier research on risk factors which consistently found that

Table 2
Differences between the high-PND and low PND group of women by Log-linear model and χ^2 test.

Variables	High-PND group		Low PND group		χ^2	Log-linear model
	n	%	n	%		
Education						$p < .05$
Elementary and Middle school	13	34.2	43	17.3		–
High school	18	47.4	164	65.9		–
University	7	18.4	42	16.9		–
Prenatal anxiety	28	71.8	110	42.8		$p = .001$
Social support						
Can be confided with own family	31	79.5	235	91.4		$p < .05$
Can be confided with own friends	24	61.5	220	85.6		$p = .001$
Life stress:						
Moving	13	33.3	44	17.2		$p < .05$
Mode of delivery						$p = .05$
Spontaneous delivery	22	61.1	198	78.6		$p = .05$
Caesarean section	10	27.8	43	17.1		–
Instrumental delivery	4	11.1	11	4.4		–

High-PND group = women who scored above EPDS and GHQ12 cut-off levels.

Low-PND group = women who did not score above EPDS and GHQ12 cut-off levels.

Table 3
The risk factors of different levels of postnatal depression symptoms by maternity characteristics.

Women characteristics	High PND group		Low PND group		Missing	OR	P
	n	%	n	%			
	Education						
Elementary and Middle school	13	34.2	43	17.3		1.00 (ref.)	
High school	18	47.4	164	65.9		1.51 (0.44–5.23)	
University	7	18.4	42	16.9		0.43 (0.14–1.32)	
Prenatal anxiety	28	71.8	110	42.8	1	3.23 (1.27–8.19)	<.05
Social support							
Can be confided with own friends	24	61.5	220	85.6	1	0.26 (0.10–0.69)	<.01

High-PND group = women who scored above EPDS and GHQ12 cut-off levels.

Low-PND group = women who not scored above EPDS and GHQ12 cut-off levels.

anxiety during pregnancy was a strong/moderate significant predictor of postnatal depression [42,7,47].

Our results for the link between postnatal depression symptoms and support from friends also confirm the results from other studies carried out in Europe. These studies have covered topics such as: lack of perceived support from members of the woman's primary group and of support in relation to the event of becoming pregnant [14]; perceived social isolation during pregnancy [39]; and, lack of social support [51] as risk factors for a high level of postnatal depression symptomatology or postpartum depression.

In particular, our results confirm the conclusions of earlier studies which have found that the lack of a suitable confidant and/or low levels of support from this confidant, are associated with postpartum depression [43,41,55]. However, recent studies on women with a low level of education and low socio-economic status have found that social isolation – perceived or real – from family, friends, or partner is strongly associated with postpartum depressive symptoms [49,50].

As regards Italy, we know that current social and cultural changes are also changing the structure of the family from the traditional patriarchal extended model to a smaller and smaller, nuclear family [29]. This change from extended to nuclear family has probably led many pregnant women and new mothers to turn to friends and acquaintances rather than, as before, to older female family members, for help and support. Perhaps for this reason, our results show that one of the most important risk factors for depressed mood in the postnatal period is when a woman has no affective bonds outside of the family or when such bonds are weak.

However our results concerning level of education did not agree with those of a large section of the literature on the risk factors for postnatal depression [42,7,47]. But one recent European study [56] has also identified fewer years of education as a risk factor for postnatal depressive symptoms.

However, studies on the relationship between level of education, common mental disorders and psychosocial health often produce conflicting results [5,3,52]. Indeed, the close links between education, employment status, income, and socio-economic position, make it very difficult to quantify and contextualise educational level. This is particularly true if one considers that, in some situations, the physician's influence and practices regarding a patient's physical and mental health status will be substantially affected by the patient's level of education [21]. However, as our research data show, among women of parallel socio-economic status, those with university-level education are less likely to suffer from higher levels of postnatal depressive symptomatology.

But our study does have its limits. Firstly, the sample was not representative of the general population; it was a pre-selected sample of women who attended ante-natal classes at the local *Consultorio Familiare* Unit of the National Health Service. These women were already more able to take advantage of the services offered by the local health authorities and tended to be oriented towards the de-medicalization of pregnancy, natural delivery and breast-feeding [6]. Furthermore, ante-natal classes improve women's knowledge and competence [53] and it would be interesting to see whether, after the birth of the child, there is a difference in severity of postnatal depressive symptoms between attendees and non-attendees. Future research could identify the perinatal interventions which might reduce postnatal depression and improve the mental health of women [34], and the influences of access to health care on the impact of women's experiences with postnatal depression [1].

Moreover, the double-test strategy by EPDS and GHQ12 is a screening modality. Thus the risk factors we identified as leading to a higher level of postnatal depressive symptomatology at six to eight weeks after delivery may well not be confirmed by a study that uses accurate diagnostic criteria. Therefore, interpretation of the data should be confined to women's experiences with depressive symptoms and not the diagnosis of clinical depression.

In conclusion, we have seen that, in north-eastern Italy, a high level of depression symptomatology in the postnatal period is a major public health problem and significantly related to education, feeling anxious during pregnancy and friend support. Informing local health professionals and social workers about these issues is important in order to improve the maternity and family health care they offer.

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