

# Perinatal and postpartum depression: from attachment to personality. A pilot study

*Depressione perinatale e nel postpartum: tra attaccamento e personalità. Uno studio pilota*

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## Summary

### Objectives

The perinatal period is associated with an increased risk for affective disorders, with consequences on mother's interaction with the newborn baby and on child development. The prevalence of postpartum depression (PPD) ranges between 10 and 20% in the general population. This study investigates the prevalence of perinatal depression and the role of socio-demographic variables, personality structure and maternal attachment style in PPD in order to identify potential primary and secondary prevention strategies.

### Methods

Data were collected in two phases. During the third trimester, a sample of 253 women completed a Socio-demographic Data Sheet and the Edinburgh Post-natal Depression Scale (EPDS). Among patients scoring 12 or more at EPDS, 22 entered the second phase of the study and were compared with healthy controls. Diagnosis of PPD was confirmed by the Structured Clinical Interview for DSM-IV Axis I Disorders (SCID-I), and both groups completed the Experience in Close Relationship (ECR) and Minnesota Multiphasic Personality Inventory 2 (MMPI-2) questionnaires.

### Results

The overall prevalence of depressive symptoms based on the

EPDS score (cut-off  $\geq 12$ ) was 19.3% in perinatal period, according to literature data. The presence of depressive symptoms was significantly associated with previous psychiatric disorders ( $\chi^2 = 12.8, p < 0.01$ ), family history of psychiatric disorders ( $\chi^2 = 4.5, p < 0.05$ ), family conflict ( $\chi^2 = 5.9, p < 0.05$ ), dissatisfaction with partner ( $\chi^2 = 11.5, p < 0.01$ ), economic difficulties of partner ( $\chi^2 = 5.9, p < 0.05$ ), inadequate family support ( $\chi^2 = 4.1, p < 0.05$ ) and inadequate partner support ( $\chi^2 = 6.7, p = 0.01$ ). Postpartum depressive symptoms were associated with an insecure attachment style (ECR anxious and avoidant attachment scores:  $\chi^2 = 4.7, p < 0.05$  and  $\chi^2 = 5.9, p < 0.05$ ) compared to healthy controls. In 60% of depressed mothers, the MMPI-2 revealed specific patterns such as a "4-6 configuration", known as "Passive-Aggressive Valley": it reveals individuals demanding and over-identified with the traditional feminine role, with high levels of dependence, unexpressed hostility and poor coping strategies.

### Conclusions

An approach to post-natal affective disorders that includes psychological factors such as personality structure and attachment style could improve prevention and therapeutic strategies, and provide depressed mothers with specific interventions.

### Key words

Attachment • Personality • Postpartum depression

## Introduction

Maternity is a highly vulnerable period in which there are many transformations from physical, psychological and relational points of view, which implicate a profound reorganization not only of the external reality, but especially in the psychological world of the mother<sup>1</sup>. From the beginning of pregnancy, the woman experiences a transformation of her affective and representational state, a sort of 'identity crisis' that allows her, through a lengthy and gradual process, to create a suitable space in which

to contain a mental representation of her as a parent and the idea of a child<sup>2</sup>.

In acquiring the role of mother, which involves the ability of mirroring and understanding the needs of the newborn, the new mother experiences a regressive period that brings her into contact with the emotions of her childhood<sup>3</sup>, with the re-emergence of the dependency relationship with her mother and the reactivation of conflicts and feelings experienced in that period. Based on how those experiences were lived and elaborated, the woman will shape her new motherhood. In

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this light, the transition to parenthood requires considerable psychological adaptation and reorganization of interpersonal relationships including those with her partner: during this transition, some women can develop affective disorders of varying intensity.

Postpartum psychiatric disorders have been the subject of growing interest in the last years by the international scientific community: in particular, postpartum depression is seen as a public health problem due to its high incidence and potential consequences on the health of the mother and the quality of the mother-child relationship<sup>4</sup>. The latest estimates report that 10-20% of new mothers will be affected by depressive symptoms during pregnancy and in the postpartum period<sup>5</sup>, and as such is one of the most common complications during pregnancy and puerperium<sup>6</sup>.

Apart from diagnostic categories, postpartum depression presents as an insidious disease, with manifestations that are not always immediately identifiable as mood disorder. Altered mood is not necessarily the first or the most important symptom manifested by these patients, but it is often preceded by anxiety, emotive lability, sleep disturbance, fatigue and irritability<sup>7</sup>. Low self-esteem is also frequent, along with low confidence in parenting skills and a deep sense of guilt and shame for being depressed, as motherhood is usually an event recognized by society as positive and a source of joy.

The problematic nature of motherhood can be further aggravated when considering how often women present with obsessive thoughts of aggression toward the child, which is more frequent than in classical depression<sup>8</sup>. In parallel, even intentional self-harm is an alarming aspect in these patients: in a study in 2001, at 8 weeks following childbirth 5.4% of women harboured suicidal ideas as rated by the Edinburgh Postnatal Depression Scale<sup>9</sup>, while in a report in 2005 in the UK, suicide was the second most common cause of death in depressed mothers in the first 12 months after giving birth<sup>10</sup>.

In recent years, however, studies have been concentrated on the effects of this pathology on the quality of the mother-child interaction, on affective<sup>11</sup> and cognitive development<sup>12,13</sup> of the child and the impact of the partner's relationship. Among the factors of risk and protection that appear to influence the course of postpartum depression, some investigations have highlighted the presence/absence of previous psychopathologies<sup>14</sup> and the role of family and social activities: in particular, it has emerged that conflict with family and partner are major risk factors<sup>15</sup>.

New evidence has also emerged regarding the style of maternal attachment in vulnerability to postpartum depression: from this research, it has been shown that an insecure type of attachment seems to be highly correlated with severity of symptoms in women with postpartum de-

pression<sup>16</sup>. Bifulco et al., in a prospective study in 2004, demonstrated that an avoidant attachment style is associated with depressive disturbances before birth, while an anxious style is more frequent in women that develop postnatal depressive symptoms<sup>17</sup>. Several studies<sup>18,19</sup> that have applied the attachment theory to psychopathological disorders in puerperium have demonstrated that women with an insecure attachment style have a higher risk of developing an affective disorder after giving birth. Moreover, it is likely that a combination of personality traits renders women more vulnerable to developing depressive disturbances in puerperium. Studies carried out to date have shown an association between depressive postnatal symptoms and several personality disturbances, and in particular with obsessive-compulsive disorder, dependent and avoidant disorders, together with the prominent characteristics of fear in interpersonal relationships, anxiety and lack of assertiveness<sup>20,21</sup>, and with borderline personality disorder<sup>22</sup>.

Considering the above, the aim of the present study is to evaluate the prevalence of perinatal depression in the general population, and to assess possible psychosocial risk factors, personality traits and maternal attachment styles, in order to allow early primary and secondary intervention aiding the mother and supporting parenting skills.

## Materials and methods

### Study population

The study initiated with a screening phase carried out on all women in the third trimester followed at the Department of Gynaecology and Obstetrics at the Umberto I Hospital in Rome. Exclusion criteria included lack of informed consent, age less than 18 years, diagnosis of mental retardation or schizophrenia, poor knowledge of Italian or other limitations in verbal communication that compromised the ability of the subject to follow the research protocol. Subjects who were positive at screening were contacted by telephone and invited for clinical evaluation, which was carried out after child birth. Subjects that accepted the clinical interview, and with a diagnosis of postpartum depression (PPD), were enrolled in the PPD arm and compared with a control group (C), composed of mothers with a similar age and analogous socio-personal characteristics.

Screening and enrolment of patients started in March 2010 and is still on-going; the first data analysis was carried out in November 2010, from screening 253 pregnant women, and is based on a sample of 22 women with PPD and 22 healthy control subjects, all of whom underwent the entire study protocol. Before enrolment in the study, each participant was informed about the nature and ob-

jectives of the research; enrolment was voluntary and informed consent was obtained both verbally and written. In the present report only a part of the data obtained is presented, and also considering the small number of subjects, the study should be considered preliminary but may help to provide thoughts for the continuation of the research.

### Assessment tools

In the screening phase, all patients visiting the day clinic of the Department of Gynaecology and Obstetrics who provided informed consent were administered the following:

- *Data collection form*: semi-structured interview to collect information on socio-demographic aspects, details of the pregnancy, previous psychiatric disturbances of the patient and family, previous psychiatric treatments, presence of stress factors and social support;
- *Edinburgh Postnatal Depression Scale (EPDS)*: a self-administered questionnaire composed of 10 items that explores the presence of depressive symptoms during pregnancy and puerperium. A value  $\geq 12$  indicates moderate to severe major depression<sup>23,24</sup>. The questionnaire has excellent sensitivity and specificity.

Subjects who had an EPDS score  $\geq 12$  were contacted by telephone and evaluated during a clinical visit with the Structured Clinical Interview for DSM-IV Axis I Disorder (SCID-I, Clinical Version), which is a semi-structured interview used to diagnose Axis-I disorders according to DSM-IV criteria<sup>25</sup>. Subjects who, according to the SCID-I, were diagnosed with major depressive disorder were enrolled in the study group and compared to a group of control subjects. Subjects in the control group were recruited in a randomized manner (one of every five) among subjects having an EPDS score  $< 12$ . These women were also invited for a clinical interview during which the presence of other Axis-I disorders was excluded using the SCID-I.

Participants in both groups were also administered the following:

- *Minnesota Multiphasic Personality Inventory 2 (MMPI-2)*: a non-projective test to study personality characteristics composed of 566 true/false items<sup>26</sup>;
- *Experience in Close Relationship (ECR)*: a self-administered questionnaire composed of 36 questions<sup>27</sup> that assess the style of attachment and relationships in respect to the dimensions of Anxiety (concern for romantic relationships, fear of rejection and abandonment) and Avoidance (difficulty and hardships in approaching, trusting and depending on others). By combining the scores in the two dimensions, also conceptualized as Model of self (Anxi-

ety) and as Model of others (Avoidance), with reference to underlying cognitive schemes, it is possible to assign one of four attachment styles: secure (low anxiety, low avoidance), preoccupied (high anxiety, low avoidance), dismissing (low anxiety, high avoidance), fearful (high anxiety, high avoidance)<sup>28</sup>. The questionnaire has a high level of validity, reliability and internal consistence.

### Statistical analysis

Data were analysed using the Statistical Package for Social Science (SPSS) for Windows version 17.0. Firstly, descriptive analysis was carried out, examining the data collected on socio-demographic variables (age, marital status, living together, years of schooling and employment), pregnancy (weeks of gestation, number of pregnancies, presence of obstetric complications), psychiatric history (previous disorders, hospital admissions, specialist visits, treatment with drugs or psychopharmacological agents, previous peri-partum disorders), stressful life events for the patient or partner (guardianship, adoption, separation or divorce of parents, conflicts with family, mourning, severe disease or accidents in family or patient, prolonged hospitalization, loss of employment, economic difficulties, housing problems, previous separation or divorce, conflicts with partner, abortions), and anticipated support.

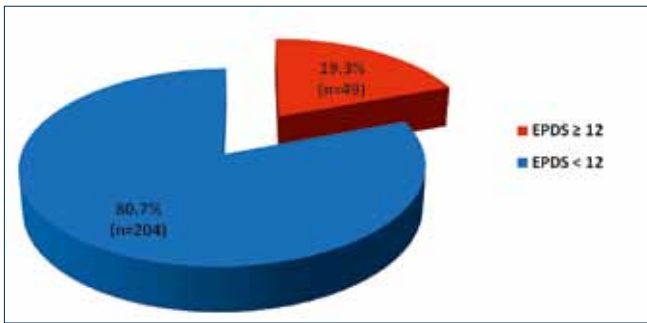
Considering these variables and the scores obtained on the Anxiety and Avoidance scales of the ECR, the two groups were compared using Pearson's chi-square test ( $\chi^2$ ) to determine differences between groups. A p value  $\leq 0.05$  was considered statistically significant.

## Results

### Descriptive analysis of the study population

Of the 253 women who underwent screening, 49 (19.3%  $\pm$  5.1) had a score  $\geq 12$  on the EPDS, which is in good agreement with literature data (Fig. 1). Of the 49 subjects who were positive by screening and contacted by telephone, 22 accepted to attend a clinical visit, during which a diagnosis of major depression was confirmed. After enrolment, these subjects were compared to a control group. Subjects in both groups completed all tests administered.

The PPD and control groups were largely homogeneous for age and number of pregnancies: in the study group the mean age was  $37 \pm 3.8$  years compared to  $34 \pm 5.2$  years in the control group; 61.9% and 72.7% of women in the PPD and control groups, respectively, were undergoing the first pregnancy. None of the women in either group had undergone in vitro fertilization. Complications during pregnancy were reported in 28.6% of women with



**FIGURE 1.** Prevalence of perinatal depression in general population (n = 253). *Prevalenza nella popolazione generale della depressione perinatale (n = 253).*

**TABLE I.** Descriptive analysis of both groups compared: variables related to pregnancy. *Analisi descrittiva dei due gruppi a confronto: variabili legate alla gravidanza.*

	Patients with PPD (n = 22)	Controls (n = 22)
Mean age (years)	37 (± 3.8)	34 (± 5.2)
First pregnancy (%)		
Yes	61.9	72.7
No	38.1	27.3
Complications during pregnancy (%)		
Yes	28.6	22.7
No	71.4	72.7

PPD and by 22.7% of those in the control group. Table I summarizes the main characteristics of the two groups. Family history for psychiatric disturbances was reported in 68.2% of women with PPD, while it was referred by only 36.4% of those in the control group. In the group with PPD, 63.7% had a positive personal anamnesis for psychiatric disturbance: 35.7% referred a previous mood or depressive disorder, 35.7% previous anxiety disorder and 28.6% a previous eating disorder (Tab. II). In the PPD group, 47.6% also referred to have had a previous psychiatric examination, 54.5% reported previous pharmacological therapy and 45.5% had previous psychotherapy (Tab. III). In the control group, 3 subjects reported

**TABLE III.** Personal psychiatric history of both groups compared. *Anamnesi psichiatrica personale dei due gruppi a confronto.*

Psychiatric anamnesis		
	Patients with PPD (n = 22)	Controls (n = 22)
Previous psychiatric visit (%)		
Yes	47.6	9.1
No	52.4	90.9
Previous pharmacological therapy (%)		
Yes	54.5	9.1
No	45.5	90.9
Previous psychotherapy (%)		
Yes	45.5	13.6
No	54.5	86.4

**TABLE II.** Personal and family psychiatric history of both groups compared. *Anamnesi psichiatrica personale e familiare dei due gruppi a confronto.*

	Patients with PPD (n = 22)	Controls (n = 22)	$\chi^2$ test	p-value
Family history (%)				
Yes	68.2	36.4	4.5	0.035*
No	31.8	63.6		
Personal anamnesis (%)				
Yes	63.7	13.6	12.8	0.005**
• Mood disorder	35.7	0		
• Anxiety disorder	35.7	33.3		
• Eating disorder	28.6	66.6		
No	36.3	86.4		

\* p < 0.05; \*\* p < 0.01.

**TABLE IV.**Stressful life events of both groups compared. *Eventi di vita stressanti nei due gruppi a confronto.*

	Patients with PPD (n = 22)	Controls (n = 22)	$\chi^2$ test	p-value
Conflict with family (%)				
Yes	40.9	9.1	5.9	0.015*
No	59.1	90.9		
Conflict with partner (%)				
Yes	50	4.5	11.5	0.001**
No	50	95.5		
Partner in economic difficulty (%)				
Yes	33.3	4.5	5.9	0.015*
No	66.7	95.5		
Family support (%)				
Yes	59.1	86.4	4.1	0.042*
No	40.9	13.6		
Support of partner (%)				
Yes	50	86.4	6.7	0.01**
No	50	13.6		

\* p &lt; 0.05; \*\* p &lt; 0.01.

previous pharmacological therapy and 4 referred prior psychotherapy.

Conflicts with family and partner were more frequent in the PPD group, reported in 40.9% and 50% of cases, respectively. Moreover, fewer women with PPD had trust in help from family (59.1%), and only half of patients counted on support from their partner in the weeks following birth. In comparison, 86.4% of women in the control group claimed to have support from both family and partner (Tab. IV).

#### *Evaluation of psychosocial risk factors*

The presence of depressive symptoms in the perinatal period was significantly associated with several factors: positive personal anamnesis for psychiatric disturbance ( $\chi^2 = 12.8$ ,  $p < 0.01$ ), family history for psychiatric pathologies ( $\chi^2 = 4.5$ ,  $p < 0.05$ ), conflicts with family ( $\chi^2 = 5.9$ ,  $p < 0.05$ ) or partner ( $\chi^2 = 11.5$ ,  $p < 0.01$ ), economic difficulties of their partner ( $\chi^2 = 5.9$ ,  $p < 0.05$ ) and, lastly, with poor perceived support by family ( $\chi^2 = 4.1$ ,  $p < 0.05$ ) and partner ( $\chi^2 = 6.7$ ,  $p = 0.01$ ) (Table IV).

#### *Evaluation of the style of attachment*

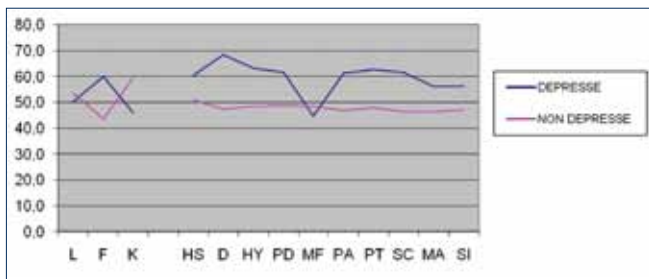
Considering the assessment by ECR, 45% of women with PPD had a secure attachment style, compared to 82% in the control group, while 55% of those with PPD had an insecure style: 15% dismissing, 10% preoccupied

and 30% fearful. In the present study, PPD was significantly associated with the Anxiety dimension ( $\chi^2 = 4.7$ ,  $p < 0.05$ ), which is indicative of preoccupation for sentimental relationships and fear of abandonment, and with the Avoidance dimension ( $\chi^2 = 5.9$ ,  $p < 0.05$ ), indicative of difficulty in approaching and trust of partner, as previously reported in literature studies<sup>29-31</sup>.

#### *Evaluation of personality traits*

Patients with PPD presented profiles by the MMPI-2 test that confirmed the presence of depression ( $D = 63.5$ ), which however appeared to be mainly the reactive type, as the F scale (*Frequency*) showed a mean value of 59.9. Women with PPD also seemed to be withdrawn, unsatisfied with themselves and their life, presented with fatigue and tired easily. This was associated with impoverishment of the affective state, communicative ability and a tendency towards self-blame. The presence of a low score in the group with PPD in the K scale (*Correction*), that was more or less within normal limits (46), was indicative of a personality characterized by rigidity, with a reduced capacity for management and elaboration of stress, who tend to resort to primitive defences.

Moreover, mothers presenting with depressive symptoms had anxiety related to their body that was above the mean ( $Hs = 63.2$ ), and complained of somatic symptoms such as palpitations, headache, tension and difficulty in



**FIGURE 2.** MMPI-2 profiles: both groups compared. *Profili medi dei due gruppi al MMPI-2.*

concentrating (Hy = 60.5). Interestingly, in about 60% of patients, there was a range of character traits formed by the Pd scale (psychopathy), Mf (adhesion to female stereotypes) and Pa (paranoia), which suggests an ambivalent condition of the woman towards the role of mother, associated with substantial aggressive and conflictual relations with close relationships. This profile, known as “4-6 Configuration” or “Passive-Aggressive Valley”, is commonly associated with characteristics of immaturity, tendency to require and ask for gratification from others and, at the same time, intolerance and suspiciousness towards the needs of others.

In addition, feelings of anger and difficulty in its expression can also be present, including passive-aggressive or borderline traits. Even if obsessive personality traits were not revealed, a certain rigidity emerged which would slow the elaboration of a new identity and adapting to the role of mother, who would hesitate in adhering rigidly into a stereotypical female role.

Lastly, hypersensitivity in interpersonal relations was observed, which manifested in difficulties in relationships and the tendency to prefer previous friendships. In spite of the presence of this range of character traits, these patients did not demonstrate negative inclination towards pharmacological treatment and psychotherapy. Figure 2 shows the typical profile that emerged from the MMPI-2 test in the PPD and control groups.

## Conclusions

On the basis of these preliminary data, it can be postulated that the depressive symptoms observed in our patient population, even though in a limited sample size, are related to specific personality traits. This leads to the hypothesis that disturbances in identity integration and modulation of affectivity are rooted in attachment styles such as preoccupied or fearful, and based on problematic representations of self, others and relationships. During pregnancy, the activation of such relational models can act as a vulnerability factor for the development of de-

pressive symptoms in the perinatal and postpartum periods. Obtaining information about personality characteristics, style of attachment and the relationship between these two features is useful to plan targeted interventions and secondary prevention, in order to support the development of both motherhood and parenting skills. Moreover, it would also be of interest to extend the study of pregnant women to those in the first and second trimester who report sub-threshold values of depression in screening tests or with a clinical diagnosis of minor depression. This would allow for better planning of interventions aimed at primary prevention.

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